Douglas PARTNERS

GROUNDED EXPERTISE

Report on Preliminary Site Investigation for Contamination

Bromelton Energy and Resource Centre, Lot 1 Beaudesert Boonah Rd

Lot 1 Beaudesert-Boonah Road, Bromelton

Prepared for Cleanaway Operations Pty Ltd

Project 219361.01

19 December 2025

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Glossary of Terms

ABC	ambient background concentration
ACL	added contaminant limit
ACM	asbestos-containing materials
ADWG	Australia Drinking Water Guidelines
AEC	area of environmental concern
AF	asbestos fines
ALS	Australian Laboratory Services
AST	above ground storage tank
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environmental & Conservation Council
ANZG	Australian and New Zealand Guidelines
As	arsenic
ASS	acid sulphate soil
BaP	benzo(a)pyrene (a polycyclic aromatic hydrocarbon compound)
BaP TEQ	benzo(a)pyrene toxic equivalence quotient
bgl	below ground level
BTEX	benzene, toluene, ethylbenzene, total xylenes (monocyclic aromatic hydrocarbons)
BTEXN	benzene, toluene, ethylbenzene, xylenes, naphthalene
Cd	cadmium
CEC	cation exchange capacity
CLR	Contaminated Land Register
CoC	chain of custody
CoPC	contaminants of potential concern
Cr	chromium (total)
CSM	conceptual site model
Cu	copper
Cx	equivalent carbon atoms in TRH groups
DA	development application
DCE	dichlororethene
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DES	Queensland Government Department of Environment and Science
DETSI	Queensland Government Department of the Environment, Tourism, Science and Innovation
DILGP	Queensland Department of Infrastructure, Local Government and Planning
DP	Douglas Partners Pty Ltd
D.P.	deposited plan
DNAPL	dense non-aqueous phase liquid
DSI	Detailed Site Investigation

DQI	data quality indicators
DQO	data quality objectives
EIL	Ecological Investigation levels
EMP	environmental management plan
EMR	Environmental Management Register
EPA	Environmental Protection Authority
ESA	Environmentally Sensitive Areas
ESL	Ecological Screening levels
F1	TPH Fraction C_6-C_{10}
F2	TPH Fraction >C_{10}-C_{16}
F3	TPH Fraction >C_{16}-C_{34}
F4	TPH Fraction >C_{34}-C_{40}
FA	fibrous asbestos
Fe	iron
GAC	groundwater assessment criteria
GDE	groundwater dependant ecosystems
GW	groundwater
GIL	groundwater investigation level
ha	hectares
HIL	Health Investigation Levels
Hg	mercury
HSL	Health Screening Levels
kL	kilolitre (1,000 litres).
km	kilometre
L	litre
LNAPL	light non-aqueous phase liquid
LOP	level of protection
LOR	laboratories limit of reporting
m	metre
mm	millimetre
m^2	square metre
mg/kg	milligrams per kilogram (or parts per million)
mg/L	milligrams per litre (or parts per million)
MSES	Matters of State Environmental Significance
MTBE	methyl tertiary butyl ether
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
Ni	nickel
NSW	New South Wales
ND(nd)	not detected
NHMRC	National Health and Medical Research Council

NRMMC	National Resource Management Ministerial Council
OCP	organochlorine pesticides
OEH	Office of Environment and Heritage
OPP	organophosphorus pesticides
PACM	Potential asbestos-containing materials
PAH	polycyclic aromatic hydrocarbon
Pb	lead
PCB	polychlorinated biphenyls
PCE	tetrachloroethene
PFAS	per- and polyfluoroalkyl substances
pH	unit measure of acidity/ alkalinity
PID	photoionisation detector
ppb	Parts per billion
ppm	Parts per million
PPE	personal protective equipment
PR	principal's representative
PSH	phase separated hydrocarbons
PSI	Preliminary Site Investigation
PQL	practical quantitation limit
QA	quality assurance
QC	quality control
OCP	organochlorine pesticides
QLD	Queensland
EfW	Energy from Waste
OPP	organophosphorus pesticides
RP	remediation plan
RL	relative level
RPD	relative percentage difference
SAC	site assessment criteria
SEQ	South East Queensland
SRRC	Scenic Rim Regional Council
SWL	standing water level
SWMS	safe work method statement
TCE	trichloroethene
TCLP	toxicity characteristic leaching procedure
TDS	total dissolved solids
TKN	total Kjeldahl nitrogen
TRH	total recoverable hydrocarbons
TOC	total organic carbon
TOPIC	total photoionisable compounds
TSS	total suspended solids
µg/L	microgram per litre (or parts per billion)

UCL	upper confidence limit of data set
UPSS	underground petroleum storage system (usually includes a UST)
UST	underground storage tank
VC	vinyl chloride
VCH	volatile chlorinated hydrocarbon
VHC	volatile halogenated compound
VOC	volatile organic compound
WHS	work health and safety
WQO	water quality objectives
Zn	zinc
µS/cm	Micro Siemens per centimetre a measure of conductivity and salinity.
%	percent
<	less than
≤	equal to or less than
>	greater than
≥	equal to or greater than

Note: Not all acronyms, initialisations and symbols listed above were used in the report

Executive Summary

Douglas Partners Pty Ltd (DP) was engaged by Cleanaway Operations Pty Ltd ('Cleanaway') to conduct this preliminary site investigation for contamination (PSI) for the proposed Bromelton Energy and Resource Centre (BERC), to be located on the northern third of Lot 1 on RP45234, Beaudesert Boonah Road, Bromelton (hereinafter referred to as 'the site'). The site boundary is shown on Drawing 1 provided in Appendix B.

The site covers the entire proposed development footprint area of approximately 21 ha and will be located within the northern third of the greater Lot 1, which covers a total area of approximately 63 ha. The proposed development is understood to include:

- Cut to fill earthworks to provide a terraced building area of approximately 21 ha;
- Construction of an energy from waste (EfW) facility, with a below ground bunker that could be up to 15 m below finished ground levels;
- Construction of administration and control buildings; and
- Formation of access road and car parking pavements, areas of landscaping and waste storage areas.

The objective of the PSI was to identify potential sources of contamination, evaluate the associated contaminants of potential concern (CoPC), identify areas and activities of potential contamination, identify potential human and ecological receptors and identify potentially affected media (e.g., soil and/or groundwater). This was achieved by conducting a desktop assessment of the site's history and other relevant environmental information, a site walkover inspection, a limited programme of soil and groundwater sampling within the footprint of the development area and surface water sampling of dams located to the south of the site. The results were used to establish whether further investigation and/or management controls are required before proceeding with the proposed development.

Based on the findings of the desktop review and site walkover, together with the results of the intrusive field works, the following conclusions have been made for the site:

- The site has been used for agricultural purposes since at least 1944;
- A 'dip', Douglas presumes to be a cattle/livestock dip, was marked within the central-northern area of the site on the 1927 historical map, contained within the Lotsearch report provided in Appendix E. The exact location of this dip is unknown, however it appears to be in a similar location on-site to the current spray race;
- A former cattle spray race is currently located on the site. The aerial photographs, provided within the Lotsearch report, indicate that the surrounding cattle pens were constructed sometime between 1965 and 1974. However, it is unknown when the spray race was used at the site;
- The intrusive soil investigation indicated that, when compared against the adopted SAC for commercial/industrial site use, contamination has not been detected at the locations and depths tested at concentrations that are considered to present a risk of harm to potential human and ecological receptors. However, it should be noted that as this was a preliminary site investigation only, the sampling density was significantly less than the recommended minimum sampling density for site characterisation (NSW EPA, 2022), and the potential exists for contaminated soil to be present across parts of the site that have not been

investigated by soil sampling and laboratory analysis (e.g.., in the area of the former spray race);

- Exceedances were detected above the adopted SAC for pH, EC, turbidity and metals in the groundwater samples collected from both groundwater monitoring wells; and
- Exceedances were detected above the adopted SAC for pH, turbidity, metals and nutrients in the surface water samples collected from the dams.

Based on the above conclusions, the following recommendations have been made:

- A potential for contamination was identified in the vicinity of the spray race. Additional soil and groundwater sampling in the vicinity of the spray race was conducted by Douglas in January 2024. Based on the additional investigation it was concluded that the spray race area is suitable for the proposed development. It was recommended that if discharge of groundwater is proposed, then treatment would be required due to the reported exceedances of the SAC. Douglas recommends that the owner or occupier of the land provide formal notification to the administering authority (DETSI) that a notifiable activity, i.e. operating a livestock dip or spray race facility appears to have been conducted on the land.
- The remainder of the site is considered to have a lower risk of contamination. Some potential for contamination still exists due to the site's history of agricultural use. If a detailed site investigation (DSI) over the larger site area is required, sampling should be conducted at sufficient density to meet the recommended minimum density detailed in NSW EPA (2022); and
- If discharge of groundwater or dam water to a watercourse is proposed, then treatment would be required due to the reported exceedances of the SAC.

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Appendix J: Laboratory Notes and Chain of Custody Documentation

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Report on Preliminary Site Investigation for Contamination Bromelton Energy and Resource Centre, Lot 1 Beaudesert Boonah Rd
Lot 1 Beaudesert-Boonah Road, Bromelton

1. Introduction

Douglas Partners Pty Ltd (Douglas) was engaged by Cleanaway Operations Pty Ltd ('Cleanaway') to conduct this preliminary site investigation for contamination (PSI) for the proposed Bromelton Energy and Resource Centre (BERC), to be located on the northern third of Lot 1 on RP45234, Beaudesert Boonah Road, Bromelton (hereinafter referred to as 'the site'). The site boundary is shown on Drawing 1 provided in Appendix B.

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The objective of the PSI was to identify potential sources of contamination, evaluate the associated contaminants of potential concern (CoPC), identify areas and activities of potential contamination, identify potential human and ecological receptors and identify potentially affected media (e.g., soil and/or groundwater). This was achieved by conducting a desktop assessment of the site's history and other relevant environmental information, a site walkover inspection, a limited programme of soil and groundwater sampling within the footprint of the development area, and surface water sampling of dams located to the south of the site. The results were used to establish whether further investigation and/or management controls are required before proceeding with the proposed development.

A preliminary geotechnical investigation conducted by Douglas for the project indicated that the subsurface conditions generally consist of topsoil, over stiff, grading very stiff then hard, residual clays over the upper 3 m depth.

This report must be read in conjunction with the notes entitled About this Report provided in Appendix A and all other explanatory information provided. It should also be kept in its entirety without the separation of individual sections and pages.

1.1 Regulatory context

The following key guidelines were consulted in the preparation of this report:

- National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [the 'NEPM'] (NEPC, 2013);
- The Environmental Protection Act 1994 (the 'EP Act 1994'); and
- Bromelton State Development Area Development Scheme December 2017 (State of Queensland, Department of State Development).

The Bromelton State Development Area (SDA) Development Scheme December 2017 details SDA wide assessment criteria, which includes the following criteria relating to contaminated land:

"2.5.7 Contaminated land

(1) Development on land likely to be contaminated or recorded on the Environmental Management Register or Contaminated Land Register does not adversely impact on human health or the environment by exposure, management, or movement of contaminants.

(2) Where required, develop a strategy to manage any existing contamination and the potential for additional contamination such that human health and the environment are not adversely affected."

1.2 Scope of work

The investigation comprised the following:

- A search for Lot 1 on RP45234 on the Environmental Management Register (EMR) and Contaminated Land Register (CLR) administered by the Queensland Government Department of the Environment, Technology, Science and Innovation (DETSI);
- A review of current and historical land title records and registered plans;
- A review of current and historical site information and aerial photographs contained in a commissioned independent Lotsearch Pty Ltd environmental report (the 'Lotsearch report');
- A review of site information including regional geology, acid sulfate soil risk, registered groundwater bores, historical business activities, ecological constraints and other planning-related information relevant to the assessment;
- A site inspection, noting indicators of potential contamination sources, receptors and pathways;
- Collection of soil samples from fourteen boreholes (Boreholes 7 to 20) which were drilled using a utility-mounted drilling rig equipped with solid flight augers for a concurrent geotechnical investigation (reported under separate cover). Soil samples were collected from the boreholes at a variety of depths based on site observations;
- Collection of groundwater samples from two groundwater monitoring wells which were installed as part of the concurrent geotechnical investigation. It should be noted that three wells were installed during the geotechnical works (MW7, MW8 and MW9), and it was originally proposed that all three wells would be sampled, however, at the time of sampling

one of the groundwater wells (MW7) was close to dry and therefore no sample could be collected;

- Collection of surface water samples from two offsite dams located to the south of the site;
- Analysis of selected soil samples, groundwater samples, surface water samples and quality control (QC) samples for a range of identified CoPC at a National Association of Testing Authorities (NATA) accredited laboratory;
- Collection of three soil samples from undisturbed natural soil and analysis for % iron, cation exchange capacity (CEC), pH, total organic carbon (TOC), % clay content and metals/metalloids to establish site-specific ecological investigation levels (EILs); and
- Preparation of this report.

2. Project description

The project description presented below was provided by Cleanaway.

2.1 Project Overview

Cleanaway Operations Pty Ltd (Cleanaway) is developing an Energy from Waste (EfW) facility in Queensland known as the Bromelton Energy and Resource Centre (BERC / the Project). The Project will be located within the Special Industry Precinct of the Bromelton State Development Area (SDA), west of Beaudesert within the Scenic Rim Regional Council local government area.

The Project has been designed to thermally treat approximately 760,000 tonnes per annum (tpa) of waste feedstock, consisting of residual Municipal Solid Waste (MSW) and residual Commercial and Industrial (C&I) waste. Residual waste is waste that is not technically, environmentally and economically practical (TEEP) to reuse or recycle, which would otherwise be sent to landfill for disposal. The facility's actual annual throughput will vary depending on the calorific value of the feedstock and plant availability. To account for variability in feedstock energy content, the facility will be designed for a maximum processing capacity of up to 10% above the nominal figure (836,000 tpa). The EfW process is summarised in Figure 1.

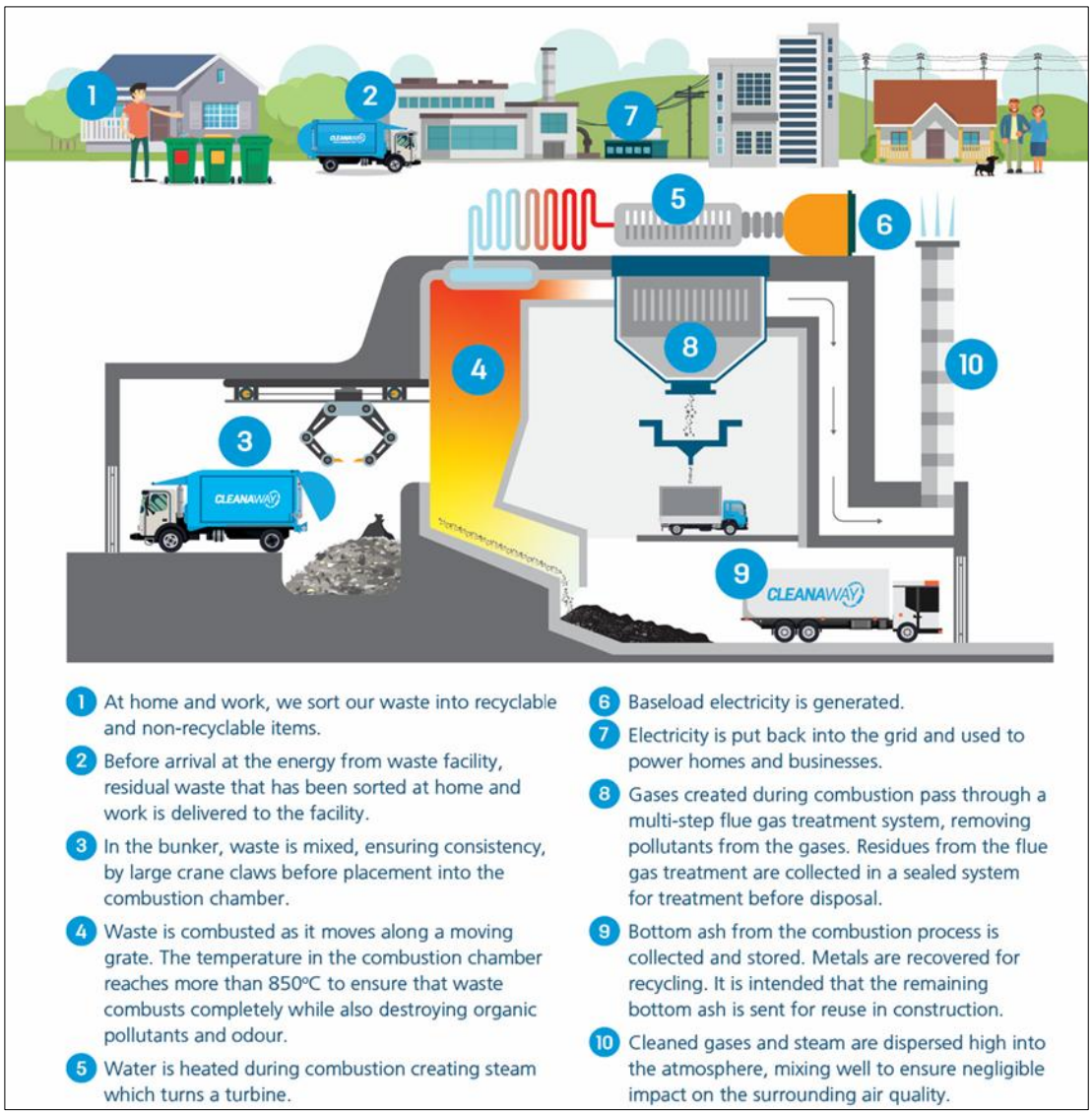


Figure 1: Energy from Waste Process

2.2 Proponent

Cleanaway, an Australian owned company, has operated for more than 50 years, supporting industry, government, communities and households across Australia. Its mission is to make a sustainable future possible, achieved through action across all levels of the waste hierarchy. Waste generation is minimised through extensive education programs, with Cleanaway's 50 education officers reaching over 120 businesses, 30 councils, and almost 33,000 school participants in the last financial year.

Cleanaway invests heavily in recycling, operating several Material Recovery Facilities nationwide and has partnered with Pact Group, Asahi Beverages and Coca-Cola to deliver two large-scale PET (polyethylene terephthalate) recycling facilities and a HDPE (high density polyethylene) recycling facility with Pact Group. In addition, in collaboration with Viva Energy, Cleanaway is developing a soft plastics recycling plant. EfW is recognised by Cleanaway as an important part

of the future waste management framework, enabling recovery of energy and other resources from residual waste that cannot otherwise be recycled.

2.3 Policy Alignment

The BERC aligns with the Queensland EfW Policy and the Queensland EfW Guideline (2021) by diverting residual waste from landfill and delivering economic and social benefits through employment and local business opportunities in South East Queensland.

In accordance with Policy outcome 7 of the Queensland EfW Policy, the BERC will be designed to meet the best practice emission standards and requirements of the European Industrial Emissions Directive (IED) (2010) and the associated Best Available Techniques Reference (BREF) Document for Waste Incineration (2019), which sets the European Union environmental standards for waste incineration.

The Project also supports the Queensland Waste Strategy contributing to its 2050 targets to reduce household waste by 25%, recycle 75% of all waste, and divert 90% from landfill. In doing so, the BERC will play a key role in advancing Queensland's transition to a circular economy and reducing long-term reliance on landfill.

2.4 Key Components

The key components of the Project are summarised in Table 1.

Table 1: Key Project Components

Project Component	Detail
Address	Lot 1 Beaudesert Boonah Road, Bromelton, Queensland, 4285 (Lot 1 on RP45234). Refer Figure 2.
Total Area	63 hectares
Summary of proposed works	The Project includes the construction of a main EfW facility for waste processing, incinerator bottom ash (IBA) maturation and processing facility and an air pollution control residue (APCr) facility. It also includes all onsite infrastructure needed for the EfW facility, such as site utilities, internal roads, weighbridges, parking and hardstand areas, stormwater infrastructure, fencing and landscaping. The Project will include a visitor centre to help educate and inform the community on circular economy principles, the waste hierarchy, including waste avoidance, recycling, resource recovery, the benefits of landfill diversion and the EfW process. The intent behind this education is to drive a shift in community awareness and attitudes toward waste management and resource recovery.

Project Component	Detail
Technology Used	The proposed technology is moving grate combustion technology. This has been used globally for over 100 years and is common in many of the 500 similar operational examples across Europe.
Facility Outputs	Approximately 73.2 MW (577,600 MWh/year, corrected for ambient temperature) exported to the grid as baseload electricity. Potential to supply energy in the form of heat and/or process steam to local industrial users. Residual materials include IBA and APCr. It is intended that the IBA will be mechanically processed on site to create incinerator bottom ash aggregate (IBAA). During this process, both ferrous and non-ferrous metals are recovered for recycling and sale. It is intended that the remaining material is repurposed for use as an aggregate in construction. The Project includes a facility to stabilise APCr before removal and disposal at a licensed landfill.
Key infrastructure	EfW facility including administration and visitor's centre IBA maturation and processing facility (2 x pads and 2 x sheds) APCr facility (1 x pad, 1 x shed) Transformer yard and switchyard De-coupling area for trucks Weighbridges Internal road network and carparking 2 x combined storm water treatment and detention basin 1 x lined retention basin Access from Beaudesert Boonah Road via a signalised intersection with Recycling Street
Hours of Operation	24 hours per day, seven days per week (365 days per year)
Operational Staff	Approximately 60 staff

3. Site information

The site identification details are presented in Table 2 below and the project area boundaries are outlined in Figure 2 below. The site boundaries (i.e. the investigation area for this report) are shown on Drawing 1 provided in Appendix B.



Figure 2: Site location and lot boundaries (red)

Table 2: Site identification details

Item	Details
Site address	Lot 1 Beaudesert Boonah Road, Bromelton, 4207
Legal description	Part of Lot 1 on RP45234
Site area	Site: 21 ha
SDA	Bromelton SDA
SDA development scheme	Special Industry Precinct
Local council area	Scenic Rim Regional Council (SRRC)

Item	Details
SRRC planning scheme	Special Purpose Zone
Current use	Grazing land
Surrounding uses	North – Industrial East – Railway line then grazing South – Grazing West – Grazing

4. Environmental setting

4.1 Listing on contamination registers

A search was conducted of the Queensland Government DETSI EMR and CLR on 9 December 2025. The search results indicated that the site was not listed on the EMR or CLR as at that date. The EMR and CLR search result is provided in Appendix C.

4.2 Proximity to environmentally sensitive areas

Reference to the *Queensland Globe* website indicates that the site is located within close proximity to several areas mapped as being Matters of State Environmental Significance (MSES), the closest being:

- An area comprising MSES regulated vegetation (essential habitat, and category C – endangered or of concern) and MSES wildlife habitat (SEQ koala habitat – core) – located on the adjacent lot to the south (Lot 1 on RP43189); and
- An area comprising MSES regulated vegetation (essential habitat, and category B – endangered or of concern), MSES wildlife habitat (SEQ koala habitat – core), and MSES regulated vegetation (defined watercourse), located in a corridor directly west of the north-western corner of the site.

MSES are defined by the Queensland Department of Infrastructure, Local Government and Planning (DILGP) as areas that "are valued and protected, and the health and resilience of biodiversity is maintained or enhanced to support ecological processes" (DILGP 2017). ESA mapping is provided in Appendix D.

4.3 Topography

Reference to the Lotsearch report (Appendix E) and the *Scenic Rim Planning Scheme 2020* website indicates that the site slopes from the crest of a hill in the western portion of the site, which has an approximate elevation of relative level (RL) 95 m relative to the Australian Height Datum (AHD), sloping down to the north-western and south-eastern corners of the site, with elevations of 85 m AHD and 75 m AHD respectively.

4.4 Site geology

Reference to the Lotsearch report indicates that the site is underlain by middle-Jurassic aged Walloon Coal Measures. The lithology of this unit consists of shale, siltstone, sandstone and coal seams.

4.5 Acid sulfate soils

Acid sulfate soils (ASS) are naturally occurring sediments and soils containing iron sulfides or sulfidic materials, often located over extensive low-lying coastal areas, predominately below 5 m relative to the AHD. Reference to the Lotsearch report indicates that the site is mapped as having an extremely low (1 to 5%) probability of occurrence of ASS. The southern portion of Lot 1 on RP45234 (not part of the proposed development footprint) was mapped as having a low probability of occurrence of ASS. Additionally, the site elevations are greater than 5 m above the AHD (refer to Section 4.3).

4.6 Surface water and groundwater

Reference to the *Queensland Globe* website indicated that man-made dams and a drainage channel are present close to the southern site boundary. This then appears to drain into Lake Brabazon located 3.7 km north-east of the site. Swan Creek is also located approximately 220 m south of Lot 1 on RP45234, and is part of a separate catchment to the drainage channel located on the site.

Reference to the Lotsearch report indicates that the aquifers located on the site were described as "*porous, extensive highly productive aquifers*".

A search of the publicly available registered groundwater bore database provided in the Lotsearch report indicates that there are seven registered groundwater bores within an approximate 500 m radius of Lot 1 on RP45234 and these have been summarised in Table 3 below.

Table 3: Summary of available information from nearby registered groundwater bores

Bore ID Authorised purpose Completion year Status	Location relative to Lot 1	Final depth (m)	Standing water level (m bgl)
RN194297 Sub-Artesian Monitoring 2021 Existing	103 m south-east	N/A	Not recorded
RN142889 Sub-Artesian Water Supply 2011 Existing	157 m north	64	8
RN138923 Sub-Artesian Facility 2009 Abandoned and Destroyed	162 m north	55	Not recorded

Bore ID Authorised purpose Completion year Status	Location relative to Lot 1	Final depth (m)	Standing water level (m bgl)
RN169359 Sub-Artesian Monitoring 2015 Existing	167 m south	14	Not recorded
RN169358 Sub-Artesian Monitoring 2015 Existing	308 m south	14	Not recorded
RN138924 Sub-Artesian Water Supply 2009 Existing	488 m north-west	31	6
RN169360 Sub-Artesian Monitoring 2015 Existing	491 m south-west	14	Not recorded

Notes:
m bgl – metres below ground level

Based on the regional topography and the inferred flow direction of nearby water courses, the anticipated flow direction of groundwater beneath the site is to the south-east towards the dams and drainage channel which drains into Lake Brabazon.

5. Site history

5.1 Historical aerial photography

Several historical aerial photographs were obtained from the Lotsearch report. Extracts of the aerial photographs are provided in Appendix E. A summary of the key features observed for Lot 1 on RP45234 which includes the site and surrounding land is presented in Table 4 below.

Table 4: Summary of historical aerial photographs

Year	Lot 1 on RP45234	Surrounding land use
1944	The lot appeared to be predominantly cleared, with sparse vegetation. The lot is considered to have been used for grazing purposes. A small dam was observed near the centre-eastern boundary and the south-western corner. A creek line was observed running from the centre-east of the lot through the dams and towards the south-western corner of the lot.	The surrounding areas appeared to have been predominantly cleared for grazing. Some vegetation was observed east of the lot. A railway line was observed along the eastern boundary of the lot. A creek was observed approximately 150 m south of the lot. A road was observed along the northern boundary of the site, west to east before diverting north to cross the train tracks. A small train station was observed north of the site along the railway line.
1958	An additional dam had been constructed approximately 150 m west of the eastern boundary. Soil disturbance was observed around this dam.	A possible cattle yard/crush with a rectangular structure (potential cattle dip) was observed approximately 450 m north-west of the site
1965	A small structure/object appeared to have been constructed in the centre of the north-western section of the lot.	Construction works for Beaudesert Boonah road were apparent north of the site. A small dam appeared to have been excavated approximately 150m north of the site. A small building (potentially residential) appeared to have been constructed approximately 320 m west of the site.
1974	Fencing and small agricultural structures (possibly a cattle yard) appeared to have been constructed in the north-western section of the lot (and within the site boundary).	Several structures appeared to have been constructed approximately 200 m north of the site and 150 m west of the site. Additional smaller structures and potential tanks were observed around the original small building to the west of the site. A large retention basin/dam and earthworks were observed south-east of the lot. The possible cattle yard/ cattle dip previously observed located approximately 450 m north-west of the site appeared to have been removed.

Year	Lot 1 on RP45234	Surrounding land use
1982	The lot appeared similar to the 1974 image.	Extensive earthworks were observed approximately 450 m north-west of the site. A fenced area was observed near the structures located 320 m west of the site. An additional retention basin appeared to have been constructed south-east of the lot. Several smaller structures to the north of the site appeared to have been removed.
1993	A dam near the centre of the lot had increased in size. A track was observed leading from the northern boundary to the north-western structures. Increased vegetation was observed in the south-western corner of the lot.	Possible stockpiles and soil disturbance were observed to the west and north-west of the site. A possible cattle yard was observed directly east of the site. Earthworks were observed west of the retention pond/dams located south of the lot.
2004	The lot appeared similar to the 1993 image.	A road had been constructed north of the northern boundary of the site, connecting previous roads. A triangular-shaped block of land directly north of the site appeared to have been developed for industrial purposes. Additional structures were also observed approximately 300 m north-west of the site. The possible cattle yards located directly east of the site appeared to have ceased activities and a small structure was located south of it. A large dam was observed approximately 150 m west of the site.
2012	The lot appeared similar to the 2004 image.	Industrial structures appeared to have been constructed north of the site, within the triangular-shaped block across Beaudesert Boonah Road. Earthworks were observed approximately 400 m north-east of the site.
2016	The lot appeared similar to the 2012 image.	The surrounding areas appeared similar to the 2012 image.
2020	The lot appeared similar to the 2016 image.	Additional roads had been constructed north of the site.
2022	The lot appeared similar to the 2020 image.	The surrounding areas appeared similar to the 2020 image.

5.2 Historic titles

A historical title deeds search was used to obtain ownership and occupancy information including company names and the occupations of individuals. The title information can assist in the identification of previous land uses by the company names or the site owners and can, therefore, assist in establishing whether there were potentially contaminating activities occurring at the site. A summary of the title deeds and possible land use is presented in Table 5 overleaf and provided in Appendix F.

Table 5: Historical title deeds

Date of Acquisition and Term Held	Registered Proprietor(s) & Occupations	Inferred Land Use
28.09.1917 (1917 to 1921)	Thomas Hutcheson Todd	Agricultural
16.12.1921 (1921 to 1956)	Jane Isabel Todd (widow) William Todd George Alexander Todd	Agricultural
02.08.1956 (1956 to 1958)	Stephen James Murray Thomas William Murray	Agricultural
12.12.1958 (1958 to 1960)	Stephen James Murray	Agricultural
26.09.1960 (1960 to 1964)	Edward Joseph Yore	Agricultural
12.11.1964 (1964 to 1991)	Danby William Franklin	Agricultural
11.02.1991 (1991 to 1995)	Donald John Franklin Stuart Franklin	Agricultural
14.08.1995 (1995 to 2011)	Consolidated Meat Holdings Pty Ltd	Agricultural
08.11.2011 (2011 to 2022)	Teys Investments Pty Ltd	Agricultural
20.12.2022 (2022 to Date)	Queensland Energy and Resource Centre Pty (As Trustee)	Agricultural

5.3 Historical maps

Historical maps within the Lotsearch report indicated the following:

- 1927 Map:
  - Two 'dips' were marked on the 1927 map. These are presumed to be livestock dips. One dip was marked within the central-northern portion of the lot, within the site boundary, and the other was marked approximately 800 m east of the site.
  - Bromelton School was located approximately 1.0 km south-west of the site.
  - The construction of the railway line had yet to be completed.
- 1954 Map:
  - The railway line had been completed and the station was located approximately 370 m north of the site.
- 1972 Map:
  - A property labelled "Tancred Bros Pty Ltd" was located directly south-east of the site. Reference to the Australia Dictionary of Biography (2002), indicates that Tancred Bros Pty Ltd was one of Australia's largest meat butchering firms and was established in 1922 and the Beaudesert site mentioned in Section 4.3 was one of their notable meat works.
- 1998 Map:
  - Abattoirs were identified approximately 1.0 km north and south of the site.
  - A quarry was identified approximately 1.5 km south-east of the site.
  - Several 'ruins' were identified near the site including:
  - 1.0 km east of the site
  - 1.0 km west of the site
  - 1.7 km east of the site
  - 1.9 km north-west of the site

5.4 Site history integrity assessment

The information used to establish the history of the site was sourced from reputable and reliable reference documents, many of which were official records held by Government departments/agencies. The databases maintained by various Government agencies potentially can contain high quality information, but some of these do not contain any data.

In particular, aerial photographs can provide high quality information that is generally independent of memory or documentation. They are only available at intervals of several years, so some gaps exist in the information from this source. The observed site features are open to different interpretations and can be affected by the time of day and/or year at which they were taken, as well as specific events, such as flooding. Care has been taken to consider different possible interpretations of aerial photographs and to consider them in conjunction with other lines of evidence.

5.5 Summary of site history

The site history information suggests that the lot was acquired by the current owners in 2022. Information on historical aerial photographs, maps and historical leases suggest that the site has been used for agricultural purposes since at least 1927 and during this time several cattle yards appeared to have been constructed on the site. A number of potential cattle dips were observed within the surrounding area, including one within 150 m of the site. It should also be noted that the word 'dip', Douglas presumes to be cattle dip, was marked within the centre-north of the site on the 1927 historical map.

6. Site walkover

A site walkover was conducted by Douglas Environmental Scientist Chloe Jones on 3 July 2023. The general topography was consistent with that described in Section 4.3. The site layout appears to have remained unchanged from the 2022 aerial photograph, provided in the Lotsearch report. The following key site features pertinent to the PSI were observed (refer to photographs provided in Appendix G):

- At the time of the inspection the site was used for cattle grazing. The site surface was densely covered with groundcover (i.e., grasses) and a sparse covering of trees (photograph 1). The vegetation generally appeared healthy and in good condition.
- A cattle crush and adjoining cattle pens were observed in the north-western portion of the site (photographs 2, 3 and 4). Infrastructure and pipes, associated with a cattle spray race, were also observed attached to the cattle crush (photographs 5, 6 and 7). The cattle crush was measured to be approximately 20 m in length and 1 m in width. The spray race proportion of the cattle crush was approximately 4 m in length. Two cattle pens were observed joining the cattle crush which were each measured to be approximately 70 m^2 (photographs 3 and 4). Bare ground (i.e., sparse groundcover growth) appeared to surround the area of the spray race (photographs 5 and 8). A rectangular concrete pad was observed on the ground in the entrance of the cattle crush (photographs 9 and 10). The pad was noted to be in poor condition.
- A rusted tray from a ute was observed within the southern portion of the site.
- Two dams were observed directly south of the site, however, they were located within Lot 1 on RP45234 (photographs 11 and 12).
- The site surface was undulating, however, the site generally sloped downward to the south-east (photograph 1).
- No obvious potential asbestos-containing materials (PACM) were observed across the surface of the site, where visible.
- No obvious odours, soil staining or storage of bulk chemicals were encountered across the inspected areas of the site.

7. Preliminary conceptual site model

A conceptual site model (CSM) is a theoretical representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM provides the framework for identifying how the site may become contaminated and how potential receptors may be exposed to contamination either in the present or the future i.e., it enables an assessment of the potential source – pathway – receptor linkages (complete pathways).

Potential sources (S)

Based on the current investigation, the following potential sources of contamination and associated contaminants of potential concern (CoPC) have been identified.

- S1: Agricultural activities.
  - Various CoPC and could include metals/metalloids, ammonia, nitrates, phosphorus, organophosphorus pesticides (OPP), organochlorine pesticides (OCP), per- and polyfluoroalkyl substances (PFAS) and asbestos (from demolition of structures).
- S2: Spray race and potential historic cattle dip (as shown on the 1927 Historical Map).
  - Depending on age CoPC could include arsenic, carbamate pesticides, OCP including dichlorodiphenyltrichloroethane (DDT) and dieldrin, OPP, synthetic pyrethroids and herbicides.

Potential receptors (R)

The following potential human receptors have been identified:

- R1: Future construction and maintenance workers;
- R2: End users (i.e., workers and visitors to the BERC); and
- R3: Adjacent site users.

The following potential environmental receptors have been identified:

- R4: Surface water (nearby dams, watercourses and drainage channels);
- R5: Groundwater and groundwater dependent ecosystems (GDE); and
- R6: Terrestrial ecology, including nearby MSES areas.

Potential pathways (P)

The following potential pathways have been identified:

- P1: Ingestion (including via drinking water) and dermal contact;
- P2: Inhalation of dust, fibres and/or vapours;
- P3: Surface water run-off;
- P4: Leaching of contaminants and vertical migration into groundwater;
- P5: Lateral migration of groundwater providing base flow to water bodies; and
- P6: Inhalation, ingestion, and absorption by terrestrial ecology.

Summary of potentially complete exposure pathways

A 'source–pathway–receptor' approach has been used to assess the potential risks of harm being caused to human or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways (potential complete pathways). The possible pathways (P1 to P6) between the above sources (S1 to S2) and receptors (R1 to R6) are provided below in Table 6.

Table 6: Summary of Potentially Complete Exposure Pathways

Source and CoPC	Transport Pathway	Receptor
S1: Agricultural activities – metals/metalloids, ammonia, nitrates, phosphorus, OPP, OCP, PFAS and asbestos. S2: Spray race and potential cattle dip – arsenic, carbamate pesticides, OCP, OPP, synthetic pyrethroids and herbicides.	P1: Ingestion (including via drinking water) and dermal contact P2: Inhalation of dust, fibres and/or vapours P3: Surface water run-off P4: Leaching of contaminants and vertical migration into groundwater P5: Lateral migration of groundwater providing base flow to water bodies P6: Inhalation, ingestion, and absorption by terrestrial ecology	R1: Construction and maintenance workers R2: End users R3: Adjacent site users R4: Surface water R5: Groundwater and GDE R6: Terrestrial ecology

8. Sampling and analysis quality plan

8.1 Data quality objectives

Data qualitative objectives (DQOs) are qualitative and quantitative statements that specify the data required for the assessment and have been derived from the CSM (Table 6). The DQO process is a seven-step iterative planning approach that is specified in the NEPM (Schedule B2, Appendix B) used to define the type, quantity and quality of data needed to inform decisions relating to the environmental condition of a site.

Table 7: Project data quality objectives

Problem	Uncertainty exists as to whether contamination exists at the site
Identify the decision/goal	• Does soil and/or groundwater contamination exist from previous site uses/activities? • Does the site, or is the site likely to, present a risk of harm to human health or the environment? • Does the site require further investigation, remediation and/or validation to render the site suitable for the proposed use? • Is there any contamination requiring the site to be listed on the DETSI EMR or CLR?

Information inputs	• Historical information regarding past land uses and features. • Site operations and observation details. • Soil profile information obtained through the sampling phase. • Chemical analysis data for soil and groundwater samples analysed. • Assessment of analytical data against applicable site assessment criteria (SAC).
Study boundaries	The physical site boundary is shown on Drawing 1, Appendix B . The temporal boundary of this assessment is limited to the time at which the assessment was conducted.
Decision rules	Information obtained in this investigation is to be used to make an assessment of contamination issues likely to impact on the proposed development. In assessing analytical data against investigation or screening levels for ecological and/or human health risk, site conditions can be stated to be acceptable if either: • All results are below the relevant investigation or screening level; OR • Individual concentrations of analytes (non-volatile) are less than 250% of the relevant investigation or screening level; and • The 95% upper confidence limit (UCL) of mean concentrations of a data set for samples of like material is below the relevant investigation or screening level; and • The standard deviation of the population is <50% of the investigation or relevant screening level. Statistical analysis should only be conducted where analytical results for a contaminant of concern are recorded above, but less than 250% of the relevant investigation or screening level. • Laboratory results are accepted and considered suitable for this assessment under the following conditions: o All laboratories are accredited by NATA for all analyses to be performed; o All practical quantitation limits (PQLs), or laboratory limits of reporting (LORs) set by the laboratories fall below the adopted assessment criteria; o Reported concentrations of analytes in the replicate and/or split sample pairs are within accepted limits; and o Quality assurance/quality control (QA/QC) protocols and results reported by the laboratories comply with the requirements of the NEPM (Schedule B3).

Performance criteria	Analyte selection is based on available site history information, observed site activities, site features, and field observations during sampling. The potential for contaminants to be present other than those analysed is considered to be low. Assessment criteria adopted from the guidelines stated in Section 9 incorporate risk probabilities. Acceptable limits for replicate/split comparisons are described in Appendix H. Acceptable limits for laboratory QA/QC parameters are based on those stated by the laboratory and those stated in the NEPM (Schedule B3).
Optimise design	Procedures for the collection of environmental samples, as described in Section 8.3, were developed prior to undertaking the assessment phase of works with reference to NSW EPA (2022), NEPM and current good industry practice. Use of NATA accredited analytical laboratories to conduct sample analyses.

8.2 Summary of field methodologies

Field investigations were conducted by Douglas Geotechnical Engineer Nattapong Sumonta and Environmental Scientists Shan-Ying Barr and Chloe Jones on 24, 25, 29, 30 and 31 May and 2 June 2023 and comprised the following activities:

24, 25, 29, 30 and 31 May 2023: Environmental Soil Sampling

- Collection of soil samples from 14 boreholes (Boreholes 7 to 20) at various depth intervals; and
- Collection of additional soil samples for quality control (QC) purposes (as discussed in Appendix H).

2 June 2023 November 2022: Groundwater and Surface Water Sampling

- Collection of two groundwater samples from two on-site groundwater monitoring wells; and
- Collection of surface water samples from two dams, located on the same lot, but south of the current site investigation area.

8.3 Soil sampling

8.3.1 Sampling strategy

The sampling locations were selected for the concurrent geotechnical investigation and were distributed across the site to provide geotechnical information in proposed development footprint. The sampling locations are shown on Drawing 1, Appendix B. The sampling density (i.e., 14 test locations) represents approximately 6% of the recommended minimum density presented in the NSW Environment Protection Authority (EPA) sampling design guidelines for contaminated land for characterisation of a site covering an area of 20 ha (NSW EPA, 2022). Douglas notes that the Australian Standards relating to the investigation and sampling of sites

with potentially contaminated soil, AS4482.1[1] and AS4482.2[2], were withdrawn in 2022 and not replaced. The NSW EPA (2022) guidelines are generally accepted as being the most current and comprehensive sampling design guidelines in Australia, and are also widely used in Queensland.

8.3.2 Sampling methodology

To obtain representative samples and to maintain their integrity soil was sampled with reference to the NEPM and the standard operating procedures described in Douglas' Field Procedures Manual.

8.3.3 Sample handling

All samples were recorded on chain of custody sheets, and the general sampling procedure comprised:

- Collection of soil samples from the drilling augers. Samples collected from the augers were obtained from the outside of the augers, i.e., from soil that had not been in direct contact with the augers;
- Sampler wearing disposable gloves that were changed prior to the collection of each sample;
- Transfer of samples for non PFAS testing into laboratory-prepared glass jars with Teflon-lined lids and sealing immediately;
- Transfer of samples for PFAS testing into laboratory-prepared HDPE plastic jars;
- Transfer of samples for asbestos testing into zip-locked plastic bags;
- Various sampling for QC purposes (refer to Appendix H);
- Labelling of sample containers with individual and unique identification details, including project number and sample location; and
- Placement of the glass and plastic sample jars and zip-locked plastic bags into ice-cooled, insulated and sealed containers for transport to the laboratory.

Sample integrity was maintained by keeping all samples sealed in appropriate glass and plastic jars and in ice-cooled, insulated containers immediately after sampling. Samples were sent to the laboratory following the completion of sampling with ice present. Samples were all received by the laboratory in good condition, in the correct containers without headspace, and within the laboratory's recommended holding times outlined in the NEPM (2013). It is considered that the integrity of samples was preserved during temporary storage and transportation to the laboratory. Chain of custody and sample receipt documentation is provided in Appendix J.

[1] Standards Australia (2005) Australian Standard AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds*

[2] Standards Australia (1999) Australian Standard AS 4482.2 (1999) *Guide to the investigation and sampling of sites with potentially contaminated soil – Part 2: Volatile substances*

8.4 Groundwater sampling

Douglas Environmental Scientist Chloe Jones sampled two groundwater monitoring wells (installed for the concurrent geotechnical investigation) on 2 June 2023. To ensure the samples were representative and to maintain their integrity groundwater sampling was carried out with reference to the standard operating procedures described in Douglas' Field Procedures Manual.

Samples were recorded on a chain of custody sheet, and the general sampling procedure comprised:

- Gauging of the depth to groundwater using an interface probe;
- Purging of approximately three well volumes to ensure that a representative groundwater sample was collected;
- Monitoring of groundwater field parameters until measurements were consistent;
- Collection of a representative groundwater sample from the well using a disposable bailer and transfer of the sample directly into the appropriate laboratory prepared containers;
- Labelling of sample containers with individual and unique identification details, including project number and sample location;
- Various sampling for QC purposes (refer to Appendix H); and
- Temporary storage of sample containers in an ice-cooled, insulated and sealed container for transport to the laboratory.

Sample integrity was maintained by keeping all samples in sealed glass receptacles and in ice-cooled, insulated containers immediately after sampling. Samples were sent to the laboratory following the completion of sampling with ice present. Samples were all received by the laboratory in good condition, in the correct containers without headspace, and within the laboratory's recommended holding times outlined in the NEPM (2013). It is considered that the integrity of samples was preserved during temporary storage and transportation to the laboratory. Chain of custody and sample receipt documentation is provided in Appendix J.

8.4.1 Equipment decontamination procedures

The interface probe was decontaminated between each well by brushing in a solution of Decon 90, then rinsing with distilled water and leaving to air dry. A rinsate sample was collected and analysed. The interface probe was considered to be free from contamination based on the analytical results of the rinsate sample.

8.5 Surface water sampling

To assess the current contamination status of the dams located on the Lot, sampling of surface water from two dams was conducted by Douglas Environmental Scientist, Chloe Jones, on 2 June 2023. Sampling was carried out with reference to the standard operating procedures described in Douglas' Field Procedures Manual to ensure that the samples are representative and to maintain their integrity.

Samples were recorded on a Douglas chain of custody sheet, and the general sampling procedure comprised:

- Inserting a bottle into the sampling pole and collecting water samples;
- Measuring of surface water field parameters using a calibrated multi-parameter water quality meter and calibrated turbidity meter;
- Transfer of the samples directly into appropriate laboratory prepared containers;
- Labelling of sample containers with individual and unique identification details, including project number and sample location; and
- Placement of the sample bottles into ice-cooled, insulated and sealed containers for transport to the laboratory.

Sample integrity was maintained by keeping all samples in sealed glass jars and in ice-cooled, insulated containers immediately after sampling. Samples were sent on the same day as sampling to the laboratory with ice present. Samples were all received by the laboratory in good condition, in the correct containers without headspace, and within the laboratory's recommended holding times outlined in the NEPM (2013). It is considered that the integrity of samples was preserved during temporary storage and transportation to the laboratory. Chain of custody and sample receipt documentation is provided in Appendix J.

8.6 Rationale for selection of samples for laboratory analysis

A total of 70 primary soil samples, two primary groundwater samples and two primary surface water samples were collected during the field investigation and sent to Eurofins Brisbane laboratory, located at 26 Smallwood Place, Murarrie, QLD. A total of 14 soil samples (i.e., one sample per borehole) were analysed for a broad range of CoPC comprising metals/metalloids (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), TRH, BTEXN, PAH, OCP, OPP, PCB, phenols, PFAS and asbestos (presence/absence) identification. Both groundwater samples were analysed for CoPC comprising metals/metalloids, TRH, BTEX, PAH, OCP, OPP and PFAS. Both surface water samples were analysed for metals/metalloids, TRH, BTEXN, PAH, OCP, OPP, PFAS and nutrients (total nitrogen (N), total Kjeldahl nitrogen (TKN), NO_x, NO_2, NO_3, NH_3, total phosphorus, reactive phosphorus).

In addition, one intra-laboratory replicate soil sample (S1), one intra-laboratory replicate groundwater sample (MWR1), two trip blank samples and two trip spike samples were analysed by Eurofins for QC purposes. One inter-laboratory replicate soil sample (R1) and one inter-laboratory groundwater sample (MWS1) were also analysed by Australian Laboratory Services Pty Ltd (ALS), at 2 Blyth Street, Stafford, for QC purposes. Both laboratories are accredited by NATA for all analyses undertaken.

9. Site assessment criteria

9.1 Soil investigation levels

The site assessment criteria (SAC) applied in the current investigation are informed by the preliminary CSM which identified human and ecological receptors to potential contamination on the site. Analytical soil results were compared against the investigation and screening levels presented in Schedule B1 of NEPM (NEPC, 2013). NEPC (2013) is endorsed by the DETSI under the *National Environment Protection Council Act 1994*.

The NEPM guidelines are applicable to generic land use settings and include consideration of the soil type and depth of parameters for some analytes. They are broadly divided into two groups, health- based investigation or screening levels (HIL/HSLs) representing risks to human receptors, and ecological investigation or screening levels (EIL/ESLs) representing risks to ecological and/or environmental receptors. Screening levels are not intended to be used as clean-up levels; rather, they establish concentrations above which further investigation should be conducted. They are intentionally conservative and are based on a reasonable worst-case scenario.

Given the proposed development the following criteria were adopted for this investigation:

- HIL/HSL – D: Commercial/industrial land use scenario; and
- ESL/EIL – D: Commercial/industrial land use scenario.

EILs were adopted for selected metals and organic compounds and are applicable for assessing risk to terrestrial ecosystems (NEPC, 2013). EILs depend on specific soil physiochemical properties and land use scenarios and generally apply to the top 2 m of soil, which corresponds to the root zone and habitation zone of many species. The EIL is determined for a contaminant based on the sum of the ambient background concentration (ABC) and an added contaminant limit (ACL). The EIL is calculated using the following formula:

- EIL = ABC + ACL

EILs were derived using the Interactive (Excel) Calculation Spreadsheet (from the NEPM Toolbox on the NEPC website) using input parameters of Queensland (the State in which the site is located), and low traffic volumes. Two samples collected from undisturbed areas of the site were analysed for % iron, CEC, pH, TOC and % clay content. The results of these samples were averaged and used as input parameters in the Interactive (Excel) Calculation Spreadsheet. The soils have been measured to have an average pH of 6.6, CEC of 49 cmol/kg, TOC of 0.45 %, % iron of 3.45 % and % clay of 14.5 %.

PFAS assessment criteria comprised the guidelines presented in the PFAS NEMP (Version 3.0) (HEPA, 2025). The PFAS NEMP guidelines are broadly consistent with the NEPM HIL/HSL and EIL/ESL categories including consideration of site land use. We note that the previous versions of this report (i.e. draft, revision 0 and revision 1) were completed prior to the release of the PFAS NEMP (Version 3.0), and the guidelines presented in the PFAS NEMP (Version 2.0) (HEPA, 2020) were adopted. As some of the guideline values were changed, the implications for the interpretation of PFAS analytical results are discussed in Section 11.

The following NEMP criteria were adopted for this investigation:

- Human Health Investigation Level (HHIL) – commercial/industrial use;
- Ecological Guideline Value for Direct Exposure (EGV-DE) – Applicable to all land uses; and
- Ecological Guideline Value for Indirect Exposure (EGV-IE) – Applicable to all land uses.

9.2 Groundwater and surface water investigation levels

Surface water quality should meet the water quality objectives (WQOs) set for waters local to the site. WQOs for moderately disturbed, lowland freshwaters of the Western Logan River Fresh Waters in the Logan River Basin (DES 2022, Table 2) were adopted to assess water quality at the site in comparison with the expected regional conditions.

Regional guidelines were prioritised to allow for assessment against local conditions. The following guidelines were applied to assess water analytical data from the site in the following order of priority: DES (2022: Table 2), ANZG (2018: Table 3.4.1, trigger values for 95% protection of slightly-moderately disturbed freshwater ecosystems), NEPC (2013: Schedule B1, Table 1C Groundwater Investigation Levels (GILs) for freshwater aquatic ecosystems) and Table 10.6 of the 2011 Australian Drinking Water Guidelines (ADWG) (NRMMC, 2022). Guideline values for PFAS in groundwater were derived from the PFAS NEMP (HEPA, 2025: Table 5, Ecological water quality guideline values for 95% protection of freshwater ecosystems).

10. Ground conditions

Details of the subsurface conditions encountered in the boreholes are given on the borehole logs provided in Appendix I. The logs should be read in conjunction with the notes 'About this Report' and other explanatory notes presented in Appendix I, which comment on the sampling methods, soil descriptions, and symbols and abbreviations used in their preparation.

In summary, the subsurface conditions generally comprised **topsoil** over **residual clay** and **extremely weathered siltstone** then bedrock of predominant **siltstone** and **mudstone** with interbedded **sandstone**. Further details of this profile are presented below:

- Topsoil: a 0.1 m to 0.3 m (averaging 0.2 m) thick layer of sandy clay with grass roots;
- Residual clay: generally stiff then very stiff, and hard where trending to extremely weathered siltstone and mudstone, medium or high plasticity silty or sandy clay from below the topsoil to the borehole termination depth, or to depths of between 1.6 m and 9.7 m where rock was encountered; and
- Siltstone, mudstone and sandstone: generally very low strength siltstone or mudstone that graded to low strength and had interbeds of sandstone in BH7 and BH8, and very low strength sandstone in BH9 that graded to low then low to medium strength with depth, to the termination depths in all boreholes where encountered.

Inferred very low strength siltstone and mudstone that caused drilling auger refusal was also encountered in BH10 to BH14 and BH17 and BH18 at depths of 1.6 m to 5.5 m.

No groundwater was observed during auger drilling for the investigation, in any of the boreholes and to a maximum depth of approximately 7.2 m. In the deep boreholes where wash boring techniques were adopted after augering, the presence of groundwater was obscured by the use of drilling muds. Subsequent groundwater monitoring of the wells in the deep boreholes on 2 June 2023, indicated groundwater depths of about 11.7 m in BH7, 11.4 m in BH8 and 15.4 m in BH9. In relation to the groundwater depths and ground moisture condition, it must be noted that they are affected by climatic conditions, soil and rock permeability, human influences and other factors, and will therefore vary with time.

11. Discussion of results

11.1 Soil investigation results

With reference to Tables K1 to K4 provided in Appendix K, concentrations of arsenic, total chromium, copper, lead, mercury, nickel, zinc and TRH (Fraction F3 and F4) above the laboratory

limits of reporting (LOR) were present in some soil samples. However, all concentrations were below the adopted SAC. No other potential contaminants were present in concentrations above the LOR. No asbestos was detected in the soil samples analysed.

Table K4 has been revised since the previous versions of this report to update the SAC with the HEPA (2025) ecological guideline values for ecological indirect exposure, which were revised from the values detailed in HEPA (2020). Specifically, the guideline value for PFOS was reduced from 10 µg/kg to 3 µg/kg, and a guideline value for PFOA of 3 µg/kg was adopted, where there had previously been no guideline value. This resulted in the LOR for both PFOS and PFOA of 5 µg/kg exceeding the revised guideline values. Douglas does not consider that this affects the interpretation of the results, as all PFAS analytical results were below the LOR, the adopted HIL-D and the guideline values for ecological direct exposure. Douglas considers that the results do not indicate an unacceptable risk due to PFAS contamination.

11.2 **Groundwater investigation results**

With reference to Tables K5 to K12 provided in Appendix K, the field-measured parameters and laboratory analytical groundwater results for the CoPC were below the adopted SAC except for the following:

- The pH value of MW8, measured to be 8.4, was above the DES (2022) and ANZECC (2000) criteria upper limit of 8.0;
- The electrical conductivity (EC) values for both groundwater wells were above the DES (2022) and ANZECC (2000) criteria;
- The turbidity values for both groundwater wells were above the DES (2022), ADWG (2011) and ANZECC (2000) criteria;
- Total chromium in samples MW8, MW9 and MWR1 (the replicate sample of MW9) reported at concentrations of 2 µg/L, 3 µg/L, and 2 µg/L, respectively, which exceeded the adopted NEPC (2013) GIL and ANZG (2018) criteria of 1 µg/L;
- Copper in all groundwater samples, reported at concentrations ranging between 2 µg/L and 29 µg/L, which exceeded the adopted NEPC (2013) GIL and ANZG (2018) criteria of 1.4 µg/L. The highest concentration of 29 µg/L was reported in MW8;
- Lead in sample MW8 reported at a concentration of 9 µg/L, which exceeded the adopted NEPC (2013) GIL and ANZG (2018) criterion of 3.4 µg/L;
- Mercury in samples MW8 and MW9 at concentrations of 0.3 µg/L and 0.1 µg/L, respectively, which exceeded the adopted NEPC (2013) GIL criterion of 0.06 µg/L; and
- Zinc in all groundwater samples, reported at concentrations ranging between 15 µg/L and 43 µg/L, which exceeded the adopted NEPC (2013) GIL and ANZG (2018) criteria of 8 µg/L. The highest concentration of 43 µg/L was reported in MW8.

It should also be noted that concentrations of TRH were detected in both groundwater wells for several carbon fraction groups, with the concentration for the sum of TRH (>C_{10}-C_{40}) being reported as 8,500 µg/L in MW8 and 1,890 µg/L in MW9. While there are no established guideline values for some of these analytes, the concentrations detected are not considered to present a significant risk to potential human receptors at the site for the following reasons:

- The concentrations of volatile TRH detected (i.e., TRH F1 and F2) do not present a risk to potential human receptors at the site via the vapour intrusion pathway; and

- There is not expected to be any use of groundwater at the site that would expose potential human receptors via the pathways of ingestion and dermal contact.

11.3 Surface water investigation results

With reference to Tables K5 to K12 provided in Appendix K, the field-measured parameters and laboratory analytical surface water results for the CoPC were below the adopted SAC except for the following:

- The pH values for both dams were above the DES (2022) and ANZECC (2000) criteria;
- The turbidity values for both dams were above the DES (2022), ADWG (2011) and ANZECC (2000) criteria;
- Arsenic in sample SW2 was reported at a concentration of 16 µg/L which exceeded the adopted NEPC (2013) GIL criterion of 13 µg/L and ADWG (2011) criterion of 10 µg/L. However, it should be noted that the criterion of 13 µg/L is for pentavalent chromium (As(V)), while a criterion of 24 µg/L applies to trivalent arsenic (As(III)), and the concentrations reported by the laboratory are for total arsenic;
- Total chromium in sample SW2 reported at a concentration of 20 µg/L which exceeded the adopted NEPC (2013) GIL and ANZG (2018) criteria of 1 µg/L;
- Copper in both samples SW1 and SW2, reported at concentrations of 2 µg/L and 64 µg/L respectively, which exceeded the adopted NEPC (2013) GIL and ANZG (2018) criteria of 1.4 µg/L.
- Lead in sample SW2, reported at a concentration of 57 µg/L, which exceeded the adopted NEPC (2013) GIL and ANZG (2018) criteria of 3.4 µg/L;
- Mercury in sample SW2 at a concentration of 0.1 µg/L, which exceeded the adopted NEPC (2013) GIL criterion of 0.06 µg/L;
- Nickel in sample SW2 at a concentration of 29 µg/L which exceeded the NEPC (2013) GIL and ANZG (2018) criteria of 11 µg/L and the ADWG (2011) criterion of 20 µg/L;
- Zinc in both samples SW1 and SW2 reported at concentrations of 8 µg/L and 130 µg/L respectively, which exceeded the adopted NEPC (2013) GIL and ANZG (2018) criteria of 8 µg/L;
- Ammonia in both samples SW1 and SW2, reported at concentrations of 0.3 mg/L and 2.2 mg/L respectively, which exceeded the adopted DES (2022) criterion of 0.01 mg/L;
- Total nitrogen in both samples SW1 and SW2 reported at concentrations of 1.96 mg/L and 9.2 mg/L, respectively, which exceeded the adopted DES (2022) criterion of 0.45 mg/L; and
- Total phosphorus in both Sample SW1 and SW2 reported at concentrations of 0.06 mg/L and 0.7 mg/L, respectively, which exceeded the adopted DES (2022) criterion of 0.035 mg/L.

It should also be noted that relatively minor concentrations of TRH were detected in both dams for several carbon fraction groups, with the concentration for the sum of TRH (>C_{10}-C_{40}) being reported as 200 µg/L in SW1 and 700 µg/L in SW2. While there are no established guideline values for some of these analytes, the concentrations detected are not considered to present a significant risk to potential human receptors at the site as there is not expected to be any use of dam water at the site that would expose potential human receptors via the pathways of ingestion and dermal contact.

12. Conclusions

Based on the investigations described in this report, the following conclusions are made:

- The aerial photograph review indicated that the site has been used for agricultural purposes since at least 1944;
- A 'dip', Douglas presumes to be a cattle/livestock dip, was marked within the central-northern portion of the site on the 1927 Historical Map, contained within the Lotsearch report provided in Appendix E. The exact location of this dip is unknown, however it appears to be in a similar location on-site to the current spray race;
- A former cattle spray race is currently located on the site. The aerial photographs, contained within the Lotsearch report, indicate that the surrounding cattle pens were constructed sometime between 1965 and 1974. However, it is unknown when the spray race was used at the site;
- The intrusive soil investigation indicated that contamination has not been detected at the locations and depths tested at concentrations that are considered to present a risk of harm to potential human and ecological receptors when compared against the adopted SAC for commercial/industrial site use;
- However, it should be noted that as this was a preliminary site investigation only, the sampling density was significantly less than the recommended minimum sampling density for site characterisation (NSW EPA, 2022), and the potential exists for contaminated soil to be present across parts of the site that have not been investigated by soil sampling and laboratory analysis (e.g., in the area of the former spray race);
- Exceedances were detected above the adopted SAC for pH, EC, turbidity and metals in the groundwater samples collected from both groundwater monitoring wells; and
- Exceedances were detected above the adopted SAC for pH, turbidity, metals and nutrients in the surface water samples collected from the dams.

It should be noted that a cattle dip refers to the permanent concrete bath structures where cattle are dipped for saturation treatment by a tickicide to contact kill the QLD cattle tick. Construction of some of these early dips can go back to around 1910. The initial active tickicide ingredient started exclusively with the persistent contaminant arsenic and was used until around the mid-1950s when DDT, another persistent contaminant, became the replacement for arsenic as the main ingredient. Other chemicals also began appearing in the late 1950s, but these appeared to be more readily biodegradable. There is no exact date for the end of the use of DDT, but it is considered to have been phased out around the mid-1960s when quicker degrading chemicals were typically used.

As for the more "mobile" spray races, these were introduced at some point around the early 1970s and began to replace the more permanent concrete "dip bath" which are commonly associated with persistent arsenic and DDT contamination issues identified in the present day. There is no exact date for the introduction of sprays or for the end of the DDT era, but indications are that the use of DDT for cattle was phased out well before the introduction of the sprays. However, this cannot be decisively concluded as the use of DDT was not banned in Australia until 1987.

13. Recommendations

Based on the above conclusions the following recommendations have been made:

- A potential for contamination was identified in the vicinity of the spray race. This is discussed in Section 13.1 below. The remainder of the site is considered to present a lower risk of contamination. Some potential for contamination still exists due to the site's history of agricultural use. If a detailed site investigation (DSI) over the larger site area is required, sampling should be conducted at sufficient density to meet the recommended minimum density detailed in NSW EPA (2022); and
- If discharge of groundwater or dam water to a watercourse is proposed, then treatment would be required due to the reported exceedances of the SAC.

13.1 Recommendations relating to the spray race

Douglas notes that the previous versions of this PSI report (i.e. draft, revision 0 and revision 1) included the following recommendation:

- Intrusive soil sampling and analysis for the identified CoPC should be conducted in the location of the spray race, which is considered to be the area of the site with the highest risk of contamination.

Additional soil and groundwater sampling in the vicinity of the spray race was conducted by Douglas in January 2024, as detailed in Douglas (2024) *Report on Additional Contamination Investigation, Bromelton Energy and Resource Centre, Lot 1 Beaudesert Boonah Road, Bromelton QLD* (reference: 219361.02.R.001.Rev0 dated 8 March 2024). The objective of the investigation was to assess the contamination status of soil and groundwater surrounding the spray race. The scope of work included soil sampling and laboratory analysis for identified CoPC from 26 boreholes and three surface sampling locations located within the area of the spray race, installation of a new groundwater monitoring well in the vicinity of the spray race (MW101), and groundwater sampling from MW101 and two previously installed wells (MW7 and MW9).

The soil investigation of the spray race indicated that contamination was not detected at the locations and depths tested at concentrations that are considered to present a risk of harm to potential human and ecological receptors. The groundwater investigation indicated that concentrations of arsenic that exceeded the adopted SAC were present in two monitoring wells, MW101 and MW9, which was located approximately 30 m south and downgradient of the spray race. It was considered that the reported arsenic concentrations may be associated with historical site use relating to the cattle dip and/or spray race.

Based on the investigation it was concluded that the spray race area is suitable for the proposed development. It was recommended that if discharge of groundwater is proposed, then treatment would be required due to the reported exceedances of the SAC.

Schedule 3 of the EP Act 1994 provides a list of notifiable activities, which includes *"livestock dip or spray race operations – operating a livestock dip or spray race facility"*. Chapter 7 Part 1 Division 2 of the Act provides details of the duty to notify of environmental harm. A duty to notify applies if a notifiable activity under Schedule 3 of the Act is being carried or has been carried out on the land. The duty to notify lies with a person who is:

i. The owner or occupier of land, or

ii. An auditor performing an auditor's function under section 568(b) of the Act, or
iii. A rehabilitation auditor conducting an audit of a Progressive Rehabilitation and Closure Plan (PRCP) Schedule under Chapter 5, Part 12 of the Act.

Douglas is not aware of any auditors performing an auditor's function as described above and therefore recommends that the owner or occupier of the land provide formal notification to the administering authority (DETSI) that a notifiable activity appears to have been conducted on the land. The administering authority may record particulars of land in the EMR if the authority Is satisfied that a notifiable activity has been, or is being, carried out on the land.

14. References

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QLD Government. (1994). *Environmental Protection Act, Queensland*. Office of Queensland Parliamentary Council.

State of Queensland. (2017). *Bromelton State Development Area Development Scheme December 2017*. The Department of State Development.

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15. Limitations

Douglas Partners Pty Ltd (Douglas) has prepared this report for this project at Lot 1 Beaudesert-Boonah Road, Bromelton in line with Douglas' proposal 219361.00.P.001.Rev0 dated 23 November 2022 and acceptance received from Cleanaway Operations Pty Ltd dated 24 November 2022, and proposal 219361.03.P.001.Rev0 dated 2 December 2025 and email acceptance received from Anna Stewart of Arup on behalf of Cleanaway Operations Pty Ltd dated 3 December 2025. The work was carried out under Douglas' Engagement Terms. This report is provided for the exclusive use of Cleanaway Operations Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of Douglas, does so entirely at its own risk and without recourse to Douglas for any loss or damage. In preparing this report Douglas has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after Douglas' field testing has been completed.

Douglas' advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by Douglas in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The assessment of atypical safety hazards arising from this advice is restricted to the environmental components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. Douglas cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by Douglas. This is because this report has been written as advice and opinion rather than instructions for construction.

Appendix A

About this Report

About this Report

October 2024

Introduction

These notes have been provided to amplify Douglas' report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

Douglas' reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Engagement Terms for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, Douglas will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, Douglas cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, Douglas will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, Douglas requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. Douglas would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

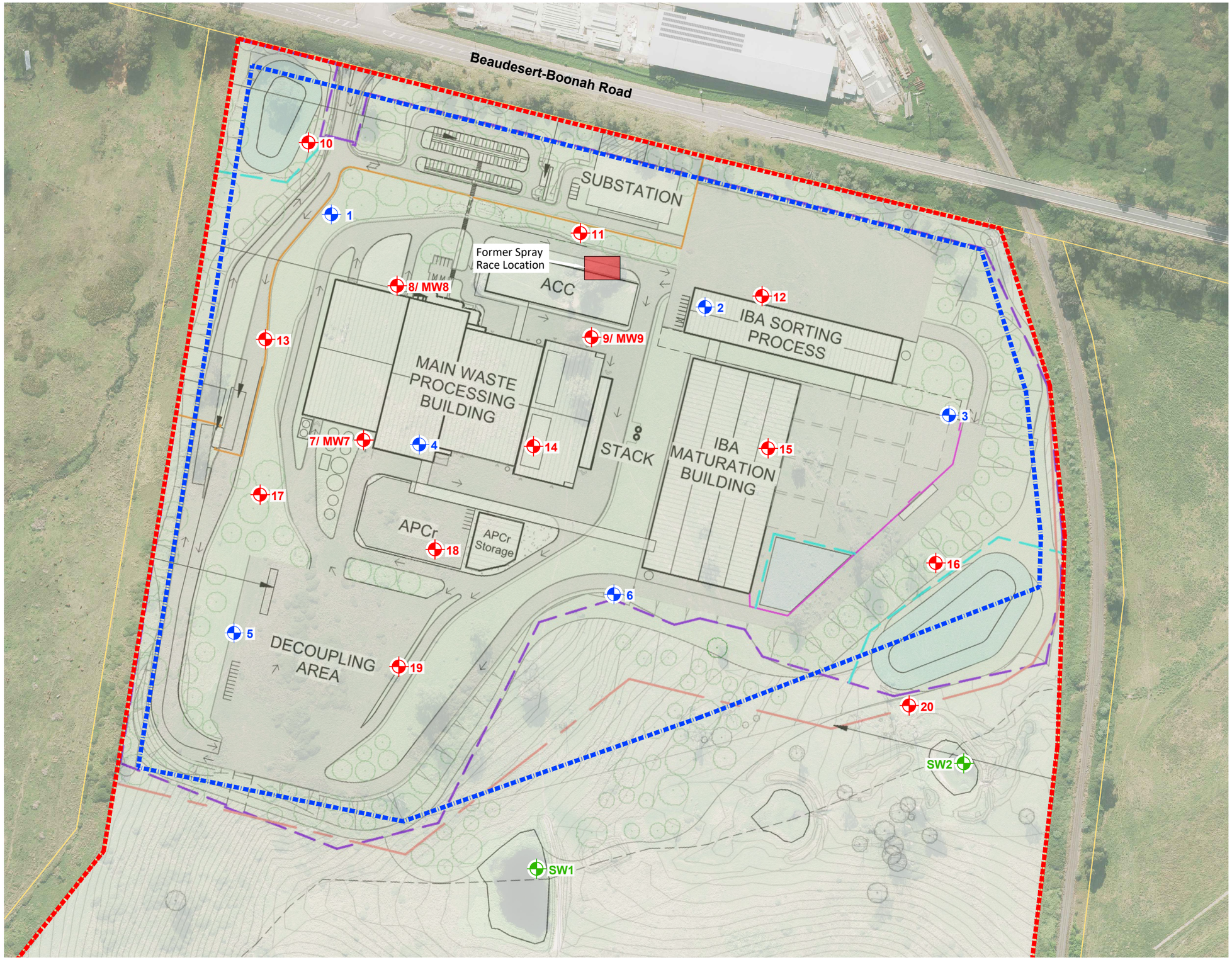
Site Inspection

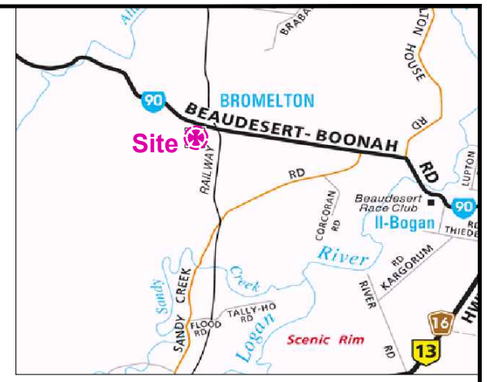
The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

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Appendix B

Drawings





Location Plan

LEGEND:

- Surface Water Sample Locations
- Environmental Borehole Locations (May 2023)
- Geotechnical Borehole Locations (November 2022)
- Approximate Lot Boundary
- Approximate SiteBoundary
- MW Monitoring Well Location

REV	DESCRIPTION/COMMENT	DATE	DRAWN BY
0	Final for Report	04/12/2025	JST

Douglas PARTNERS

OFFICE: BRISBANE
Unit 2 / 54 Turbo Drive Coorparoo QLD, 4151

CLIENT: **Cleanaway Operations Pty Ltd**

SCALE: 0 25 50 75 100 m
SCALE 1: 2,500 (A3)

NOTE:
- Base image from MetroMap (Dated 25.05.2025)
- Site locality image from OpenStreetMap. Not to scale.

COORDINATE REFERENCE SYSTEM: GDA2020 / MGA ZONE 56

PROJECT NAME: **Bromelton Energy and Resource Centre (BERC)**

PROJECT ADDRESS: **Lot 1 Beaudesert Boonah Road, Bromelton**

DRAWING TITLE: **Site and Test Location Plan**

PROJECT No: **219361.01**

DRAWING No: **1**

REVISION: **1**

P:\219361.01 - BROMELTON, Proposed Flat Pad, Lot 1\7.0 Drawings\7.2 Out\219361.01.D.001.Rev01.dwg

Appendix C

EMR/CLR Listing

Department of the Environment, Tourism, Science and Innovation (DETSI)
ABN 46 640 294 485
GPO Box 2454 Brisbane QLD 4001 AUSTRALIA
www.detsi.qld.gov.au

SEARCH RESPONSE
ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)

Transaction ID: 51094233 EMR Site Id: 09 December 2025
This response relates to a search request received for the site:
Lot: 1 Plan: RP45234

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

All search responses include particulars of land listed in the EMR/CLR when the search was generated.
The EMR/CLR does NOT include:-

1. land which is contaminated land (or a complete list of contamination) if DETSI has not been notified
2. land on which a notifiable activity is being or has been undertaken (or a complete list of activities) if DETSI has not been notified

If you have any queries in relation to this search please email emr.clr.registry@detsi.qld.gov.au

Administering Authority

Appendix D

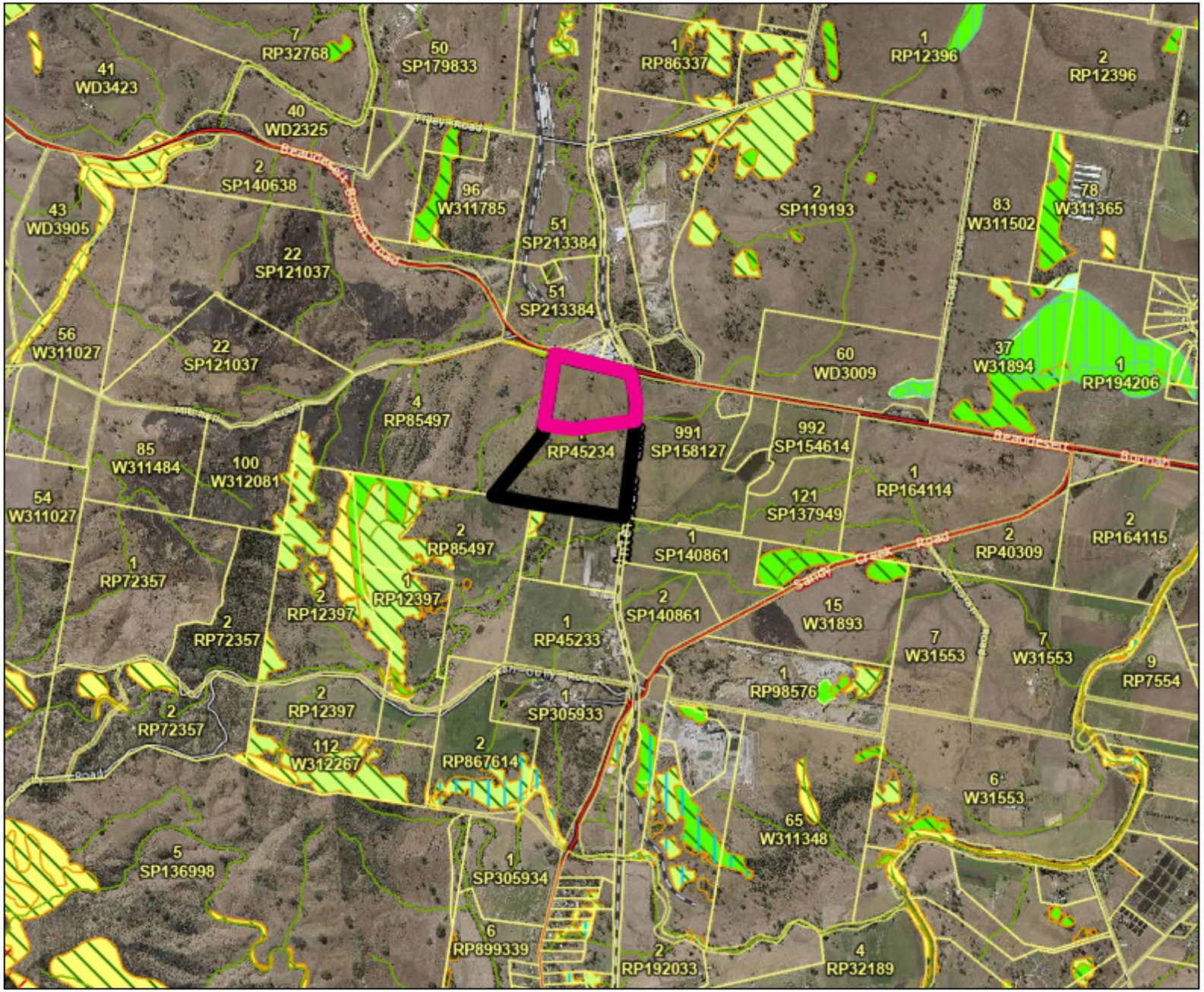
ESA Map

ESA Map

A product of Queensland Globe

27°57'13"S 152°53'9"E

27°57'13"S 152°57'59"E



28°0'44"S 152°53'9"E

28°0'44"S 152°57'59"E

Legend located on next page

N

0 1 km

Scale: 1:43061

Printed at: A4

Print date: 25/5/2023

Not suitable for accurate measurement.

Projection: Web Mercator EPSG 102100 (3857)

For more information, visit https://qldglobe.information.qld.gov.au/help-info/Contact-us.html

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Queensland Government

Department of Resources

ESA Map

Legend

MSES protected area [estates]

MSES protected area [nature refuges]

MSES marine park [highly protected]

MSES declared fish habitat area [A and B areas]

MSES legally secured offset area [offset register]

MSES legally secured offset area [vegetation offsets]

MSES regulated vegetation [defined watercourse]

MSES strategic environmental area [designated precinct]

MSES regulated vegetation [category B - endangered or of concern]

MSES regulated vegetation [category C- endangered or of concern]

MSES regulated vegetation [category R- GBR riverine]

MSES regulated vegetation [essential habitat]

MSES regulated vegetation [100m from wetland]

MSES wildlife habitat [endangered or vulnerable]

MSES protected area [special wildlife reserves]

MSES wildlife habitat [sea turtle nesting areas]

Land parcel

Parcel

Land parcel - gt 1 ha

Parcel

Land parcel - gt 10 ha

Parcel

Land parcel - gt 1000 ha

Parcel

Land parcel label

Land parcel label - gt 1 ha

Land parcel label - gt 10 ha

Attribution

Maxar

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© State of Queensland (Department of Resources) 2021

© State of Queensland (Department of Resources) 2023

MSES declared high ecological value waters [watercourse]

MSES declared high ecological value waters [wetland]

MSES high ecological significance wetlands

MSES wildlife habitat [special least concern animal]

MSES wildlife habitat [SEQ koala habitat - core]

MSES wildlife habitat [SEQ koala habitat - locally refined]

Land parcel label - gt 1000 ha

ESA Map

Legend

Cities and Towns

Road Crossing

Bridge

Tunnel

Road

Highway

Main

Local

Private

Railway

Appendix E

Lotsearch Report

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Address: Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Date: 22 May 2023 14:59:28

Reference: LS043785 EP

Disclaimer:
The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features.
You should obtain independent advice before you make any decision based on the information within the report.
The detailed terms applicable to use of this report are set out at the end of this report.

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 in Buffer
Cadastre Boundaries	State of Queensland (Department of Natural Resources, Mines and Energy) and Mines) 2017	13/02/2023	13/02/2023	Quarterly	-	-	-	-
Environmental Authorities Register Current Prescribed Environmentally Relevant Activities	Queensland Department of Environment and Science	20/04/2023	20/04/2023	Monthly	1000	0	4	12
Environmental Authorities Register Current Resource Activities	Queensland Department of Environment and Science	20/04/2023	20/04/2023	Monthly	1000	0	0	0
Environmental Authorities Register Former Prescribed Environmentally Relevant Activities	Queensland Department of Environment and Science	20/04/2023	20/04/2023	Monthly	1000	0	0	0
Environmental Authorities Register Former Resource Activities	Queensland Department of Environment and Science	20/04/2023	20/04/2023	Monthly	1000	3	3	4
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	09/05/2023	09/05/2023	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	09/05/2023	09/05/2023	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	09/05/2023	09/05/2023	Monthly	2000	0	0	0
Queensland Fire and Emergency Services PFAS Investigation Sites	Queensland Fire and Emergency Services	05/05/2023	27/06/2022	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/09/2022	02/09/2022	Quarterly	2000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000	0	0	1
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000	0	0	0
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
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	20/03/2023	19/08/2019	As required	1000	1	1	2
Groundwater Boreholes	State of Queensland (Department of Natural Resources, Mines and Energy)	15/05/2023	15/05/2023	Quarterly	2000	0	0	28
Detailed Surface Geological Units	State of Queensland (Department of Natural Resources, Mines and Energy)	13/11/2017	28/03/2017	As required	1000	2	-	4
Detailed Surface Geological Structures	State of Queensland (Department of Natural Resources, Mines and Energy)	13/11/2017	28/03/2017	As required	1000	0	-	-
Atlas of Australian Soils	ABARES	19/05/2017	17/02/2011	As required	1000	2	2	3

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features in Buffer
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	2	2	2
Commonwealth Heritage List	Australian Government Department of Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000	0	0	0
National Heritage List	Australian Government Department of Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000	0	0	0
Heritage Register Boundaries	State of Queensland (Environment and Heritage Protection)	18/10/2022	18/10/2022	Quarterly	1000	0	0	0
Statewide Bushfire Prone Areas	State of Queensland (Department of Natural Resources, Mines and Energy)	05/09/2022	15/07/2015	Annually	1000	3	4	4
Queensland Floodplain Assessment Overlay	State of Queensland (Department of Natural Resources, Mines and Energy)	19/04/2022	06/06/2021	Annually	1000	1	1	1
Regulated Vegetation Management Map	Queensland Government – Department of Resources	27/03/2023	27/03/2023	Monthly	1000	1	3	10
Wetland Protection Area	State of Queensland (Environment and Heritage Protection)	09/04/2018	14/09/2017	Unknown	1000	0	0	0
Groundwater Dependent Ecosystems Atlas	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000	0	1	6
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000	0	1	2

Aerial Imagery 2022

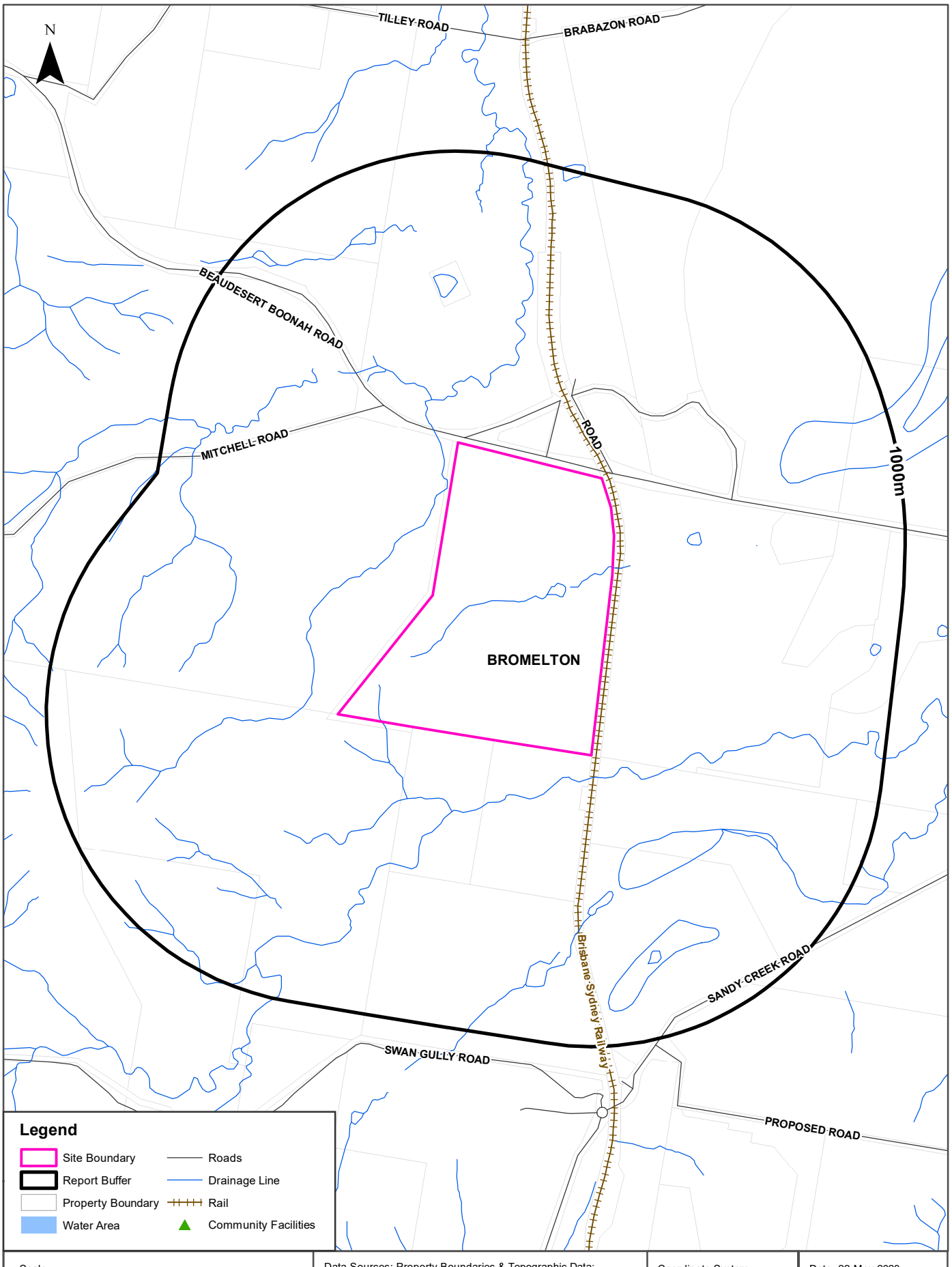
Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Scale: 0 80 160 240 320 Meters	Data Sources: Aerial Imagery © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 22 May 2023

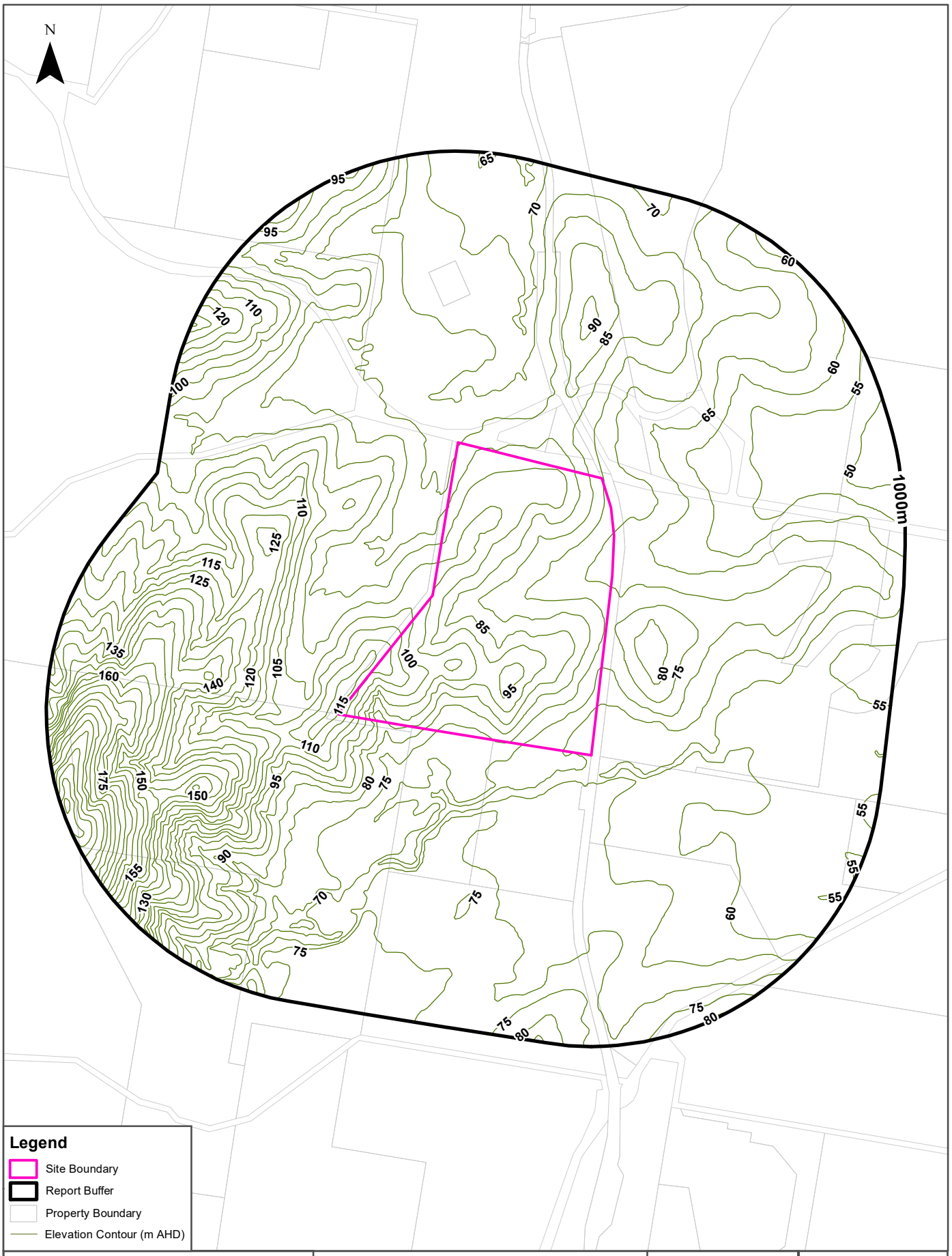
Topographic Features

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



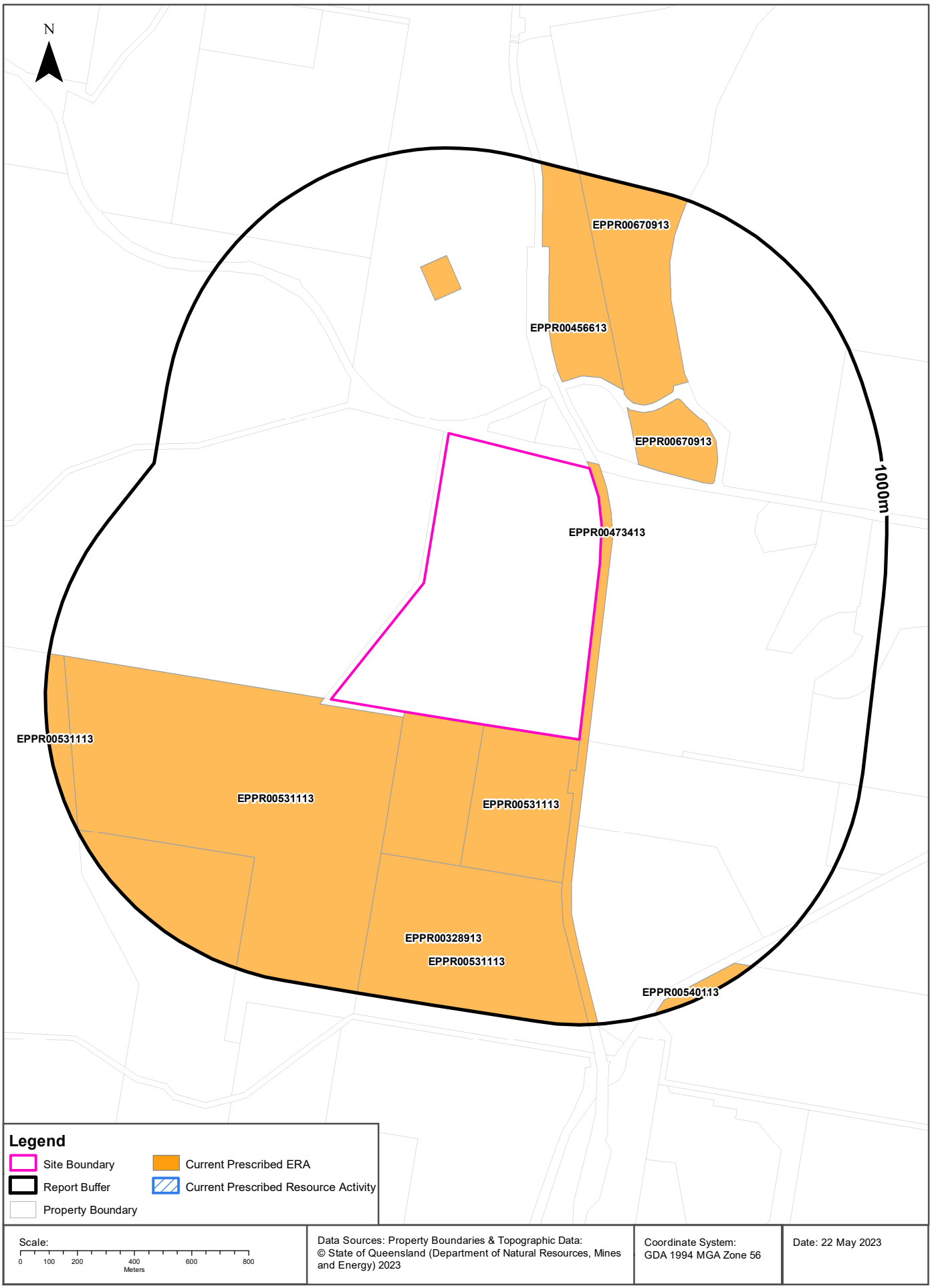
Elevation Contours (5m)

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Current Prescribed ERA and Resource Activities

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Environmental Authorities Register

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Current Prescribed ERA Activities

Current prescribed environmentally relevant activities within the dataset buffer.
Note: Due to the fact that not all records on the EAR have specific or current location details, some premises associated with a permit reference number may not have been mapped, and therefore will not appear in this report. For further details refer to: https://environment.ehp.qld.gov.au/env-authorities

Permit No	Permit Status	Effective Date	Holder	Premise	Activity	Loc Conf	Dist'	Dir'n
EPPR00473413	Granted	2018-05-08	Bromelton Quarry Pty Ltd	281/SP130095 Lot 281/SP130095 SWAN GULLY RD, BROMELTON, SCENIC RIM REGIONAL, 4285	ERA 16 - Extraction and Screening, 2(c) - Extracting, other than by dredging, in a year, the following quantity of material - more than 1,000,000t ERA 16 - Extraction and Screening, 3(c) - Screening, in a year, the following quantity of material - more than 1,000,000t	Premise match	0m	South
EPPR00531113	Granted	2015-07-06	AJ Bush & Sons (Manufactures) Pty Ltd	1/RP43189 Lot 1/RP43189, BROMELTON, SCENIC RIM REGIONAL	ERA 15 - Fuel burning, Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour ERA 25 - Meat Processing, 3(b) - Rendering, without any other processing, in a year, the following quantity of meat or meat products - more than 500t ERA 63 - Sewage Treatment, 1(a-i) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP - if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	Premise match	0m	South
EPPR00531113	Granted	2015-07-06	AJ Bush & Sons (Manufactures) Pty Ltd	2/RP68584 Lot 2/RP68584, BROMELTON, SCENIC RIM REGIONAL	ERA 15 - Fuel burning, Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour ERA 25 - Meat Processing, 3(b) - Rendering, without any other processing, in a year, the following quantity of meat or meat products - more than 500t ERA 63 - Sewage Treatment, 1(a-i) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP - if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	Premise match	0m	South
EPPR00531113	Granted	2015-07-06	AJ Bush & Sons (Manufactures) Pty Ltd	2/RP85497 Lot 2/RP85497 SWAN GULLY RD, BROMELTON, SCENIC RIM REGIONAL, 4285	ERA 15 - Fuel burning, Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour ERA 25 - Meat Processing, 3(b) - Rendering, without any other processing, in a year, the following quantity of meat or meat products - more than 500t ERA 63 - Sewage Treatment, 1(a-i) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP - if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	Premise match	19m	South West
EPPR00670913	Granted	2015-01-28	Scenic Rim Regional Council	3/SP119193	ERA 60 - Waste disposal, 1(c) - Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) - more than 100,000t but not more than 200,000t ERA 62 - Resource recovery and transfer facility operation, 1(c) - Operating a facility for receiving and sorting, dismantling, baling or temporarily storing category 2 regulated waste	Premise match	167m	North

Permit No	Permit Status	Effective Date	Holder	Premise	Activity	Loc Conf	Dist'	Dir'n
EPPR00456613	Granted	2018-12-20	NATIONAL HIDE PROCESSORS PTY LTD	100/SP223082 48 RECYCLING ST, BROMELTON, SCENIC RIM REGIONAL, 4285	ERA 39 - Tanning, Operating a tannery or facility for tanning, curing or finishing 100t or more of leather products in a year ERA 55 - Other waste reprocessing or treatment, 2(a) - Operating a facility for receiving and either reprocessing or treating, in a year, the following quantity of category 2 regulated waste - 5,000t or less	Premise match	272m	North
EPPR00456613	Granted	2018-12-20	NATIONAL HIDE PROCESSORS PTY LTD	1/RP80463 Lot 1/RP80463, BROMELTON, SCENIC RIM REGIONAL	ERA 39 - Tanning, Operating a tannery or facility for tanning, curing or finishing 100t or more of leather products in a year ERA 55 - Other waste reprocessing or treatment, 2(a) - Operating a facility for receiving and either reprocessing or treating, in a year, the following quantity of category 2 regulated waste - 5,000t or less	Premise match	470m	North
EPPR00328913	Granted	2009-10-21	YURIKA PTY LTD	1/RP45233 28 SWAN GULLY RD, BROMELTON, SCENIC RIM REGIONAL, 4285	ERA 14 - Electricity generation, 2(a) - Generating electricity by using a fuel, other than gas, at a rated capacity of 10MW electrical to 150MW electrical	Premise match	504m	South
EPPR00531113	Granted	2015-07-06	AJ Bush & Sons (Manufactures) Pty Ltd	1/RP45233 28 SWAN GULLY RD, BROMELTON, SCENIC RIM REGIONAL, 4285	ERA 15 - Fuel burning, Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour ERA 25 - Meat Processing, 3(b) - Rendering, without any other processing, in a year, the following quantity of meat or meat products - more than 500t ERA 63 - Sewage Treatment, 1(a-i) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP - if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	Premise match	504m	South
EPPR00531113	Granted	2015-07-06	AJ Bush & Sons (Manufactures) Pty Ltd	1/RP12397 Lot 1/RP12397 SWAN GULLY RD, BROMELTON, SCENIC RIM REGIONAL, 4285	ERA 15 - Fuel burning, Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour ERA 25 - Meat Processing, 3(b) - Rendering, without any other processing, in a year, the following quantity of meat or meat products - more than 500t ERA 63 - Sewage Treatment, 1(a-i) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP - if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	Premise match	617m	South West
EPPR00531113	Granted	2015-07-06	AJ Bush & Sons (Manufactures) Pty Ltd	2/RP12397 194 SWAN GULLY RD, BROMELTON, SCENIC RIM REGIONAL, 4285	ERA 15 - Fuel burning, Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour ERA 25 - Meat Processing, 3(b) - Rendering, without any other processing, in a year, the following quantity of meat or meat products - more than 500t ERA 63 - Sewage Treatment, 1(a-i) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP - if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	Premise match	920m	South West
EPPR00540113	Granted	2020-08-12	NEILSENS QUALITY GRAVELS PTY. LTD.	1/RP98576 291 SANDY CREEK RD, BROMELTON, SCENIC RIM REGIONAL, 4285	ERA 16 - Extraction and Screening, 2(b) - Extracting, other than by dredging, in a year, the following quantity of material - more than 100,000t but not more than 1,000,000t ERA 16 - Extraction and Screening, 3(b) - Screening, in a year, the following quantity of material - more than 100,000t but not more than 1,000,000t	Premise match	946m	South East

Current Prescribed ERA Activities Data Source: QLD Department of Environment and Science
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Current Prescribed Resource Activities

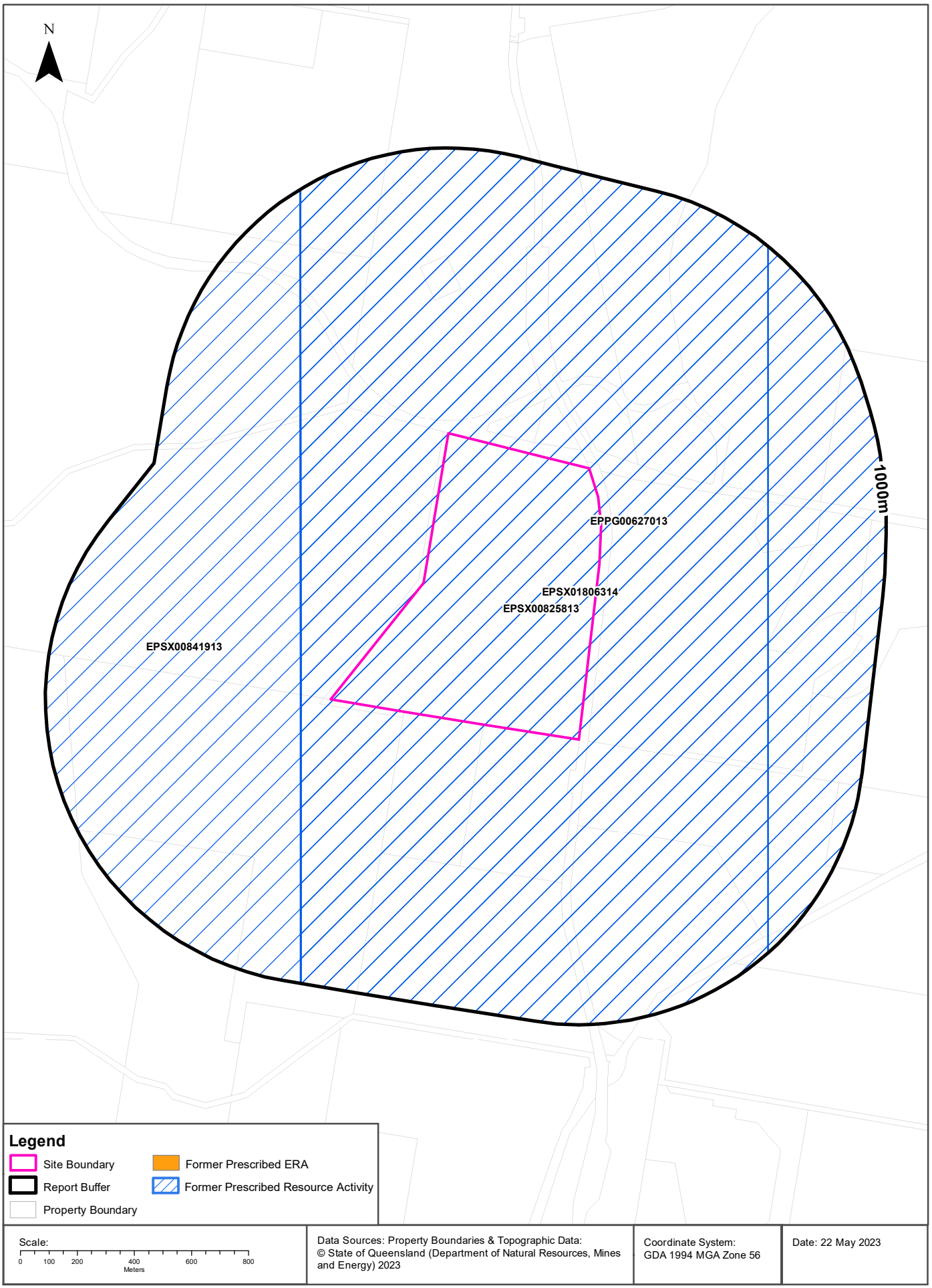
Current prescribed resource activities within the dataset buffer.
Note: Due to the fact that not all records on the EAR have specific or current location details, some premises associated with a permit reference number may not have been mapped, and therefore will not appear in this report. For further details refer to: https://environment.ehp.qld.gov.au/env-authorities

Permit No	Permit Status	Effective Date	Holder	Premise	Activity	Loc Conf	Dist'	Dir'n
N/A	No records in buffer							

Current Prescribed Resource Activities Data Source: QLD Department of Environment and Science
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Former Prescribed ERA and Resource Activities

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Environmental Authorities Register

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Former Prescribed ERA Activities

Former prescribed environmentally relevant activities within the dataset buffer.
Note: Due to the fact that not all records on the EAR have specific or current location details, some premises associated with a permit reference number may not have been mapped, and therefore will not appear in this report. For further details refer to: https://environment.ehp.qld.gov.au/env-authorities

Permit No	Permit Status	Effective Date	Holder	Premise	Activity	Loc Conf	Dist'	Dir'n
N/A	No records in buffer							

Former Prescribed ERA Activities Data Source: QLD Department of Environment and Science
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Former Prescribed Resource Activities

Former prescribed resource activities within the dataset buffer.
Note: Due to the fact that not all records on the EAR have specific or current location details, some premises associated with a permit reference number may not have been mapped, and therefore will not appear in this report. For further details refer to: https://environment.ehp.qld.gov.au/env-authorities

Permit No	Permit Status	Effective Date	Holder	Premise	Activity	Loc Conf	Dist'	Dir'n
EPPG00627013	No Longer on Supplied List	2014-01-03	BNG Pty Ltd	ATP644	Petroleum	General area	0m	Onsite
EPSX00825813	Surrendered	2012-09-10	Orbit Capital Pty Ltd	EPC1299	Exploration - Coal	General area	0m	Onsite
EPSX01806314	Surrendered	2014-01-03	B.N.G. PTY. LTD.; ARROW CSG (AUSTRALIA) PTY LTD	ATP644	Non-Scheduled, Petroleum Activity - Authority to Prospect (ATP)	General area	0m	Onsite
EPSX00841913	Surrendered	2015-07-09	Linc Energy Ltd	EPC910	Exploration - Coal	General area	105m	South West

Former Prescribed Resource Activities Data Source: QLD Department of Environment and Science
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PFAS Investigation Sites

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Defence PFAS Investigation and Management Program Investigation Sites

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

Defence PFAS Investigation and Management Program Management Sites

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 Investigation & 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

Queensland Fire and Emergency Services PFAS Investigation Sites

Sites being investigated by Queensland Fire and Emergency Services for PFAS contamination within the dataset buffer:

Map ID	Fire Station Name	PFOA (µg/L)	PFOS (∑(PFOS + PFHxS) (µg/L)	Location Confidence	Dist	Dir
N/A	No records in buffer					

Queensland Fire and Emgency Services PFAS investigation Sites Data Source: Queensland Fire and Emgency Services, Queensland Government

Defence Sites

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Defence 3 Year Regional Contamination Investigation Program

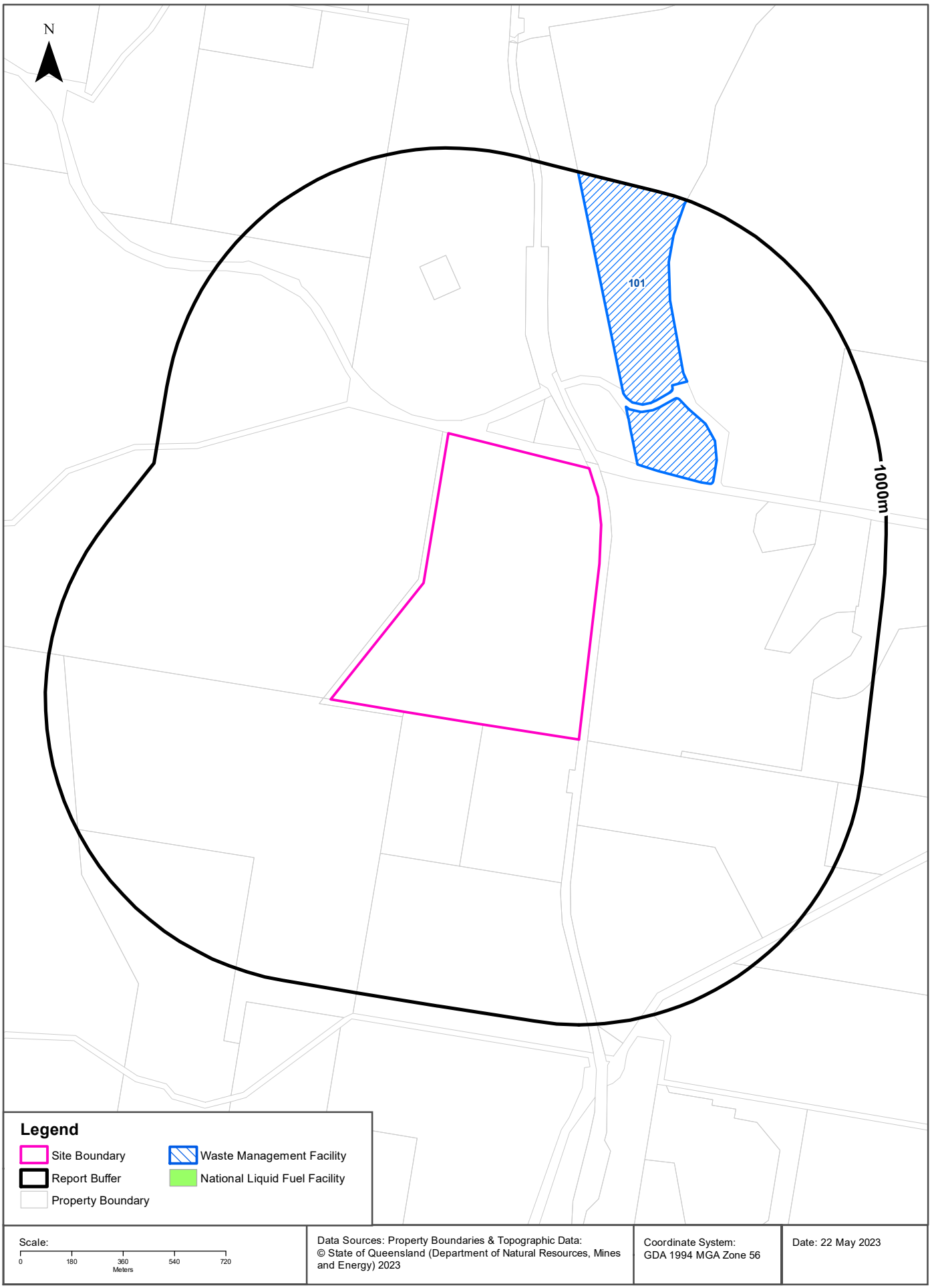
Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

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

Waste Management and Liquid Fuel Facilities

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Waste Management and Liquid Fuel Facilities

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

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'	Direction
101	Scenic Rim Regional Council	Beaudesert Waste Transfer Station	Boonah Road	Beaudesert	Landfill	Operational			Original information on waste management site collected by WMAA in 2008 via survey	Premise Match	167m	North

Waste Management Facilities Data Source: Australian Government Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

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)	Dir
N/A	No records in buffer										

National Liquid Fuel Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Historical Business Directories

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Business Directory Records 1941 - 1968-70 Premise or Road Intersection Matches

Universal Business Directory records, from years 1968-70, 1961, 1950 & 1941, 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 Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Business Directory Records 1941 - 1968-70 Road or Area Matches

Universal Business Directory records, from years 1968-70, 1961, 1950 & 1941, 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					

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Dry Cleaners, Motor Garages & Service Stations 1941 - 1968-70 Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, from years 1968-70, 1961, 1950 & 1941, 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 Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Dry Cleaners, Motor Garages & Service Stations 1941 - 1968-70 Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, from years 1968-70, 1961, 1950 & 1941, 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					

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

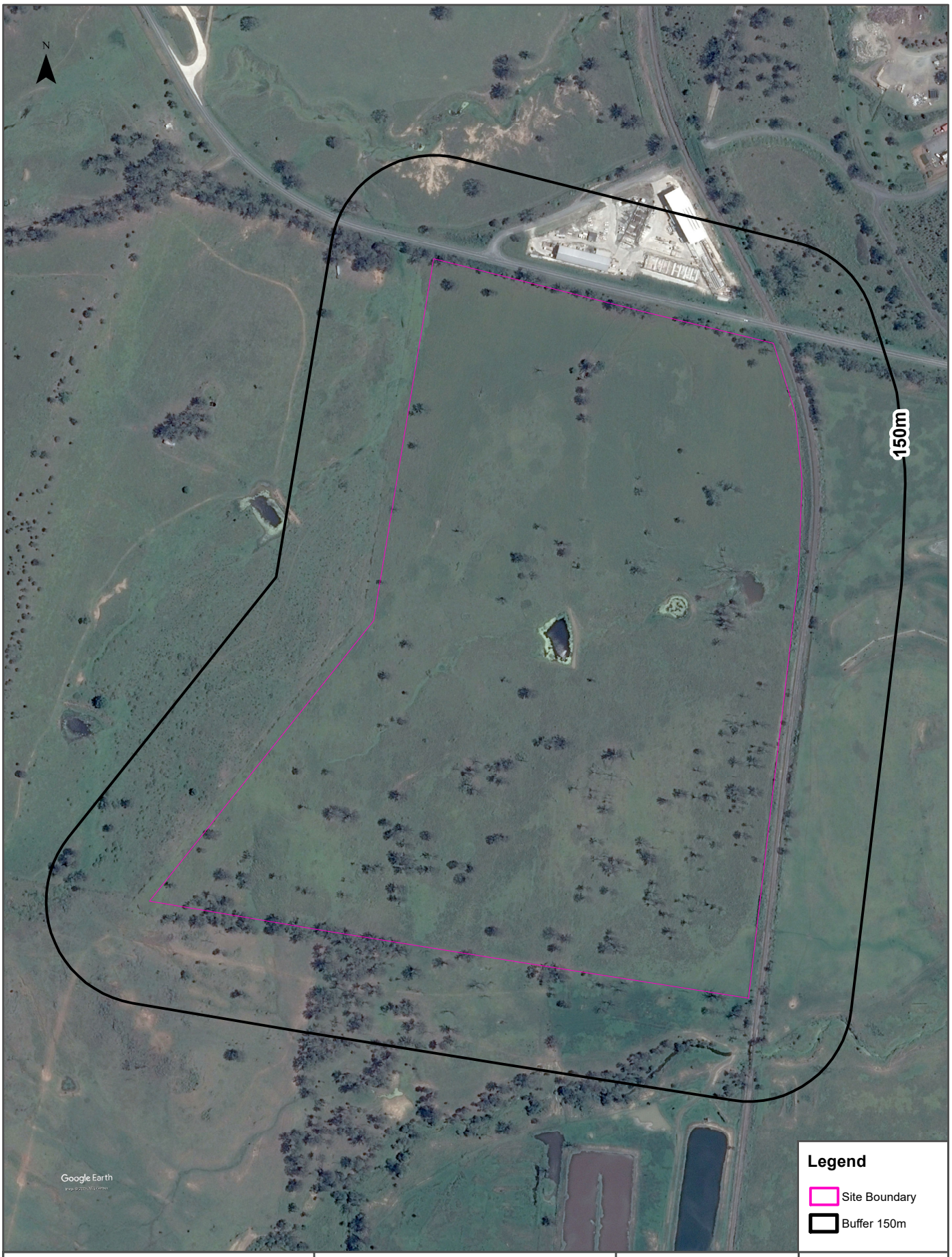
Aerial Imagery 2020

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Aerial Imagery 2016

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Scale:
0 80 160 240 320
Meters

Data Source Aerial Imagery: © 2023 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 19 May, 2023

Aerial Imagery 2012

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Scale:
0 80 160 240 320
Meters

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Coordinate System:
GDA 1994 MGA Zone 56

Date: 19 May, 2023

Aerial Imagery 2004

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Scale:
0 80 160 240 320
Meters

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Coordinate System:
GDA 1994 MGA Zone 56

Date: 19 May, 2023

Aerial Imagery 1993

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Aerial Imagery 1982

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Scale:	Data Source Aerial Imagery: © State of Queensland (Department of Natural Resources, Mines and Energy) [2023]	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 May, 2023

0 80 160 240 320 Meters

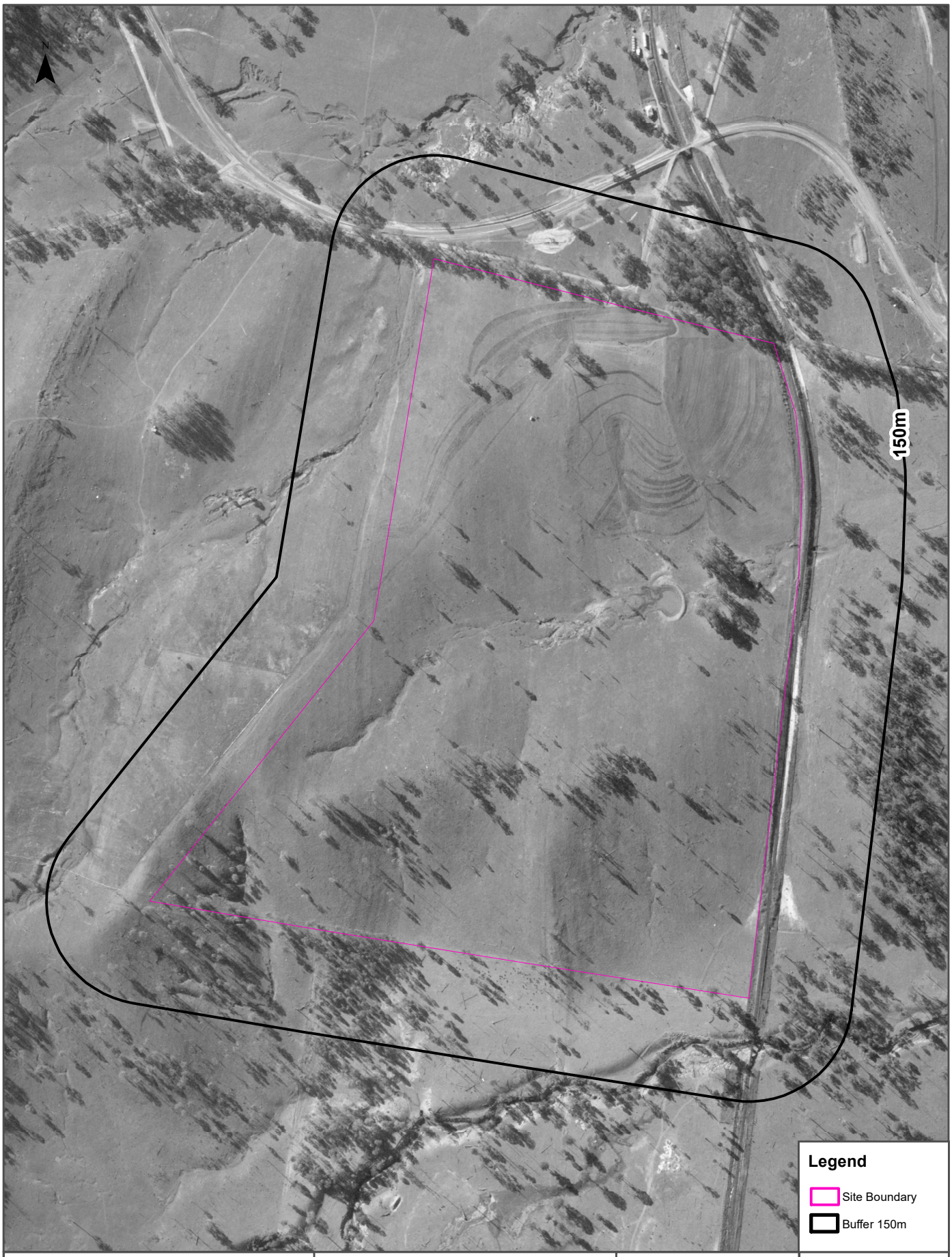
Aerial Imagery 1974

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Aerial Imagery 1965

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



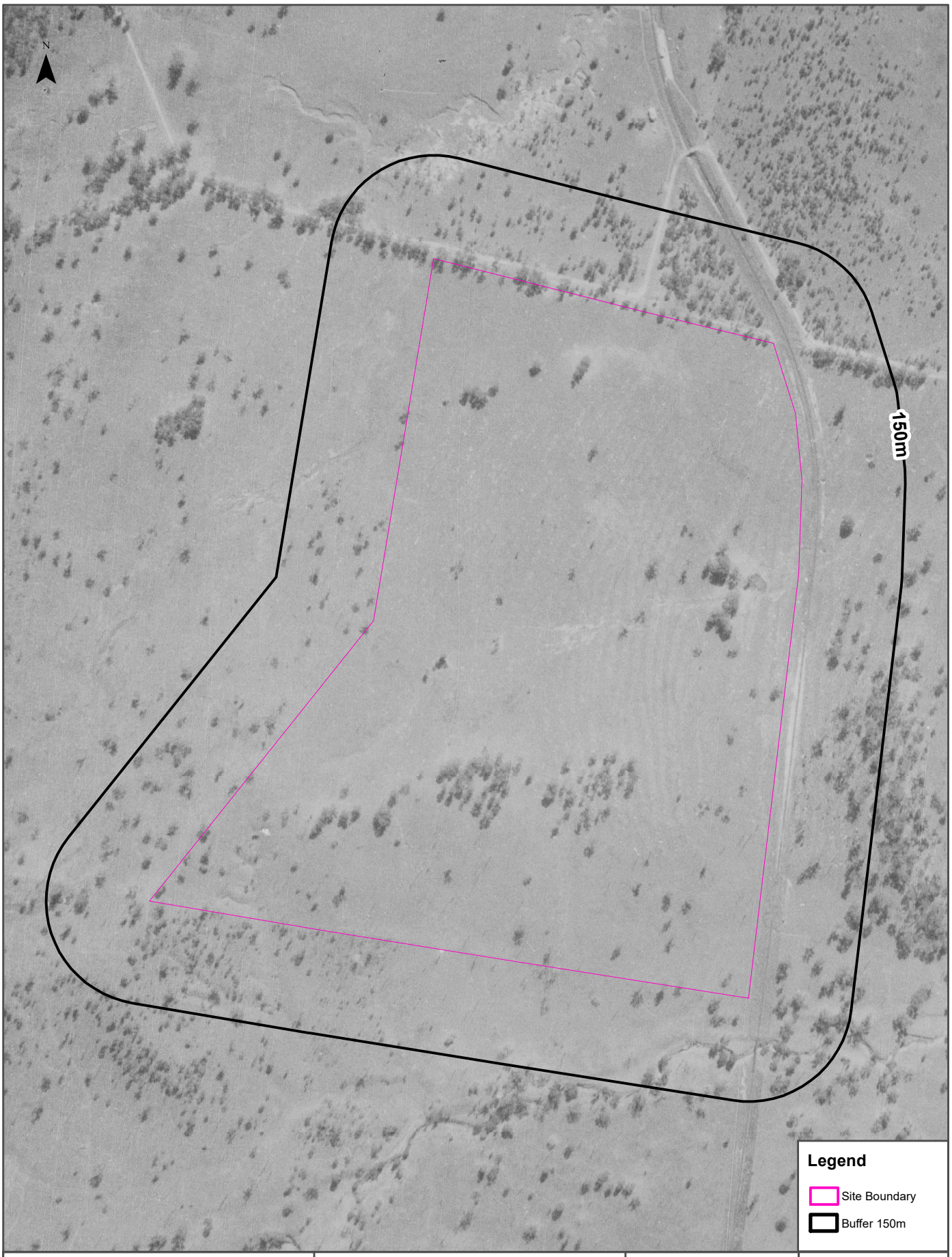
Aerial Imagery 1958

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



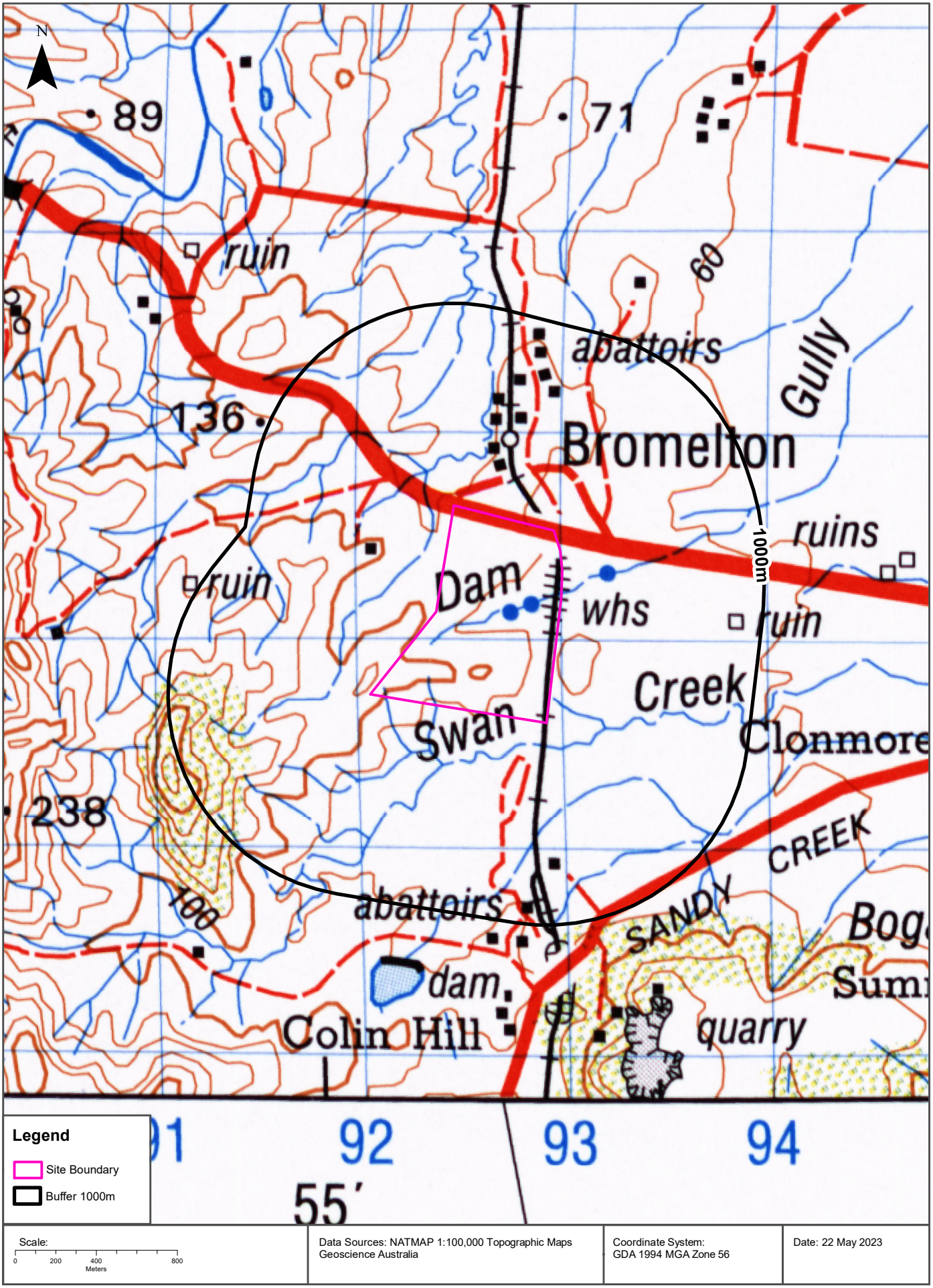
Aerial Imagery 1944

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



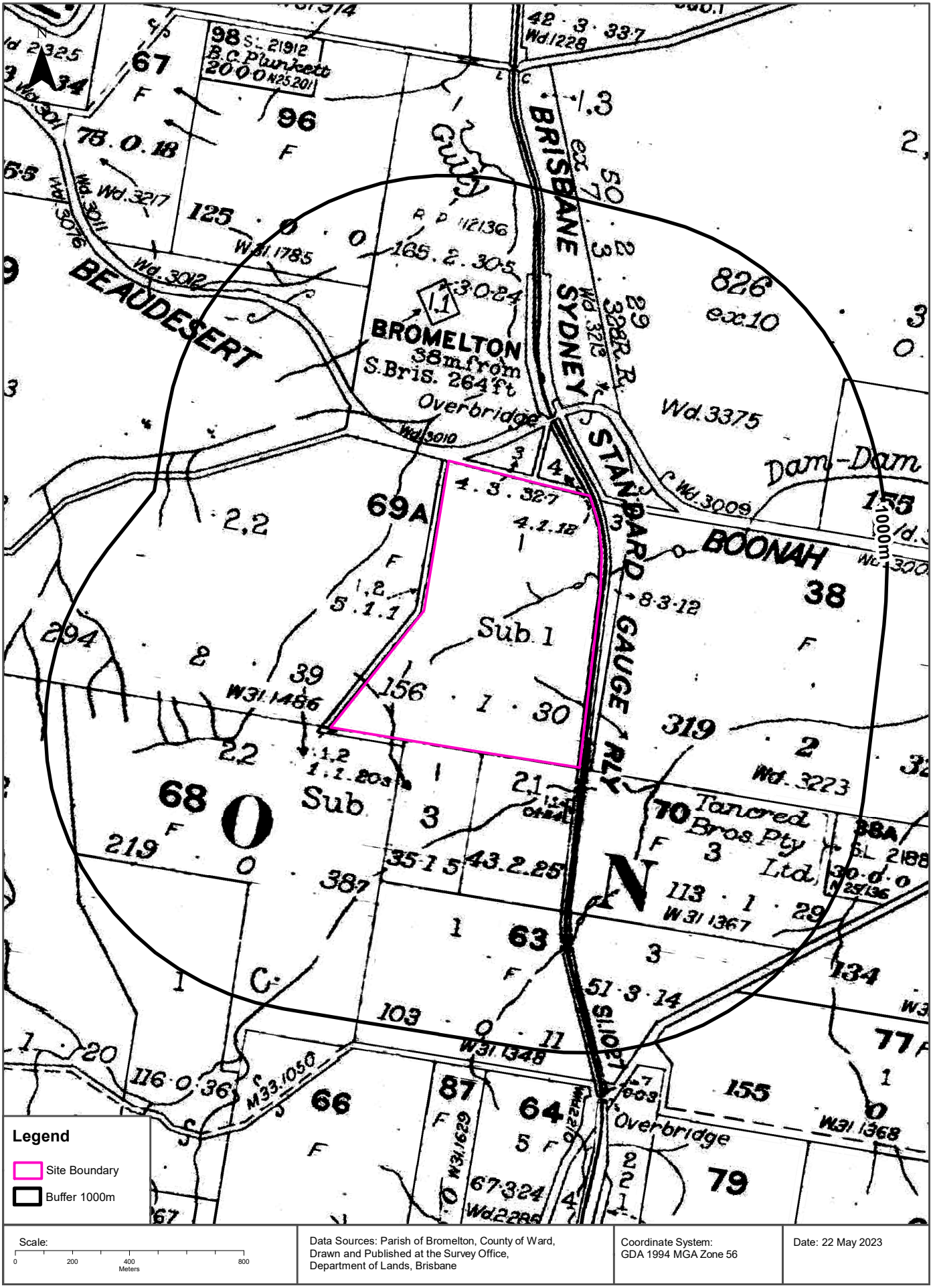
Historical Map 1998

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



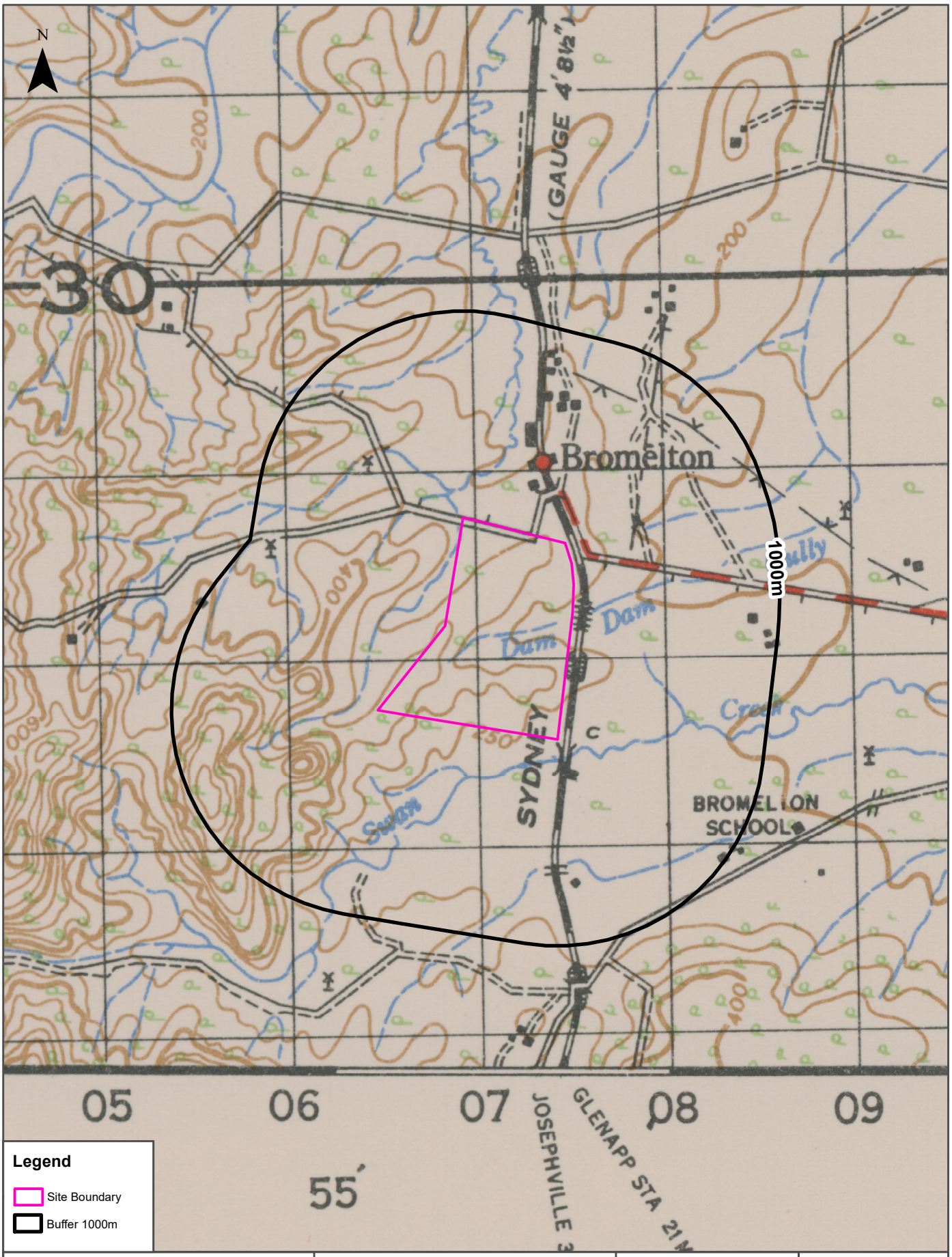
Historical Map 1972

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



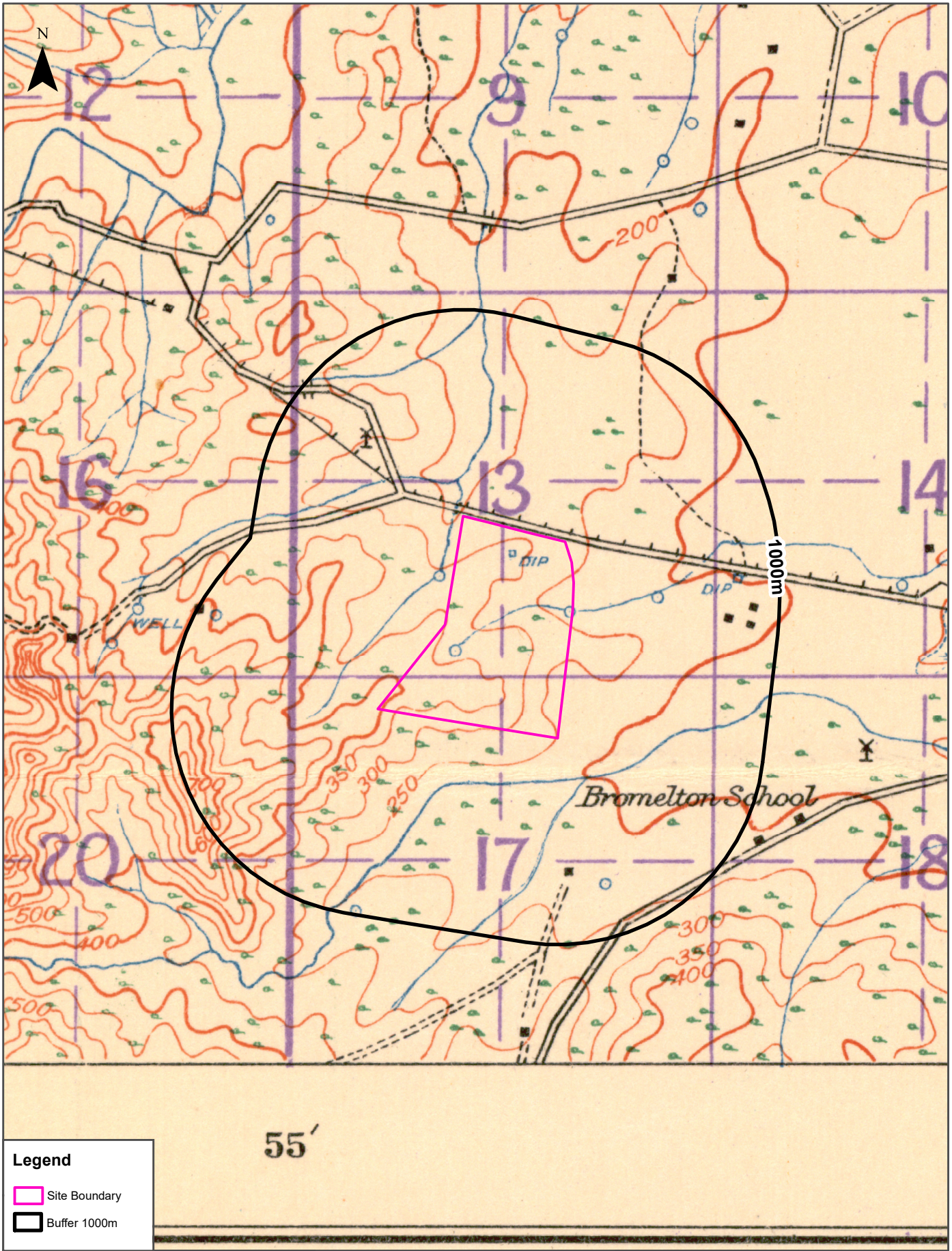
Historical Map c.1954

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



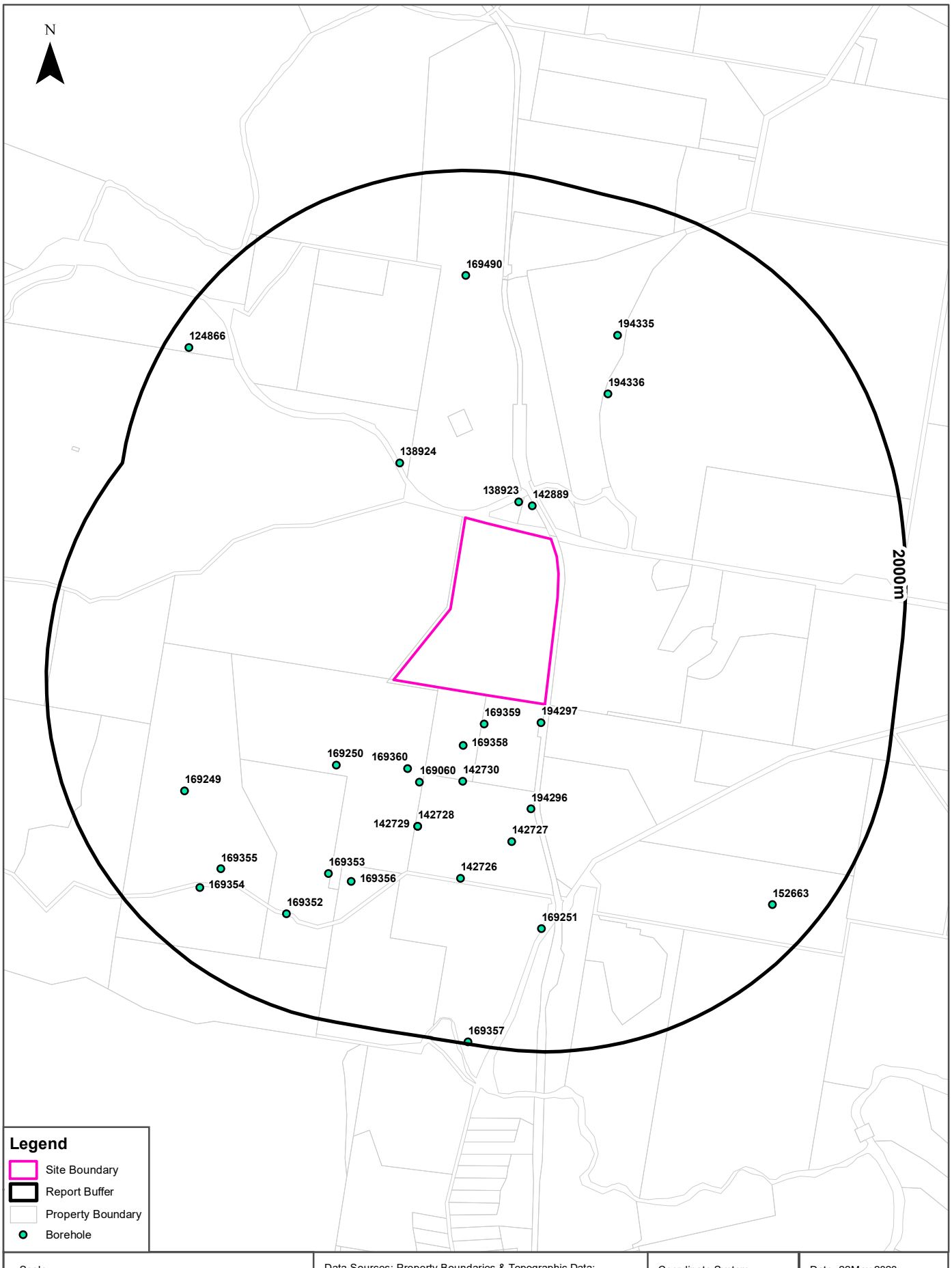
Historical Map c.1927

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Groundwater Boreholes

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Hydrogeology & Groundwater

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive highly productive aquifers	0m	On-site
Porous, extensive aquifers of low to moderate productivity	751m	West

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

Boreholes within the dataset buffer:

Bore No	Facility Type	Facility Role	Status	Drillers Log	Aquifer	Drill Date	Dist	Direct'
194297	Sub-artesian Facility	Sub-Artesian Monitoring	Existing			2021-04-13	108m	South East
142889	Sub-artesian Facility	Water Supply	Existing	0.00m-6.00m SANDY LOAM 6.00m-20.00m HARD BROWN CLAY & SANDSTONE MIX 20.00m-25.00m BROWN SANDSTONE 25.00m-30.00m IRONSTONE 30.00m-45.00m GREY SANDSTONE WITH GREY CLAY BANDS 45.00m-55.00m GREY SANDSTONE 55.00m-64.00m GREY SANDSTONE WITH GREY CLAY BANDS	Aquifer Top-Bottom: 26.00m-30.00m. Fractured Condition. Formation is contributing water to the bore. Formation does not flow. Yield: 0.13 Aquifer Top-Bottom: 47.00m-55.00m. Fractured Condition. Formation is contributing water to the bore. Formation does not flow. Quality: 2300 PPM Yield: 1.13 SWL: -8.00	2011-11-15	157m	North
138923	Sub-artesian Facility		Abandoned and Destroyed	0.00m-0.50m FILL 0.50m-9.00m LIGHT BROWN CLAY 9.00m-19.00m BROWN CLAY 19.00m-30.00m BROWN & PURPLE CLAY 30.00m-32.00m COAL, CLAY & OILY SHALE 32.00m-33.00m DIRTY COAL 33.00m-40.00m GREY CLAY & OILY SHALE 40.00m-40.50m MUDSTONE & OILY SHALE 40.50m-55.00m GREY CLAY & OILY SHALE		2009-01-06	162m	North
169359	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-3.00m BROWN GREY SAND 3.00m-5.00m LIGHT BROWN SAND 5.00m-9.00m DARK BROWN MUDSTONE 9.00m-14.00m BROWN SANDSTONE		2015-10-21	167m	South

Bore No	Facility Type	Facility Role	Status	Drillers Log	Aquifer	Drill Date	Dist	Direct'
169358	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-1.00m GREY SILT 1.00m-5.00m BROWN GREY SANDSTONE 5.00m-12.00m DARK BROWN MUDSTONE 12.00m-13.00m GREY SANDSTONE 13.00m-14.00m GREY MUDSTONE		2015-10-20	308m	South
138924	Sub-artesian Facility	Water Supply	Existing	0.00m-1.50m HEAVY DARK BROWN CLAYEY SOIL 1.50m-2.50m LIGHT BROWN CLAY 2.50m-4.50m DARK BROWN CLAY 4.50m-9.00m LIGHT GREY SANDY CLAY 9.00m-12.00m GULLY WASH 12.00m-13.00m SANDY GREY CLAY 13.00m-23.00m CLAYEY GULLY WASH 23.00m-29.00m GREY SILTSTONE & OILY SHALE 29.00m-31.00m GREY SANDSTONE	Aquifer Top-Bottom: 12.00m-23.00m. Unconsolidated Condition. Formation is contributing water to the bore. Formation does not flow. Quality: 2100 US/CM Yield: 0.40 SWL: -6.00	2009-01-07	488m	North West
169360	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-2.00m BROWN SILTY CLAY 2.00m-5.50m BROWN GREY MUDSTONE 5.50m-8.00m BROWN SANDSTONE 8.00m-13.50m GREY SANDSTONE 13.50m-14.00m BROWN SANDSTONE		2015-10-21	491m	South West
142730	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-1.80m FINE TO MEDIUM SAND 1.80m-3.20m FINE TO MEDIUM SAND WITH FINE GRAVEL 3.20m-4.60m FINE TO COARSE SAND 4.60m-12.00m FINE TO MEDIUM SAND		2011-02-09	512m	South
169060	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-2.00m BLACK CLAY 2.00m-5.00m BROWN SANDY LOAM 5.00m-12.00m WHITE YELLOW CLAYS		2015-07-03	557m	South West
169250	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-6.00m ORANGE BROWN SILTY CLAY 6.00m-15.00m ORANGE BROWN SILTSTONE/SANDSTONE 15.00m-17.50m DARK GREY SILTSTONE		2015-08-18	591m	South West
194296	Sub-artesian Facility	Sub-Artesian Monitoring	Existing			2021-04-13	609m	South
142729	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-0.40m TOPSOIL 0.40m-2.00m FINE SAND. SOME GRAVEL 2.00m-3.40m FINE TO MEDIUM SAND 3.40m-4.80m FINE SAND 4.80m-15.00m FINE COARSE SAND		2011-02-10	809m	South
142728	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-1.80m FINE TO MEDIUM SAND 1.80m-3.20m FINE SAND 3.20m-4.60m FINE TO COARSE SAND 4.60m-15.00m FINE TO MEDIUM SAND		2011-02-09	809m	South
142727	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-1.20m FINE TO MEDIUM SAND 1.20m-3.50m FINE TO COARSE SAND 3.50m-15.00m SILTSTONE WITH FINE SAND		2011-02-11	811m	South

Bore No	Facility Type	Facility Role	Status	Drillers Log	Aquifer	Drill Date	Dist	Direct'
194336	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-1.00m GRAVELLY CLAY 1.00m-2.00m RED/BROWN CLAY 2.00m-8.00m SANDY CLAY 8.00m-25.00m SILTY CLAY 25.00m-33.50m FINE SANDY CLAY	Aquifer Top-Bottom: 28.00m-33.50m. Unconsolidated Condition. Formation is contributing water to the bore. Formation does not flow.	2021-05-05	896m	North East
142726	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-0.30m TOPSOIL 0.30m-4.80m COARSE SAND 4.80m-6.40m FINE SAND 6.40m-7.80m MEDIUM TO COARSE SAND 7.80m-12.00m FINE SAND		2011-02-10	1065m	South
169353	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-2.00m WHITE FINE SAND 2.00m-5.00m BROWN SILTY CLAY 5.00m-6.00m BROWN SAND 6.00m-8.00m BROWN SILTY CLAY 8.00m-14.00m CLAY, GREY SILT SAND 14.00m-15.00m COARSE GRAIN SANDSTONE	Aquifer Top-Bottom: 11.50m-14.00m. Unconsolidated Condition. Formation is contributing water to the bore. Formation does not flow. Yield: 0.06 SWL: -12.00	2015-10-19	1177m	South West
169356	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-1.00m GREY SILT 1.00m-3.00m RED BROWN SAND 3.00m-7.00m RED BROWN SANDY CLAY 7.00m-11.00m GREY SANDSTONE 11.00m-17.00m GREY MUDSTONE 17.00m-19.00m QUARTZOSE BROWN SANDSTONE 19.00m-20.00m BROWN SILTSTONE		2015-10-20	1188m	South West
194335	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-1.00m GRAVELLY CLAY 1.00m-7.00m SANDY CLAY 7.00m-43.00m GREY CLAY 43.00m-47.50m WEATHERED SANDSTONE		2021-05-05	1233m	North East
169251	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-2.00m ORANGE BROWN SILTY CLAY 2.00m-4.00m ORANGE BROWN SILTSTONE/SANDSTONE 4.00m-18.00m LIGHT GREY SILTSTONE/SANDSTONE 18.00m-38.00m DARK GREY SILTSTONE/SANDSTONE 38.00m-41.50m COAL SEAM		2015-08-18	1292m	South
169249	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-5.00m ORANGE BROWN SANDY CLAY 5.00m-11.00m DARK GREY SANDSTONE 11.00m-14.00m COARSE QUARTZ & SANDSTONE		2015-08-19	1361m	South West
169490	Sub-artesian Facility	Water Supply	Existing	0.00m-0.10m BROWN TOPSOIL 0.10m-1.50m BROWN CLAY 1.50m-8.00m BROWN CLAYEY LOAM 8.00m-10.50m STIFF BROWN & GREY CLAY 10.50m-12.00m BROWN SANDY CLAY 12.00m-13.50m SOFT BROWN SANDY CLAY 13.50m-16.00m BROWN SANDY CLAY & SMALL GRAVEL 16.00m-24.00m BROWN SANDY CLAY WITH LAYERS OF SAND & GRAVEL 24.00m-30.00m SANDY LIGHT GREY CLAY WITH THIN SEAMS OF SAND 30.00m-32.00m WALLOON COAL MEASURES		2016-03-02	1392m	North

Bore No	Facility Type	Facility Role	Status	Drillers Log	Aquifer	Drill Date	Dist	Direct'
169355	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-0.50m GREY CLAY 0.50m-2.50m BROWN SILTY SAND 2.50m-10.00m BROWN GRAVELLY SAND 10.00m-11.50m GREY BROWN SANDSTONE 11.50m-13.00m DARK GREY SANDSTONE		2015-10-20	1475m	South West
169352	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-2.00m WHITE FINE SAND 2.00m-5.50m GREY/BROWN SAND 5.50m-11.00m BROWN SILTY SAND 11.00m-11.40m BROWN SANDSTONE	Aquifer Top-Bottom: 10.50m-11.00m. Unconsolidated Condition. Formation is contributing water to the bore. Formation does not flow. SWL: -9.00	2015-10-19	1481m	South West
169354	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-6.00m BROWN CLAYEY SAND 6.00m-7.00m BROWN SANDSTONE 7.00m-11.00m GREY SANDSTONE		2015-10-20	1635m	South West
152663	Sub-artesian Facility		Abandoned and Destroyed	0.00m-1.00m FILL 1.00m-11.00m BROWN CLAY 11.00m-12.00m RED POWDERY ROCK 12.00m-27.00m BROWN CLAY 27.00m-30.00m HARD BASALT 30.00m-42.00m SOFT BASALT 42.00m-45.00m SOFT GREY & BROWN CLAY 45.00m-52.00m BROWN SANDY/SILTY CLAY 52.00m-64.00m GREY CLAY 64.00m-84.00m COAL, CLAY & MUDSTONE		2013-11-12	1747m	South East
124866	Sub-artesian Facility	Water Supply	Existing	0.00m-1.00m TOP SOIL 1.00m-6.00m SANDY LOAM 6.00m-9.00m SAND COARSE * 9.00m-11.00m GRAVEL * 11.00m-13.00m CLAY		2005-09-03	1866m	North West
169357	Sub-artesian Facility	Sub-Artesian Monitoring	Existing	0.00m-1.00m GREY BROWN SILTY CLAY 1.00m-5.00m FINE BROWN SAND 5.00m-7.50m COARSE BROWN SAND	Aquifer Top-Bottom: 7.00m-7.50m. Unconsolidated Condition. Formation is contributing water to the bore. Formation does not flow. SWL: -6.50	2015-10-21	1991m	South

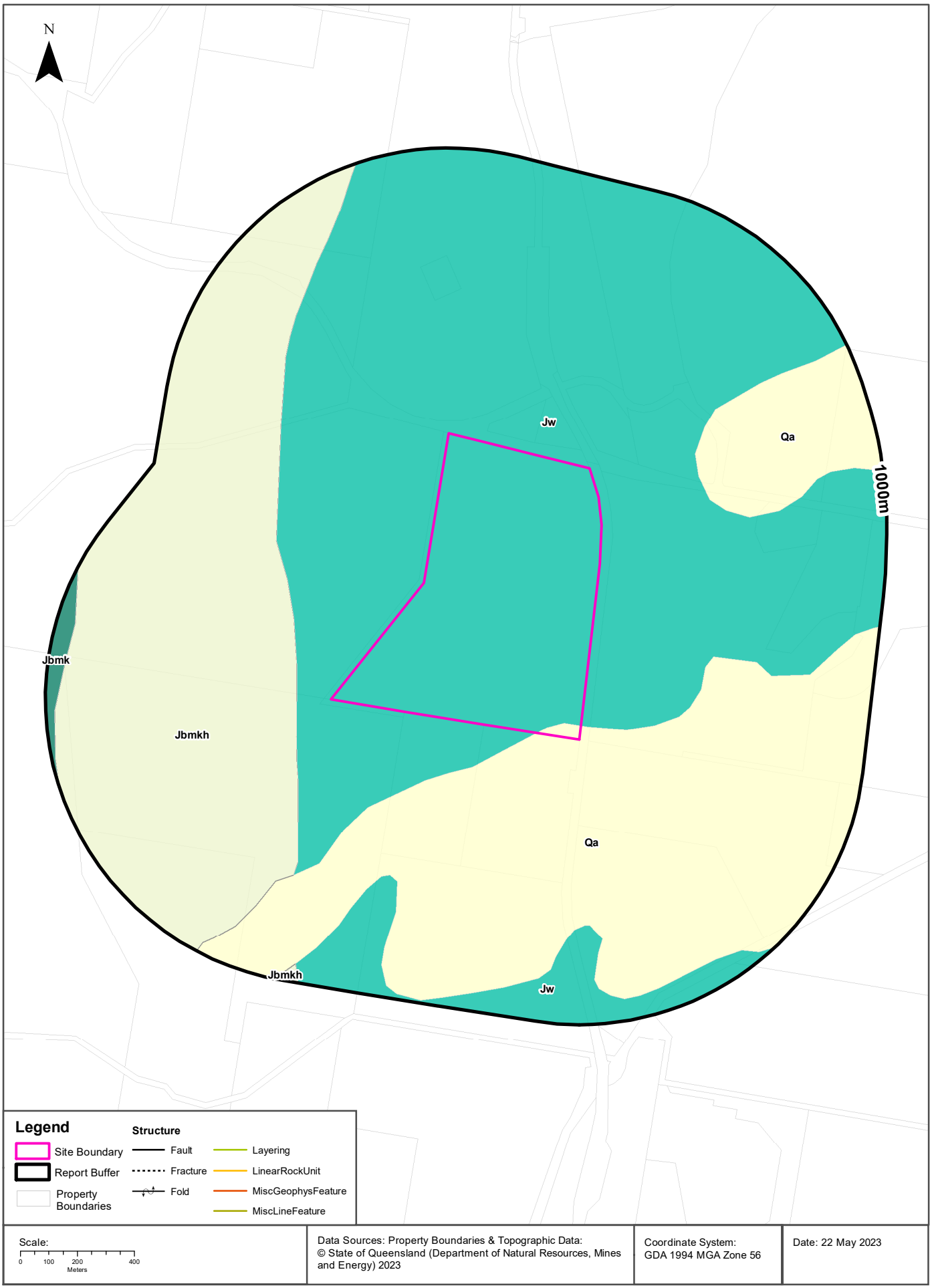
Groundwater Borehole Data: © State of Queensland (Department of Natural Resources and Mines) [2016]
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Groundwater Borehole Metadata: https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0015/31317/bore-baseline-assessment-dictionary.pdf

Detailed Surface Geology

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Geology

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Detailed Surface Geological Units

What are the Geological Units onsite?

Symbol	LithologySummary	Unit Name	Dominant Rock	Rock Type	Age
Jw	Shale, siltstone, sandstone, coal seams	Walloon Coal Measures	ARENITE-MUDROCK	STRATIFIED UNIT (INCLUDING VOLCANIC AND METAMORPHIC)	MIDDLE JURASSIC
Qa	Clay, silt, sand and gravel; flood-plain alluvium	Qa-QLD	ALLUVIUM	STRATIFIED UNIT (INCLUDING VOLCANIC AND METAMORPHIC)	QUATERNARY

What are the Geological Units within the dataset buffer?

Symbol	Lithology Summary	Unit Name	Dominant Rock	Rock Type	Age
Jbmk	Lithofeldspathic labile and sublabile to quartzose sandstone, siltstone, shale, minor coal, ferruginous oolite marker	Koukandowie Formation	ARENITE-MUDROCK	STRATIFIED UNIT (INCLUDING VOLCANIC AND METAMORPHIC)	EARLY JURASSIC - MIDDLE JURASSIC
Jbmkh	Sublabile to quartzose sandstone, siltstone, shale	Heifer Creek Sandstone Member	ARENITE	STRATIFIED UNIT (INCLUDING VOLCANIC AND METAMORPHIC)	MIDDLE JURASSIC
Jw	Shale, siltstone, sandstone, coal seams	Walloon Coal Measures	ARENITE-MUDROCK	STRATIFIED UNIT (INCLUDING VOLCANIC AND METAMORPHIC)	MIDDLE JURASSIC
Qa	Clay, silt, sand and gravel; flood-plain alluvium	Qa-QLD	ALLUVIUM	STRATIFIED UNIT (INCLUDING VOLCANIC AND METAMORPHIC)	QUATERNARY

Detailed Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Source	Scale
-	No features onsite			

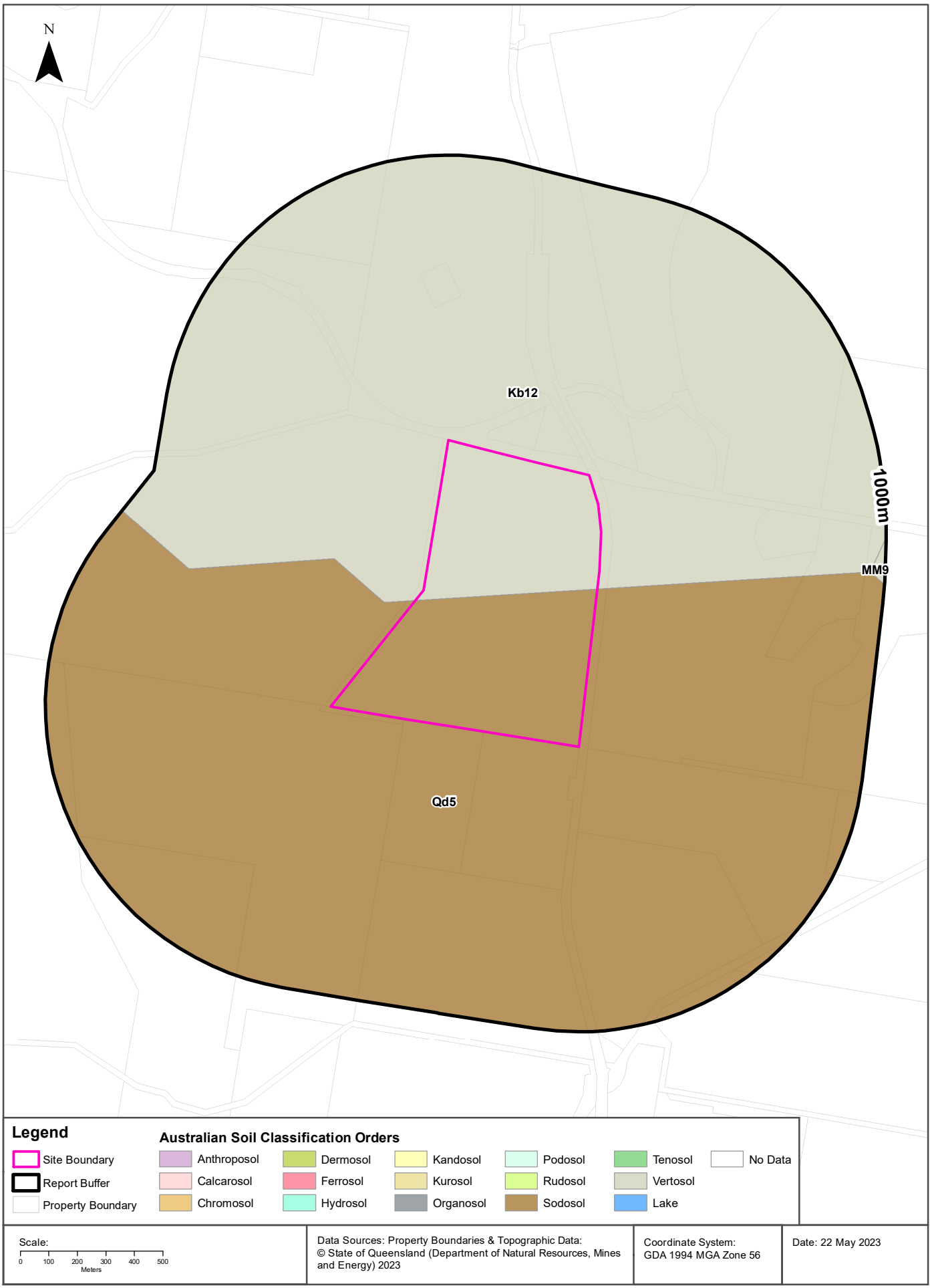
What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Source	Scale
-	No features in report buffer			

Geological Data Source : Detailed Surface Geology & Detailed Geological Structures
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Atlas of Australian Soils

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Soils

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Atlas of Australian Soils

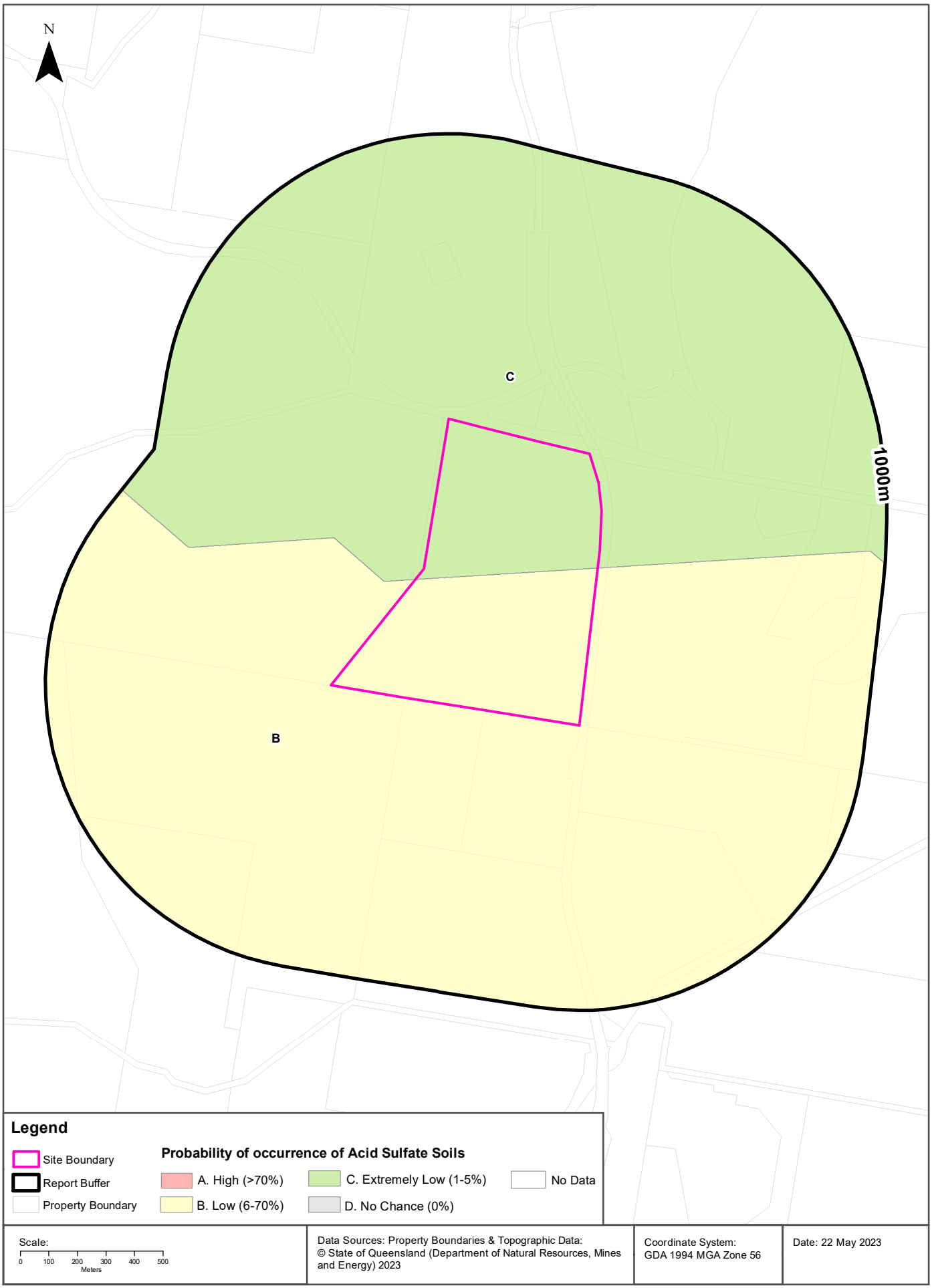
Australian soil types within the dataset buffer:

Symbol	Soil Order	Map Unit Description	Distance
Kb12	Vertosol	Gently rolling areas of the subcoastal lowland (less than 400 ft above sea level) on altered basic rocks; maximum relief is 50 ft between crests and valleys: chief soils are shallow dark cracking clays (Ug5.12) with hard neutral red and yellow soils (Dr2.12) and (Dy2.12). Associated soils are (Db3.12) and (Uf6.22) as found in unit Rh10.	0m
Qd5	Sodosol	Hilly: hill slopes of hard-setting loamy soils with red and red mottled clayey subsoils (Dr2.41 and Dr2.42). Associated are: (Um4.2) and (Dr2.21) soils and rock outcrops on upper slopes; (Dy3.2 and Dy3.4) and less commonly (Dy5.4 and Dy5.6) soils on mid and lower slopes; scattered areas of various friable soils, such as (Db3.12), (Dr4.12), (Um6.2), (Uf6), and (Ug5.12) soils on rounded hills and slopes; occasional pockets of red earths (Gn2.1); narrow stream valleys of soils of unit Kd6; and broader, undulating valleys of (Dy3.42) soils.	0m
MM9	Vertosol	Terraced valley plains: chief soils are brown and grey cracking clays (Ug5.34), (Ug5.39), and (Ug5.2) which occur on the third terrace with (Gn3.21), (Dy3.41), and (Dy3.13) soils. Associated are: (Gn3.42 and Gn3.43) soils on the second terrace, with (Ug5.15), (Ug5.16), and (Ug5.24) soils on back slopes, (Dy2.22) soils on sandy levees, and smaller areas of (Dd1.52), (Ug6.11), (Um6.22), (Db1.13), and (Db2.41); and (Uc) soils common on the first terrace and on lateral fans. Buried soils occur throughout. As mapped, small areas of adjoining units may be included.	945m

Atlas of Australian Soils: CSIRO
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Atlas of Australian Acid Sulfate Soils

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Acid Sulfate Soils

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Atlas of Australian Acid Sulfate Soils

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

PROBCLASS	Description	Distance
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO
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Heritage

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

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
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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
N/A	No records in buffer							

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

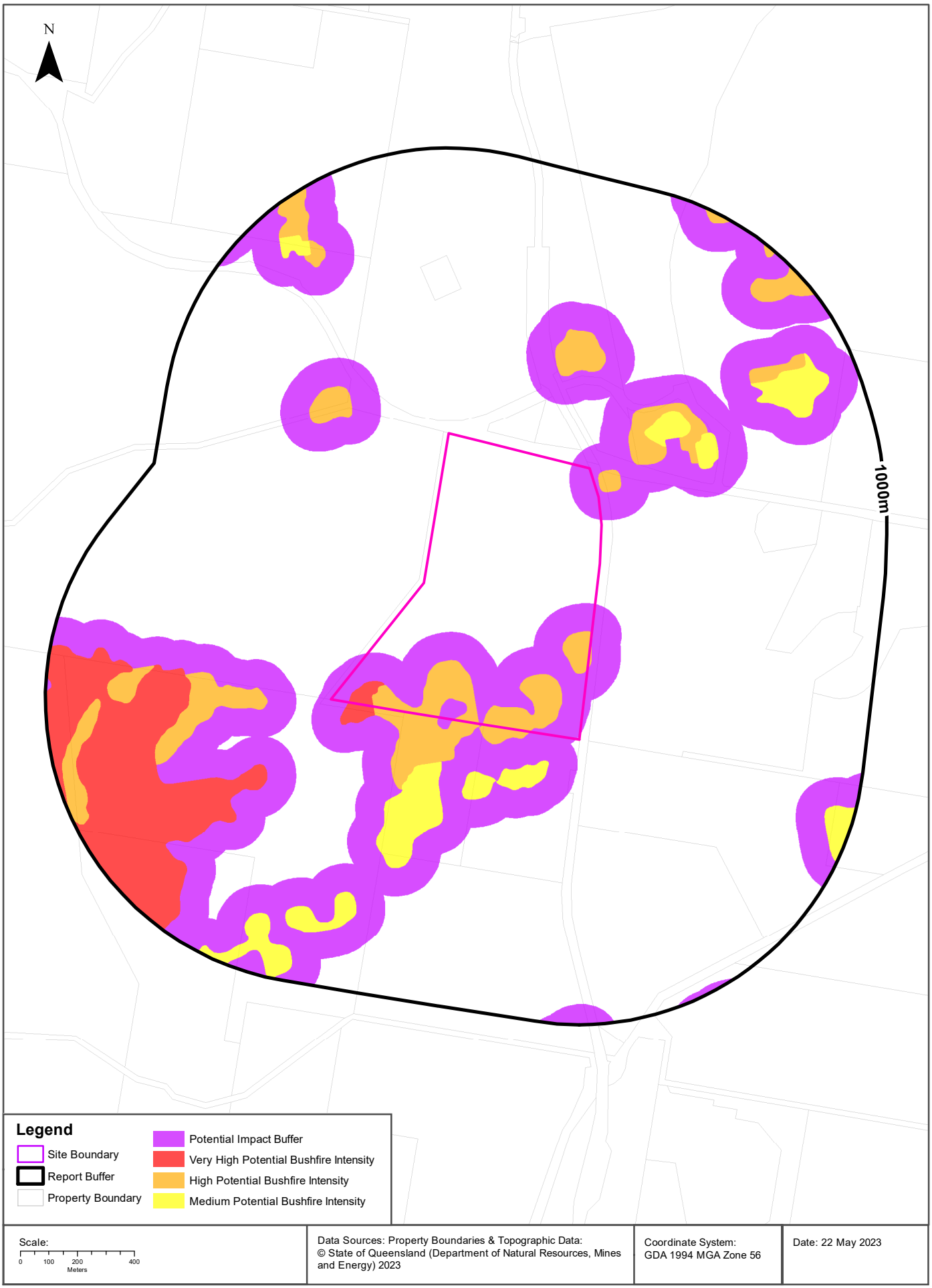
Heritage Register Boundaries within the dataset buffer:

Place ID	Name	Entry Date	Distance	Direction
N/A	No records within buffer			

Heritage Register Boundaries Data: © State of Queensland (Department of Environment and Heritage Protection)
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Natural Hazards - Bushfire Prone Areas

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Natural Hazards

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Statewide Bushfire Prone Areas

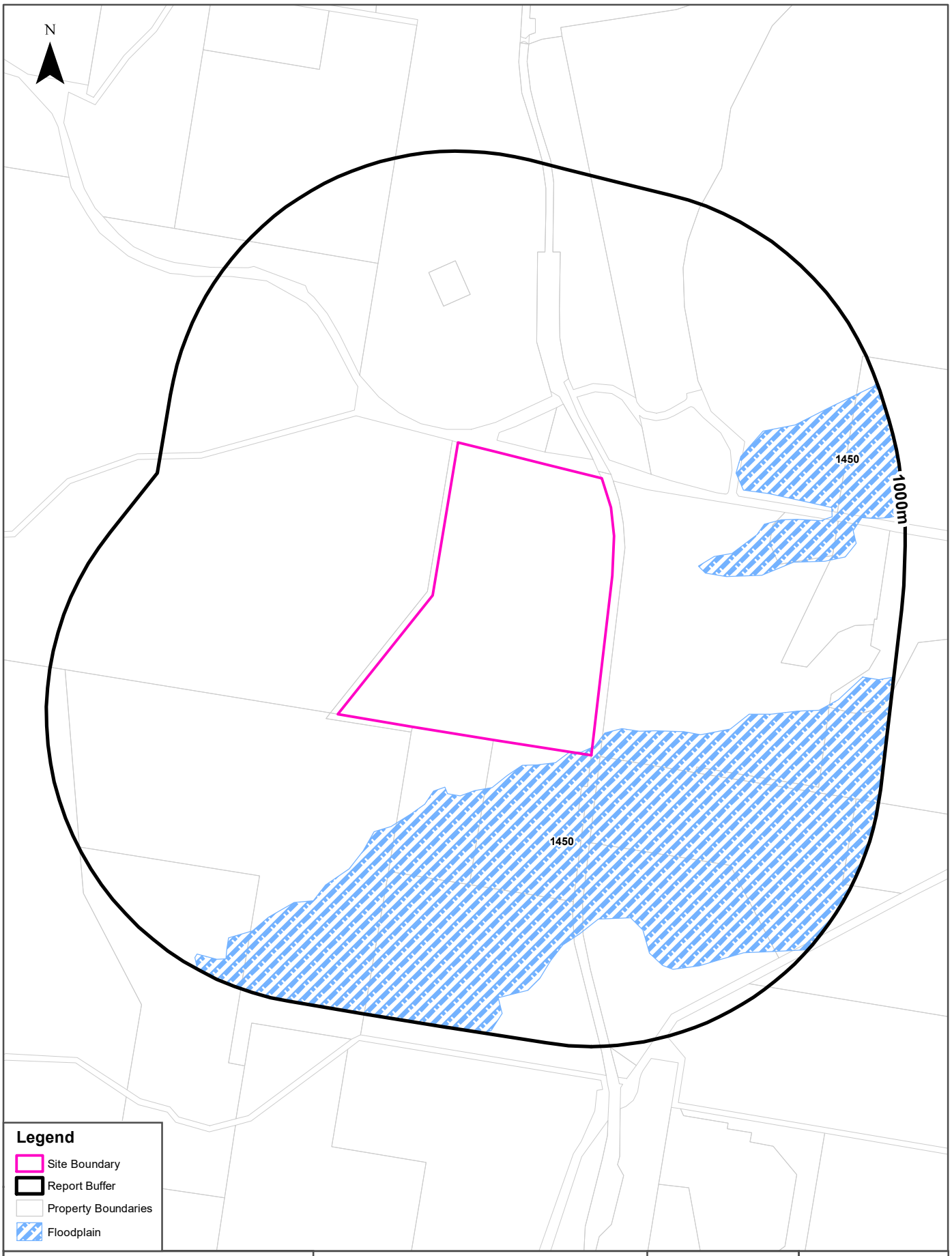
Bushfire Prone Areas within the dataset buffer:

Bushfire Prone Area Class	Version	Region	Distance	Direction
High Potential Bushfire Intensity	July 2017	South East Queensland	0m	Onsite
Potential Impact Buffer	July 2017	South East Queensland	0m	Onsite
Very High Potential Bushfire Intensity	July 2017	South East Queensland	0m	Onsite
Medium Potential Bushfire Intensity	July 2017	South East Queensland	90m	South

Bushfire Prone Areas Data: © State of Queensland (Department of Natural Resources and Mines)
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Natural Hazards - Queensland Floodplain Assessment Overlay

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Natural Hazards

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Queensland Floodplain Assessment Overlay

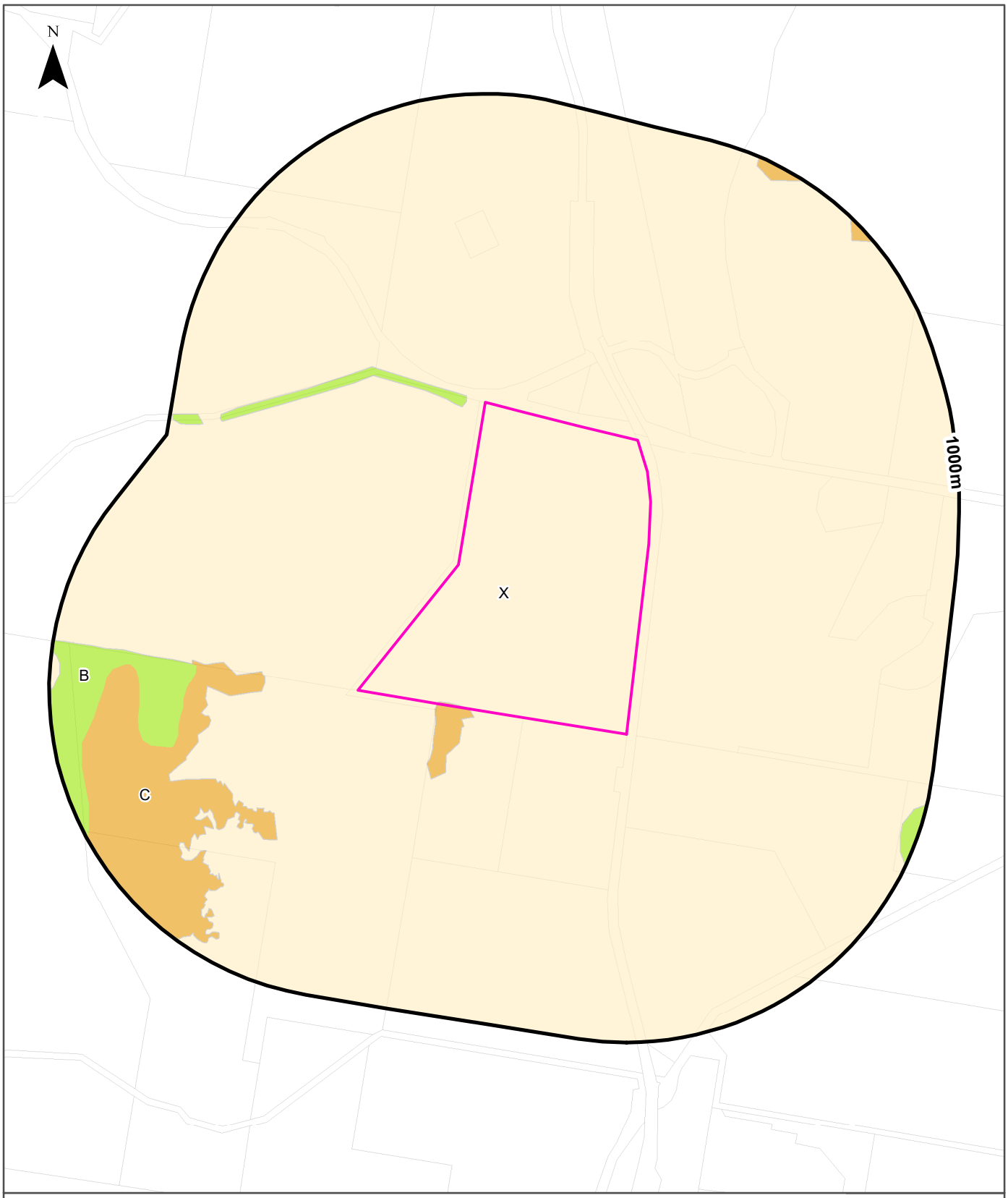
QFAO within the dataset buffer:

Number	Name	Distance	Direction
1450	Logan River	0m	Onsite

Queensland Floodplain Assessment Overlay Data: © State of Queensland (Department of Natural Resources and Mines) Creative Commons 4.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/4.0/

Ecological Constraints - Regulated Vegetation

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Legend

- Site Boundary
- Report Buffer
- Property Boundaries
- Category A
- Category B
- Category C
- Category R
- Category X
- Water
- Unknown

Scale: 0 100 200 400 600 800 Metres

Data Sources: Property Boundaries & Topographic Data: © State of Queensland (Department of Natural Resources, Mines and Energy) 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 22 May 2023

Ecological Constraints

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Regulated Vegetation

Regulated Vegetation Areas within the dataset buffer:

Regulated Vegetation Category	Category Description	Distance	Direction
Category X	Category X areas are all other areas that are not designated as a Category A, B, C or R areas.	0m	On-site
Category C	Category C areas contain high-value regrowth vegetation.	0m	South West
Category B	Category B areas contain remnant native vegetation, or may contain an endangered regional ecosystem; an of concern regional ecosystem; or a least concern regional ecosystem if not covered by Category C.	61m	North West
Category C	Category C areas contain high-value regrowth vegetation.	301m	South West
Category B	Category B areas contain remnant native vegetation, or may contain an endangered regional ecosystem; an of concern regional ecosystem; or a least concern regional ecosystem if not covered by Category C.	529m	West
Category B	Category B areas contain remnant native vegetation, or may contain an endangered regional ecosystem; an of concern regional ecosystem; or a least concern regional ecosystem if not covered by Category C.	891m	North West
Category B	Category B areas contain remnant native vegetation, or may contain an endangered regional ecosystem; an of concern regional ecosystem; or a least concern regional ecosystem if not covered by Category C.	938m	South East
Category C	Category C areas contain high-value regrowth vegetation.	946m	North East
Category C	Category C areas contain high-value regrowth vegetation.	947m	North East
Category C	Category C areas contain high-value regrowth vegetation.	998m	North West

Regulated Vegetation Management Map Data Source: Queensland Government - Department of Resources
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Ecological Constraints

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Wetland Protection Area

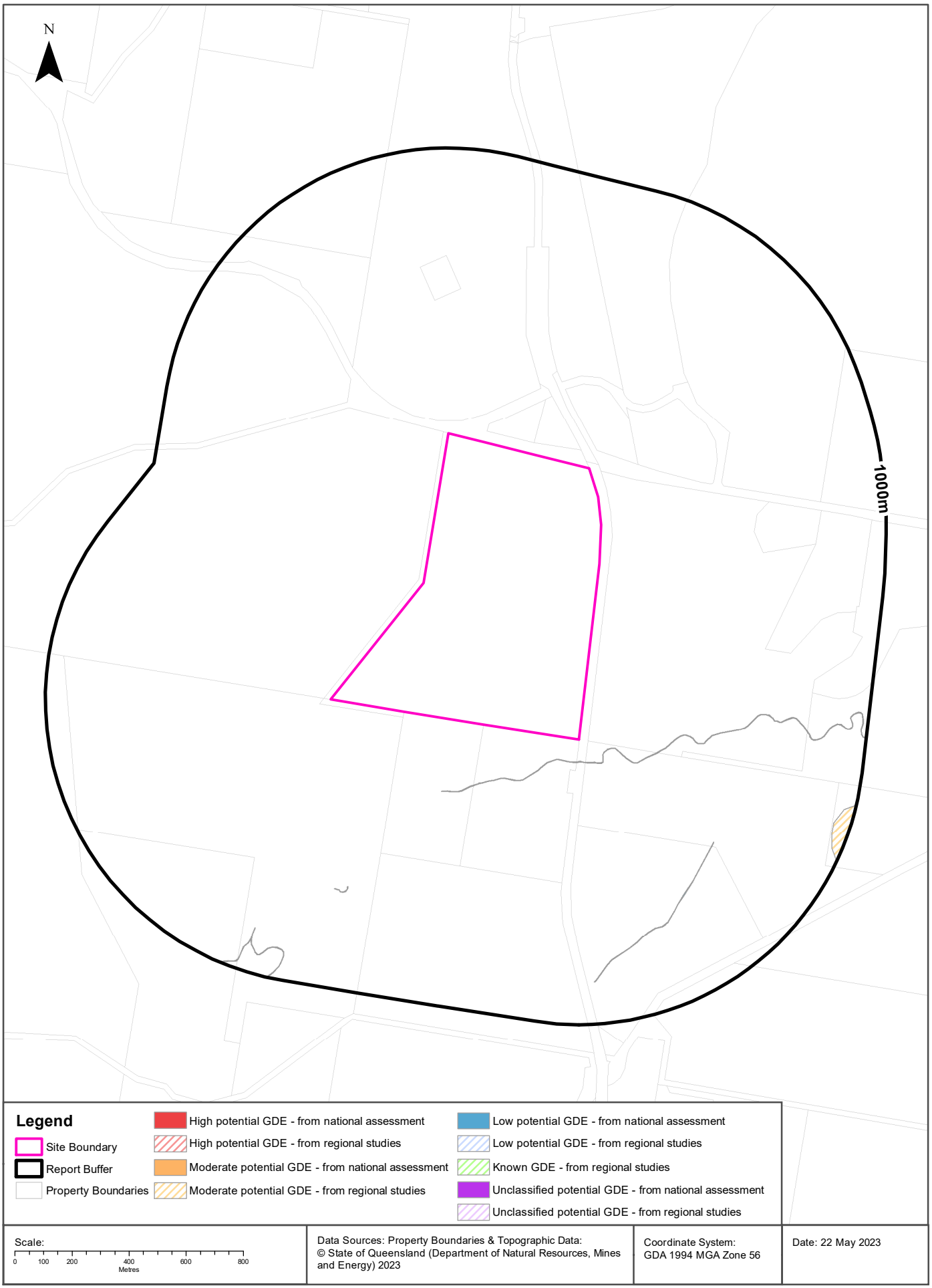
Wetland Protection Areas within the dataset buffer:

SPUNIT ID	Study Area	Wetland ID	Aqua Score	Sub-catchment Name	Sub-catchment ID	Distance	Direction
N/A	No records within buffer						

Wetland Protection Area Data Source: State of Queensland (Environment and Heritage Protection)
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Ecological Constraints - Groundwater Dependent Ecosystems Atlas

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Ecological Constraints

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Groundwater Dependent Ecosystems Atlas

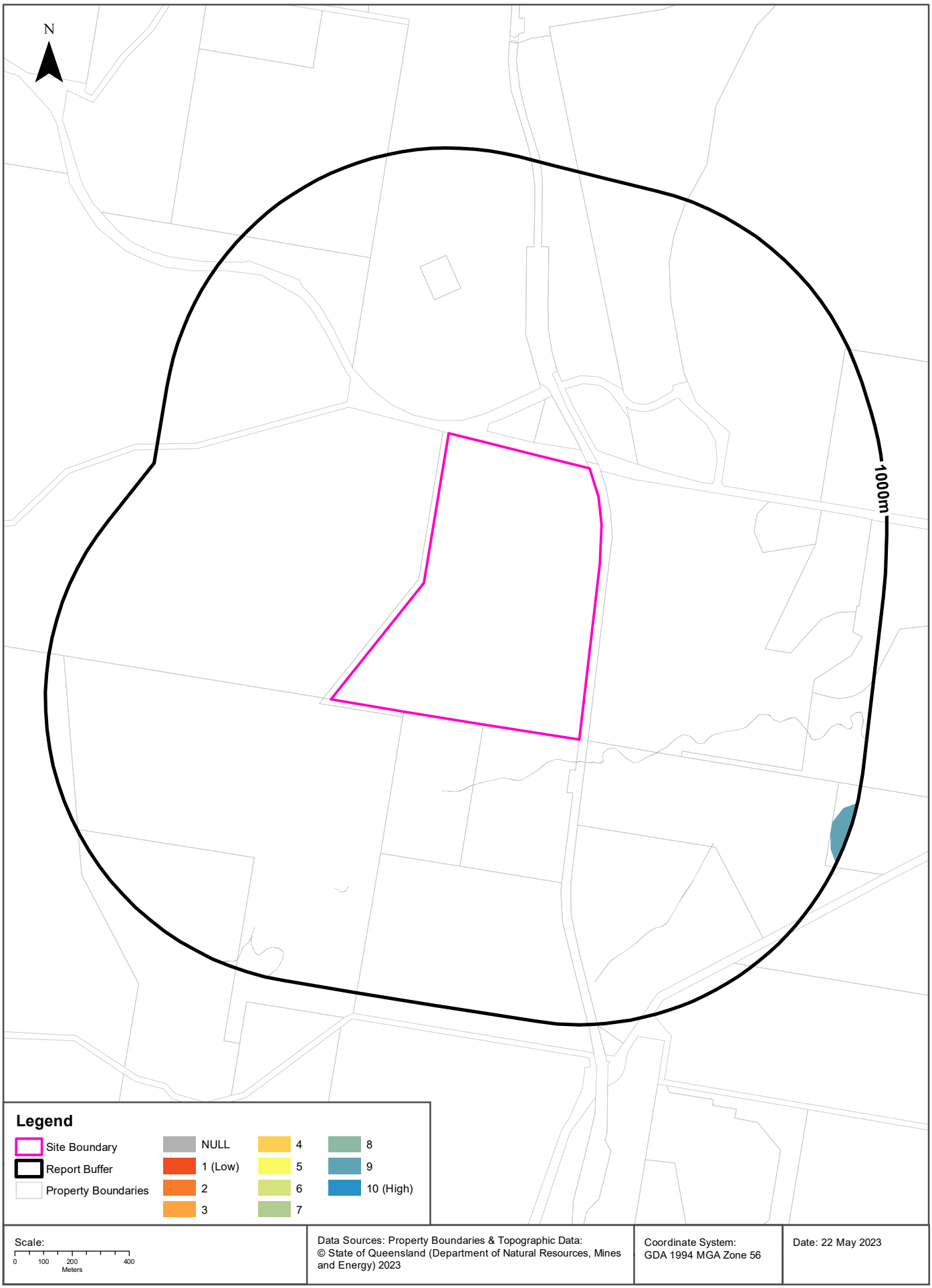
GDEs within the dataset buffer:

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Aquatic	Moderate potential GDE - from national assessment	West	GORDON RIVER		74m
Aquatic	Low potential GDE - from national assessment	Lucindale	MILLICENT COAST		592m
Aquatic	High potential GDE - from national assessment	Kingoonya	GAIRDNER		636m
Aquatic	Known GDE - from regional studies	Murnpeowie	LAKE EYRE		881m
Aquatic	Unclassified potential GDE - from regional studies	Victorian Riverina	GOULBURN RIVER		881m
Terrestrial	Moderate potential GDE - from regional studies	Mountain ranges, rugged and dissected on granitic and metamorphic rocks in east, broader uplands and upland basins, partly on sedimentary rocks, in west.	Vegetation	Unconsolidated sedimentary	937m

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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Ecological Constraints - Inflow Dependent Ecosystems Likelihood

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285



Ecological Constraints

Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Inflow Dependent Ecosystems Likelihood

IDEs within the dataset buffer:

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Aquatic		West	GORDON RIVER		74m
Terrestrial	9	Mountain ranges, rugged and dissected on granitic and metamorphic rocks in east, broader uplands and upland basins, partly on sedimentary rocks, in west.	Vegetation	Unconsolidated sedimentary	937m

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology
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Location Confidences

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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   (i) the Report should not be used or taken to indicate or exclude actual fitness or unfitness of Land or Property for any particular purpose
   (j) the Report should not be relied upon for determining saleability or value or making any other decisions in relation to the Property and in particular should not be taken to be a rating or assessment of the desirability or market value of the property or its features; and
   (k) the End User should undertake its own inspections of the Land or Property to satisfy itself that there are no defects or failures
2. The End User may not make the Report or any copies or extracts of the report or any part of it available to any other person. If End User wishes to provide the Report to any other person or make extracts or copies of the Report, it must contact the purchaser of the Report before doing so to ensure the proposed use is consistent with the contract terms between Lotsearch and the purchaser.
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Report or these Terms;

(b) waives any right it may have to claim against Third Party Content Supplier in connection with the Report, or the negotiation of, entry into, performance of, or termination of these Terms; and

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11. Subject to paragraph 9, neither Lotsearch nor the End User is liable to the other for:

    (a) any indirect, incidental, consequential, special or exemplary damages arising out of or in relation to the Report or these Terms; or

    (b) any loss of profit, loss of revenue, loss of interest, loss of data, loss of goodwill or loss of busin1ess opportunities, business interruption arising directly or indirectly out of or in relation to the Report or these Terms,

    irrespective of how that liability arises including in contract or tort, liability under indemnity or for any other common law, equitable or statutory cause of action or otherwise.
12. These Terms are subject to New South Wales law.

Appendix F

Current and historical title records

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Summary of Owners Report

Address: - Lot 1 Beaudesert-Boonah Road, Bromelton, QLD 4285

Description: - Lot 1 R.P. 45234

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
28.09.1917 (1917 to 1921)	Thomas Hutcheson Todd	Volume 1379 Folio 53
16.12.1921 (1921 to 1956)	Jane Isabel Todd (Widow) William Todd George Alexander Todd (Transmission Application not investigated)	Volume 1379 Folio 53 Now Volume 1775 Folio 67
02.08.1956 (1956 to 1958)	Stephen James Murray Thomas William Murray	Volume 1775 Folio 67 Now Volume 2994 Folios 41 & 42
12.12.1958 (1958 to 1960)	Stephen James Murray (Transmission Application not investigated)	Volume 2994 Folios 41 & 42
26.09.1960 (1960 to 1964)	Edward Joseph Yore	Volume 2994 Folios 41 & 42 Now Volume 3337 Folio 204
12.11.1964 (1964 to 1991)	Danby William Franklin	Volume 3337 Folio 204
11.02.1991 (1991 to 1995)	Donald John Franklin Stuart Franklin (Transmission Application not investigated)	Volume 3337 Folio 204 Now 13337204
14.08.1995 (1995 to 2011)	Consolidated Meat Holdings Pty Ltd	13337204
08.11.2011 (2011 to 2022)	Teys Investments Pty Ltd	13337204
20.12.2022 (2022 to Date)	# Queensland Energy and Resource Centre Pty (As Trustee)	13337204

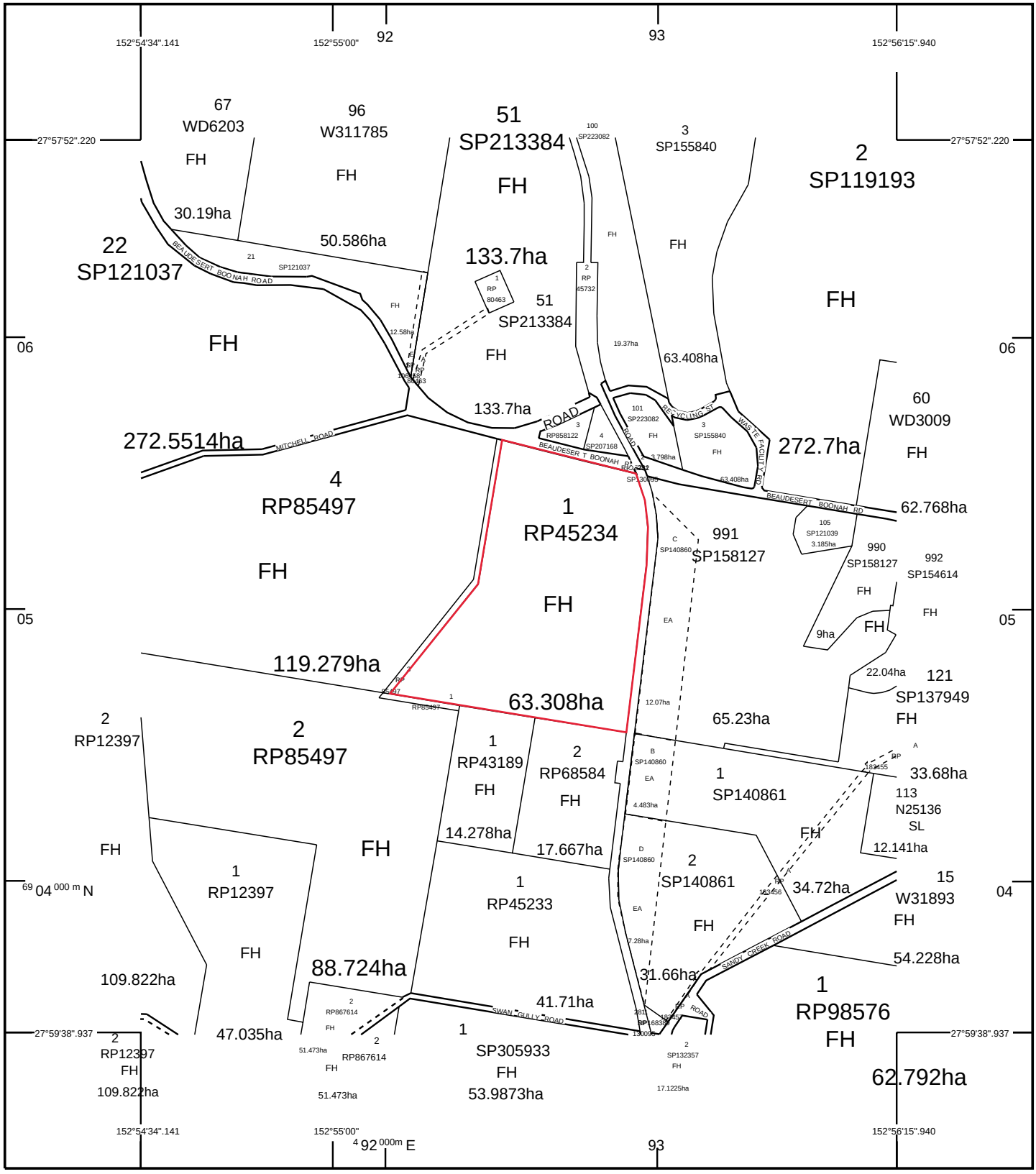
Denotes current registered proprietor

Leases: - NIL

Easements: - NIL

Yours Sincerely
Taylor Wilson
30th May 2023

Email: mark.groll@infotrack.com.au
Email: taylor.wilson@infotrack.com.au



STANDARD MAP NUMBER
9442-22321

0 400 800 1200 1600 2000 m

HORIZONTAL DATUM:GDA94 ZONE:56 SCALE 1 : 20000

MAP WINDOW POSITION & NEAREST LOCATION

152°55'25".040
27°58'45".579
BROMELTON
4.19 KM

SUBJECT PARCEL DESCRIPTION

DCDB

Lot/Plan	1/RP45234
Area/Volume	63.308ha
Tenure	FREEHOLD
Local Government	SCENIC RIM REGIONAL
Locality	BROMELTON
Segment/Parcel	11233/1

CLIENT SERVICE STANDARDS

PRINTED 30/05/2023

DCDB 29/05/2023 (Lots with an area less than 3000m² are not shown)

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Despite Department of Resources best efforts, RESOURCES makes no representations or warranties in relation to the Information, and, to the extent permitted by law, exclude or limit all warranties relating to correctness, accuracy, reliability, completeness or currency and all liability for any direct, indirect and consequential costs, losses, damages and expenses incurred in any way (including but not limited to that arising from negligence) in connection with any use of or reliance on the Information

For further information on SmartMap products visit
https://www.qld.gov.au/housing/buying-owning-home/property-land-valuations/smartmaps

GDA

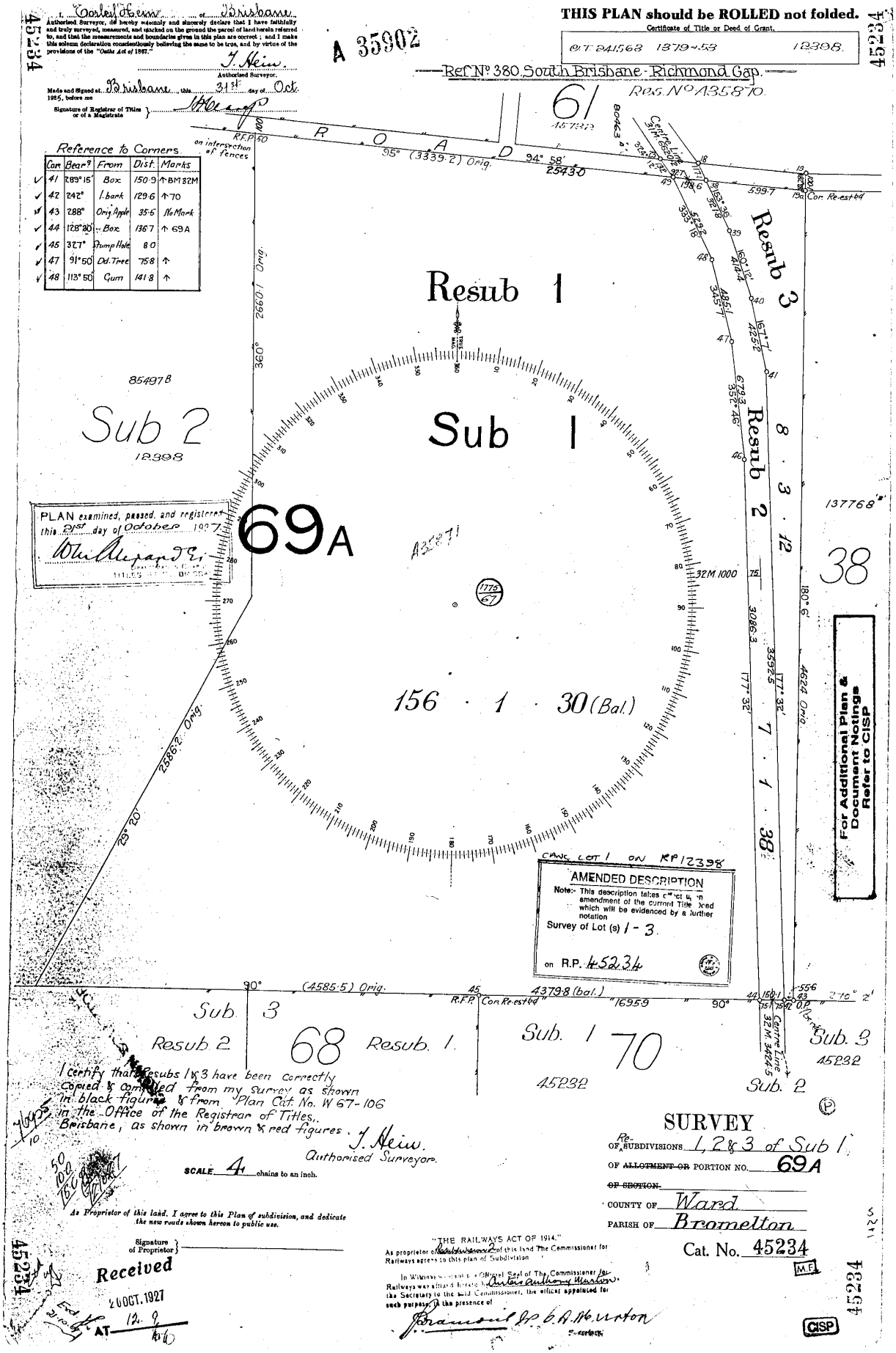
SmartMap

An External Product of
SmartMap Information Services

Based upon an extraction from the
Digital Cadastral Data Base

Queensland Government

(c) The State of Queensland,
(Department of Resources) 2023.



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Certificate of Title.

VOL. S 1379 FOL. 53

11379053

QUEENSLAND.

No. 241563

(C)

REFERENCE TO PREVIOUS

VOL. 781 FOLIO 179

REGISTER BOOK, VOL. 1379 FOLIO 53

a No. 7691

THOMAS HUTCHESON TODD

of Beaudesert pursuant to Memorandum of Conveyance No. 691226 produced the second day of August 1917, registered the seventeenth day of September 1917, is now seized of an Estate in Fee-simple, subject nevertheless to such encumbrances, liens, and interests as are by memorandum notified hereon, in All that piece of Land situated in the County of Ward Parish of Bromelton containing one hundred and seventy two acres and three roods more or less, as shown on the Plan hereon, and therein edged red, Being subdivision one of portion sixty nine A on Plan Cat No. W67-106 deposited in the office of the Registrar of Titles Brisbane

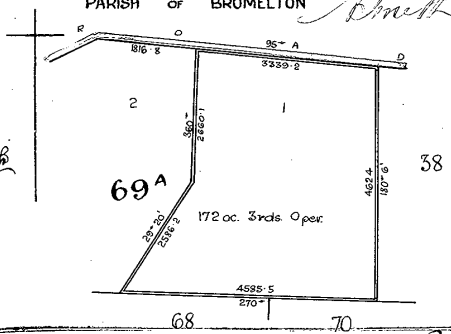
which said piece of Land is part of the portion marked 69A delineated in the Public Map of the said parish deposited in the Office of the Surveyor-General, originally granted by Deed of Grant No. 63265 to Edward Barrow Forrest

Saving Always to the Crown all the rights and interests reserved to it by the said Deed of Grant.

IN WITNESS whereof, I have hereunto signed my name and affixed my seal, this Twenty eighth day of September One thousand nine hundred and seventeen

Signed, Sealed, and Delivered, the 28 day of September 1917, in presence of

PARISH OF BROMELTON



Scale, 20 chains per inch.

REGISTRAR OF TITLES QUEENSLAND

REGISTRAR OF TITLES.

No. 824589 TRANSMISSION BY DEATH. In consequence of the death of the above-named Thomas Hutcheson Todd on the 8 January 1921 an estate in fee-simple in the within land became transmitted to Jane Isabel Todd, Widow William Todd and George Alexander Todd as devisees in trust as appears by Probate Copy of Will and documentary evidence. Produced 16 Dec 1921 at 12:46 p.m. Entered 31 May 1922

Dep. Registrar of Titles.

SUCCESSION DUTY NOT PAID on Transmission by Death No. 824589 (due on determination of life interest) 31 May 1922

No. 691227 Bill of Mortgage produced 2 Aug 1917 at 12·52 p.m. Registered 2 Sep 1917 from Thomas Hutcheson Todd to Elizabeth Tilley Wife of Edward Patrick Tilley principal sum Three hundred pounds payable 15 Jan 1919 interest at the rate of 5% per centum per annum, payable half-yearly

RELEASE

Dep. Registrar of Titles.

© Queensland Titles Registry Pty Ltd 2023

The South Brisbane-Roma St-Bromfleur Railway Agreement Act of 1913" and
No. A35870 By Resumption under "The Railways Act of
1914" 16 acres 1 rd 10 perches Res 2 and 3
of the within land is resumed for Railway purposes and is now
vested in The Commissioner for Railways vide Plan Cat.
No. 45234 Produced 20 Oct 1927 at 11.20 a m.,
Registered 24 May 1928
Free from Succession
Duty Encumbrances

REGISTRAR OF TITLES.

No. A35874 REQUEST to issue Certificate of Title for
15 acres 1 rd 30 perches Res 1
Produced 20 Oct 1927 at 11.20 a m. registered 24 May 1928
Cancelled as above / vide Vol. 1995 Fol. 107
Subject to Succession
Duty Encumbrances

REGISTRAR OF TITLES.

THE DESCRIPTION OF THE WITHIN LAND IS CONVERTED
TO LOT(S) 2 AND 3
ON REGISTERED PLAN No. 45234
11 APR 1986

REGIS

K.243
S.1
P.69A
BROMELTON

45234

1379.53

VOL: S 1775 FOL: 67

11775067

Certificate of Title.

QUEENSLAND.

(C) No. 331327

e No. 15493

REFERENCE TO PREVIOUS

VOL. 1379 FOLIO 53

REGISTER BOOK, VOL. 1775 FOLIO 67

JANE ISABEL TODD Widow

WILLIAM TODD and GEORGE ALEXANDER TODD

of as Executors under the Will of Thomas Hickson Todd deceased pursuant to Memorandum of Request No. A35871 received the twentieth day of October 1927, now seized of an Estate in Fee-simple, subject nevertheless to such encumbrances, liens, and interests as are by memorandum notified hereon, in All that piece of Land situated in the County of Ward Parish of Bromelton

containing one hundred and fiftysix acres one rood thirty perches

more or less, as shown on the Plan hereon, and therein edged red, Being resubdivision 1 of subdivision 1 of portion 69A on plan Cat. No. 45234 deposited in the Office of the Registrar of Titles Brisbane

which said piece of Land is part of the portion marked 69A delineated in the Public Map of the said parish deposited in the Office of the Surveyor-General, originally granted by Deed of Grant No. 63265 to Edward Barrow Forrest

Saving Always to the CROWN all the rights and interests reserved to it by the said Deed of Grant.

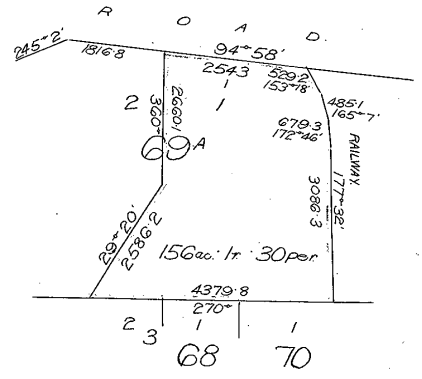
IN WITNESS whereof, I have hereunto signed my name and affixed my seal, this eleventh day of June One thousand nine hundred and twenty nine

Signed, Sealed, and Delivered, the eleventh day of June 1929, in presence of

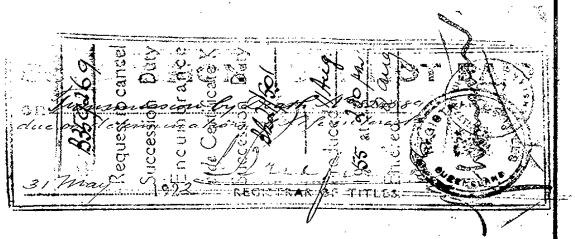
REGISTRAR OF TITLES QUEENSLAND

Parish of Bromelton.

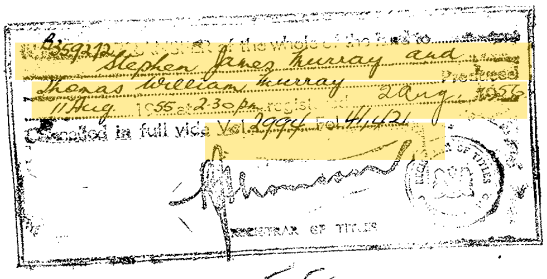
REGISTRAR OF TITLES.



Scale, 20 chains per inch.



© Queensland Titles Registry Pty Ltd 2023



FC

Request to
Remove
B359273
only
mgc
(B359273)
also
25-8-55

UNDIVIDED MOIETY

Certificate of Title.

VOL: S 2994 FOL: 42

12994042

FULL [illegible] LLED

b No. 62325

(C)

No. 614052

QUEENSLAND.

Reference to Previous	
Volume	Folio
1775	67

Register Book, Vol. 2994 Folio 42

THOMAS WILLIAM MURRAY

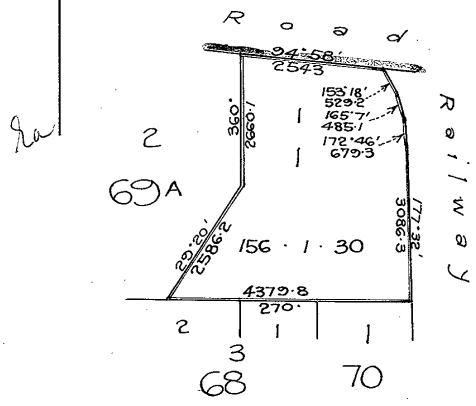
of _____ pursuant to Memorandum of Conveyance No. B359272 produced the eleventh day of August 19 55, registered the second day of August 1956, is now seized of an Estate in Fee-simple, as tenant in common with another in one undivided half part or share, subject nevertheless to such encumbrances, liens, and interests as are by memorandum notified hereon, in **All** that piece of Land situated in the County of Ward Parish of Bromelton City of _____ containing One hundred and fifty six acres one rood thirty perches more or less, as shown on the Plan hereon, and therein edged red, Being Resubdivision 1 of subdivision 1 of Portion 69A on Plan Cat. No. 45234 deposited in the Office of the Registrar of Titles, Brisbane, which said piece of Land is part of the portion marked 69A delineated in the Public Map of the said parish deposited in the Office of the Surveyor-General, originally granted by Deed of Grant No. 63265

Saving Always to the Crown all the rights and interests reserved to it by the said Deed of Grant.

In Witness whereof, I have hereunto signed my name and affixed my seal, this twenty second day of October One thousand nine hundred and fifty six

Signed, Sealed, and Delivered, the 22nd day of October 19 56 in presence of

Parish of Bromelton



Scale, 20 chains per inch.

REGISTRAR OF TITLES

RELEASE No. B359273 Bill of Mortgage produced 11 Aug 1955 2.30 P.M. registered 13 Dec 1956 endorsed on Bill of Mortgage No. B359273 [illegible]

REGISTRAR OF TITLES

© Queensland Titles Registry Pty Ltd 2023

No. B612047 TRANSMISSION BY DEATH. In consequence of the death of the above-named Thomas William Murray on the 26 Jan 1956 an estate in fee simple in the within land became transmitted to Joseph Murray as administrator as trustee as appears by Letters of Administration and documentary evidence. Produced 12 Dec 1958 at 11.1 am Entered 29th Dec 1960

Subject to Bill of mortgage B359773

R M C Miller
ACTING REGISTRAR OF TITLES

REGISTRAR OF TITLES QUEENSLAND

No. 877361 TRANSFER of the whole of the land to Edward Joseph Gore

13 Dec 1960 at 4.20 pm registered 20 Dec 1960

Cancelled in full vide Vol 3227 Fol. 204

REGISTRAR OF TITLES

REGISTRAR OF TITLES QUEENSLAND

FULLY CANCELLED

UNDIVIDED MOIETY

Certificate of Title.

VOL: S 2994 FOL: 41

12994041

FULLY CANCELLED

(C)

No. 614051

QUEENSLAND.

Reference to Previous	
Volume	Folio
1775	67

Register Book, Vol. 2994 Folio 41

b No. 62324

STEPHEN JAMES MURRAY

of _____ pursuant to Memorandum of Conveyance No. B359272 produced the eleventh day of August 1955, registered the second day of August 1956, is now seized of an Estate in Fee-simple, as tenant in common with another in one undivided half part or share, subject nevertheless to such encumbrances, liens, and interests as are by memorandum notified hereon, in **All** that piece of Land situated in the County of Ward Parish of Bromelton City of _____ containing One hundred and fifty six acres one rood thirty perches more or less, as shown on the Plan hereon, and therein edged red,

Being Resubdivision 1 of subdivision 1 of Portion 69A

on Plan Cat. No. 45234 deposited in the Office of the Registrar of Titles, Brisbane, which said piece of Land is part of the portion marked 69A delineated in the Public Map of the said parish deposited in the Office of the Surveyor-General, originally granted by Deed of Grant No. 63265

Saving Always to the Crown all the rights and interests reserved to it by the said Deed of Grant.

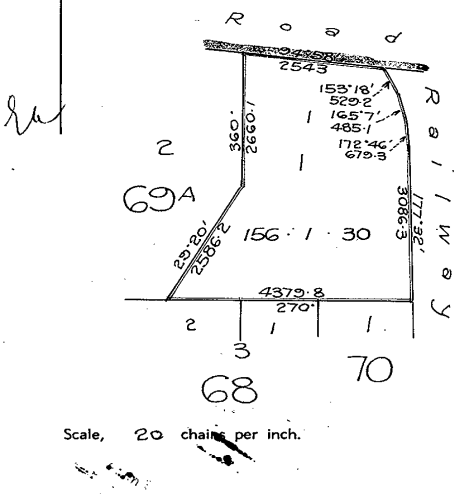
In Witness whereof, I have hereunto signed my name and affixed my seal, this twenty second day of October One thousand nine hundred and fifty six

Signed, Sealed, and Delivered, the 22nd day of October 1956 in presence of

G. O'Dowd

REGISTRAR OF TITLES

Parish of Bromelton



Scale, 20 chains per inch.

No. B359273 Bill of Mortgage produced 11 Aug 1955 at 2.30 p.m., registered 23 Oct 1956 from Stephen James Murray and Thomas William Murray to James Todd Widow, William Todd and George Alexander Todd to secure the payment of the moneys and interest therein mentioned to.

RELEASE endorsed on Bill of Mortgage No. B359273

REGISTRAR OF TITLES

© Queensland Titles Registry Pty Ltd 2023

No. 877360[illegible] TRANSFER of the whole of the land to
Edward Joseph Gore
Produced
13 Sep 1960 at 4.20 p.m. registered 20 SEP 1960
Cancelled in full vide Vol. 2337 Fol. 204

REGISTRAR OF TITLES

Rel
8[illegible]

~~877360~~
(AR)

FULLY CANCELLED

Certificate of Title.

VOL: S 3337 FOL: 204
13337204

QUEENSLAND.

(C) No. 697464

a No. 48619

Reference to Previous	
Volume	Folio
2994	41,42

Register Book, Vol. 3337 Folio 204

EDWARD JOSEPH YORE

pursuant to Memorandum of Conveyance No. B773601 produced the thirteenth day of September 1960, registered the twenty sixth day of September 1960, is now seized of an Estate in Fee-simple, subject nevertheless to such encumbrances, liens, and interests as are by memorandum notified hereon, in **All** that piece of Land situated in the County of Ward Parish of Bromelton City of containing One hundred and fifty six acres one rood thirty perches more or less, as shown on the Plan hereon, and therein edged red, Being Resubdivision 1 of subdivision 1 of Portion 69A on Plan Cat. No. 45234 deposited in the Office of the Registrar of Titles, Brisbane, which said piece of Land is part of the portion marked 69A delineated in the Public Map of the said parish deposited in the Office of the Surveyor-General, originally granted by Deed of Grant No. 63265

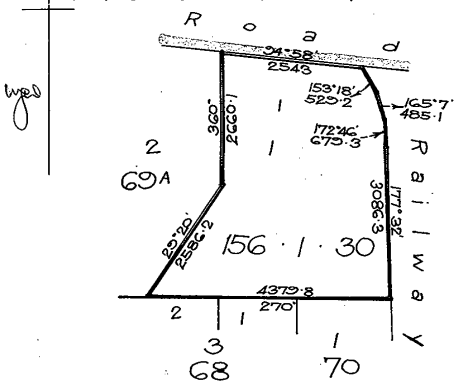
D765286
D765287

Saving Always to the Crown all the rights and interests reserved to it by the said Deed of Grant.

In Witness whereof, I have hereunto signed my name and affixed my seal, this eleventh day of October One thousand nine hundred and sixty

Signed, Sealed, and Delivered, the 11th day of October 1960, in presence of

Parish of Bromelton.



Scale, 20 chains per inch.

REGISTRAR OF TITLES,

Danby William Franklin

now seised of an Estate in fee-simple in the within land.
Transfer No. D765286 produced 4 Nov 1964 at 10.42 a.m.
Registered 12 NOV 1964

REGISTRAR OF TITLES

No. D765287 Bill of Sale/Mortgage/Lien
to The Commercial Bank of Australia Limited
Produced 4 Nov 1964 at 10.42 a.m.
Registered 12 NOV 1964

RELEASED 27 FEB 1968

REGISTRAR OF TITLES

© Queensland Titles Registry Pty Ltd 2023

THE DESCRIPTION OF THE WITHIN LAND IS CONVERTED TO LOT(S) 1

ON REGISTERED PLAN No. 45234

12 NOV 1986

ACTING REGISTRAR OF TITLES

DONALD JOHN FRANKLIN AND STUART FRANKLIN

AS PERSONAL REPRESENTATIVES ARE now registered proprietors in fee simple.

TRANSMISSION BY DEATH No. A534220TG

PRODUCED 11 FEB 1991

RECORDED 27 FEB 1991

REGISTRAR OF TITLES

SUBJECT TO MORTGAGE No. D165287

HISTORICAL TITLE SEARCH
QUEENSLAND TITLES REGISTRY PTY LTD

Request No: 44577037
Search Date: 30/05/2023 11:58

Title Reference: 13337204
Date Created: 11/10/1960

Previous Title: 12994041
12994042

REGISTERED OWNER

Dealing No: 722194302 20/12/2022

QUEENSLAND ENERGY AND RESOURCE CENTRE PTY
A.C.N. 661 737 999 TRUSTEE
UNDER INSTRUMENT 722194302

TRANSFER TO TRUSTEE No 722194302
QUEENSLAND ENERGY AND RESOURCE CENTRE PTY A.C.N. 661 737 999
TRUSTEE
UNDER INSTRUMENT 722194302
Lodged at 14:46 on 20/12/2022

TRANSFER No 714151317
TEYS INVESTMENTS PTY LTD A.B.N. 15 009 868 900
Lodged at 14:45 on 08/11/2011

TRANSFER No 700804175
to
CONSOLIDATED MEAT HOLDINGS PTY LTD
Lodged at 14:24 on 14/08/1995

ESTATE AND LAND

Estate in Fee Simple

LOT 1 REGISTERED PLAN 45234
Local Government: SCENIC RIM

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10600025 (POR 69A)

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
714049265	SETTLMNT NTC	07/09/2011 10:20	NOT CURRENT

UNREGISTERED DEALINGS - NIL

** End of Historical Title Search **

COPYRIGHT QUEENSLAND TITLES REGISTRY PTY LTD [2023]
Requested By: D-ENQ INFOTRACK PTY LIMITED

CURRENT TITLE SEARCH
QUEENSLAND TITLES REGISTRY PTY LTD

Request No: 44577030
Search Date: 30/05/2023 11:58

Title Reference: 13337204
Date Created: 11/10/1960

Previous Title: 12994041
12994042

REGISTERED OWNER

Dealing No: 722194302 20/12/2022

QUEENSLAND ENERGY AND RESOURCE CENTRE PTY
A.C.N. 661 737 999 TRUSTEE
UNDER INSTRUMENT 722194302

ESTATE AND LAND

Estate in Fee Simple

LOT 1 REGISTERED PLAN 45234
Local Government: SCENIC RIM

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10600025 (POR 69A)

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

** End of Current Title Search **

COPYRIGHT QUEENSLAND TITLES REGISTRY PTY LTD [2023]
Requested By: D-ENQ INFOTRACK PTY LIMITED

Appendix G

Site photographs



Photograph 1: View to the south-east from the central portion of the site



Photograph 2: View of cattle crush in north-western portion of the site

Douglas Partners Geotechnics / Environment / Groundwater	Project No. 219361.01	Site Photographs	Plate No. 1 of 6
	Walkover Date: 3 July 2023	Preliminary Site Investigation Lot 1 Beaudesert-Boonah Road, Bromelton Client: Cleanaway Operations Pty Ltd	



Photograph 3: View of adjoining cattle pens



Photograph 4: View of adjoining cattle pen

Douglas Partners Geotechnics / Environment / Groundwater	Project No. 219361.01	Site Photographs	Plate No. 2 of 6
	Walkover Date: 3 July 2023	Preliminary Site Investigation Lot 1 Beaudesert-Boonah Road, Bromelton Client: Cleanaway Operations Pty Ltd	



Photograph 5: View of cattle spray



Photograph 6: View of cattle spray

Douglas Partners Geotechnics / Environment / Groundwater	Project No. 219361.01	Site Photographs	Plate No. 3 of 6
	Walkover Date: 3 July 2023	Preliminary Site Investigation Lot 1 Beaudesert-Boonah Road, Bromelton Client: Cleanaway Operations Pty Ltd	



Photograph 7: View of cattle spray



Photograph 8: View of sparse groundcover surrounding cattle spray

Douglas Partners Geotechnics / Environment / Groundwater	Project No. 219361.01	Site Photographs	Plate No. 4 of 6
	Walkover Date: 3 July 2023	Preliminary Site Investigation Lot 1 Beaudesert-Boonah Road, Bromelton Client: Cleanaway Operations Pty Ltd	



Photograph 9: View of concrete slab



Photograph 10: View of concrete slab

Douglas Partners Geotechnics / Environment / Groundwater	Project No. 219361.01	Site Photographs	Plate No. 5 of 6
	Walkover Date: 3 July 2023	Preliminary Site Investigation Lot 1 Beaudesert-Boonah Road, Bromelton Client: Cleanaway Operations Pty Ltd	



Photograph 11: View of one of the dams to the south of the site (SW1)



Photograph 12: View of second dam to the south of the site (SW2)

Douglas Partners Geotechnics / Environment / Groundwater	Project No. 219361.01	Site Photographs	Plate No. 6 of 6
	Walkover Date: 3 July 2023	Preliminary Site Investigation Lot 1 Beaudesert-Boonah Road, Bromelton Client: Cleanaway Operations Pty Ltd	

Appendix H

Data quality assessment

Data Quality Assessment

QAQC1 Data Quality Objectives

The investigation was prepared with reference to the seven step data quality objective (DQO) process which is provided in Appendix B, Schedule B2 of the *National Environment Protection (Assessment of Site Contamination) Measure* 1999 as amended 2013 (the 'NEPM'). The DQO process is outlined as follows:

- Stating the Problem;
- Identifying the Decision;
- Identifying Inputs to the Decision;
- Defining the Boundary of the Assessment;
- Developing a Decision Rule;
- Specifying Acceptable Limits on Decision Errors; and
- Optimising the Design for Obtaining Data.

The DQOs have been addressed within the report as shown in QAQC Table 1 below.

QAQC Table 1: Data Quality Objectives

Data Quality Objective	Report Section where Addressed
State the Problem	S1 Introduction
Identify the Decision	S1 Introduction (objective) S10 Discussion of Results
Identify Inputs to the Decision	S1 Introduction S1.1 Scope of Works S2 Site Information S8 Site Assessment Criteria S10 Discussion of Results
Define the Boundary of the Assessment	S2 Site information Drawing 1
Develop a Decision Rule	S8 Site Assessment Criteria
Specify Acceptable Limits on Decision Errors	S7 Sampling and Analysis Quality Plan S8 Site Assessment Criteria QA/QC Procedures and Results – Sections QAQC2
Optimise the Design for Obtaining Data	S1.1 Scope of Works S7 Sampling and Analysis Quality Plan Procedures and Results – Section QAQC2

QAQC2 Field and Laboratory Quality Control

The field and laboratory quality control (QC) procedures and results are summarised in QAQC Table 2 and QAQC Table 3. Reference should be made to the field work and analysis procedures in Section 7 and the laboratory results certificates for further details.

QAQC Table 2: Field QC

Item	Frequency	Acceptance Criteria	Achievement
Trip blank	One per field batch	<LOR	Yes
Trip spike	One per field batch	Four times LOR	Yes
Rinsate sample taken from dip meter	One per field batch	<LOR	No[1]
Intra-laboratory replicates	5% primary samples	RPD <30% inorganics), <50% (organics)	Yes[2]
Inter-laboratory replicates	5% primary samples	RPD <30% inorganics), <50% (organics)	Yes[2]

Notes:

1 The trace exceedance that was detected for copper (0.002 mg/L) above the LOR (0.001 mg/L) is not considered to have an impact on the water results. Therefore, the decontamination procedure is considered to be acceptable.

2 Qualitative assessment of RPD results overall; refer Section QAQC2.1 and Section QAQC2.2

LOR Laboratory Limit of Reporting

RPD Relative Percentage Difference

QAQC Table 3: Laboratory QC

Item	Frequency	Acceptance Criteria	Achievement
Analytical laboratory used	-	National Association of Testing Authorities (NATA) accreditation	Yes
Holding times	-	In accordance with the NEPM which references various Australian and international standards	Yes
Laboratory/ Reagent Blank	One per lab batch	<LOR	Yes
Laboratory duplicate	10% primary samples	<10 x LOR Any RPD 10-20 x LOR 0 – 50% >20 x LOR 0 – 30%	Yes
Matrix Spike	One per lab batch	Variable Results, Refer to Interpretive Quality Control Report	Yes
Surrogate Spike	Organics by GC	Variable Results, Refer to Interpretive Quality Control Report	Yes
Control Sample	One per lab batch	Variable Results, Refer to Interpretive Quality Control Report	Yes

Laboratory QC data is considered to be of sufficient quality to be acceptable for the assessment.

QAQC2.1 Intra-Laboratory Replicate

Intra-laboratory replicates were analysed as an internal check of the reproducibility within the primary laboratory (Eurofins) and as a measure of consistency of sampling techniques. The comparative results of analysis between original and intra-laboratory replicate samples are summarised in Tables QA1 and QA2 within the attached results tables. Note that, where both samples are below the LOR the difference and RPD has been given as zero. Where one sample is reported below the LOR, but a concentration is reported for the other, the LOR value has been used for calculation of the RPD for the less than the LOR sample. Calculated RPD values were within the acceptable range of ±30% for inorganic analytes and ±50% for organics, except for chromium and lead within the groundwater replicate pair. However, this is not considered to be significant because:

- The typically low actual differences in the concentration for the replicate pairs. High RPD values reflect the small differences between two small numbers;
- Replicates, rather than homogenised duplicates, were used to minimise the risk of possible volatile loss, hence greater variability can be expected; and
- All other QA/QC parameters met the DQIs.

Overall, the intra-laboratory replicates comparisons indicate that the sampling techniques were generally consistent and repeatable.

QAQC2.2 Inter-Laboratory Analysis

Inter-laboratory replicates were conducted as a check of the reproducibility of results between the primary laboratory (Eurofins) and the secondary laboratory (ALS) and as a measure of consistency of sampling techniques. The comparative results of analysis between original and inter-laboratory replicate samples are summarised in Tables QA1 and QA2 within the attached results tables. Note that, where both samples are below the LOR the difference and RPD has been given as zero. Where one sample is reported below the LOR, but a concentration is reported for the other, the LOR value has been used for calculation of the RPD for the less than the LOR sample. Several calculated RPD values were outside the acceptable range of ±30% for inorganic analytes and ±50% for organics, as shown in Table QA1 and QA2. However, this is not considered to impact the interpretation of the data because:

- The typically low actual differences in the concentration for some replicate pairs. High RPD values reflect the small differences between two small numbers;
- Replicates, rather than homogenised duplicates, were used to minimise the risk of possible volatile loss, hence greater variability can be expected; and
- All other QA/QC parameters met the DQIs.

Overall, inter-laboratory replicates comparisons indicate that the sampling technique was generally consistent and repeatable, and the two laboratories sampling handling and analytical methods are comparable.

QAQC3 Data Quality Indicators

The reliability of field procedures and analytical results was assessed against the following DQIs:

- Completeness – a measure of the amount of usable data from a data collection activity;
- Comparability – the confidence (qualitative) that data may be considered to be equivalent for each sampling and analytical event;
- Representativeness – the confidence (qualitative) of data representativeness of media present on-site;
- Precision – a measure of variability or reproducibility of data; and
- Accuracy – a measure of closeness of the data to the 'true' value.

The DQIs were assessed as outlined in QAQC Table 4 below.

QAQC Table 4: Data Quality Indicators

Data Quality Indicator	Method(s) of Achievement
Completeness	Preparation of a sampling plan and chain of custody (CoC) records; Laboratory sample receipt information received confirming receipt of samples intact and appropriateness of the CoC form; Samples analysed for a range of contaminants of potential concern (CoPC); Completion of CoC documentation; NATA endorsed laboratory certificates provided by the laboratory; and

	Satisfactory frequency and results for field and laboratory QC samples as discussed in Section QAQC2.
Comparability	Using appropriate techniques for sample recovery, storage and transportation, which were the same for the duration of the project; Works conducted by appropriately experienced and trained DP environmental scientists; Use of NATA accredited laboratories, with test methods the same or similar between laboratories; and Satisfactory results for field and laboratory QC samples.
Representativeness	Target media sampled; Sample numbers recovered and analysed are considered to be representative of the target media and complying with DQOs; Samples were extracted and analysed within recommended holding times; and Samples were analysed in accordance with the analysis request.
Precision	Generally acceptable RPD between original samples and replicates; and Satisfactory results for all other field and laboratory QC samples.
Accuracy	Satisfactory results for all field and laboratory QC samples.

Based on the above, it is considered that the DQIs have been complied with. As such, it is concluded that the field and laboratory test data obtained are reliable and useable for this assessment.

Appendix I

Borehole logs and explanatory notes

Symbols & Abbreviations

Douglas Partners

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	Lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

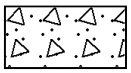
Symbols & Abbreviations

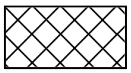
Graphic Symbols for Soil and Rock

General

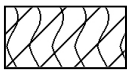

Asphalt

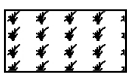

Road base

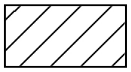

Concrete

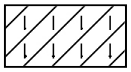

Filling

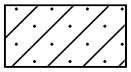
Soils


Topsoil

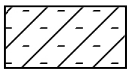

Peat

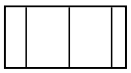

Clay

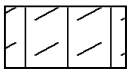

Silty clay

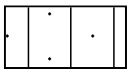

Sandy clay

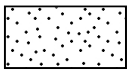

Gravelly clay

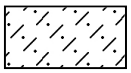

Shaly clay

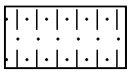

Silt


Clayey silt


Sandy silt

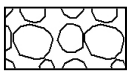

Sand

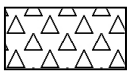

Clayey sand


Silty sand


Gravel

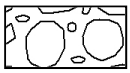

Sandy gravel


Cobbles, boulders

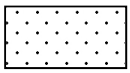

Talus

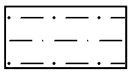
Sedimentary Rocks

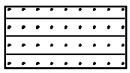

Boulder conglomerate

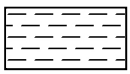

Conglomerate


Conglomeratic sandstone

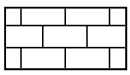

Sandstone


Siltstone

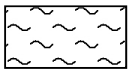

Laminite

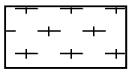

Mudstone, claystone, shale

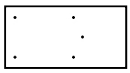

Coal


Limestone

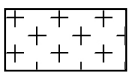
Metamorphic Rocks

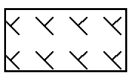

Slate, phyllite, schist

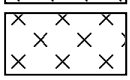

Gneiss

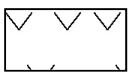

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are generally based on Australian Standard AS1726:2017, Geotechnical Site Investigations. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

The soil group symbol classifications are given as follows based on two major soil divisions:

- Coarse-grained soils
- Fine-grained soils

Major Divisions				Description	
				Group Symbol*	Typical Name
COARSE-GRAINED SOILS	More than 65% by dry mass, (excluding that larger than 63 mm) is greater than 0.075 mm	GRAVEL	More than 50% of coarse grains are greater than 2.36 mm	GW	Well graded gravels and gravel-sand mixtures, little or no fines.
				GP	Poorly graded gravels and gravel-sand mixtures, little or no fines.
		GRAVELLY SOILS		GM	Silty gravels, gravel-sand-silt mixtures.
				GC	Clay gravels, gravel-sand-clay mixtures.
		SAND	More than 50% of coarse grains are less than 2.36 mm	SW	Well graded sands and gravelly sands, little or no fines.
				SP	Poorly graded sands and gravelly sands, little or no fines.
		SANDY SOILS		SM	Silty sand, sand-silt mixtures.
				SC	Clayey sands, sand-clay mixtures.

* For coarse grained soils where the fines content is between 5% and 12%, the soil shall be given a dual classification eg GP-GM.

FINE-GRAINED SOILS	More than 35% by dry mass, (excluding that larger than 63 mm) is less than 0.075 mm	Liquid Limit less than 35%	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity
		35% <LL< 50%	CI	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		Liquid Limit greater than 50%	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity.
			Pt	Peat muck and other highly organic soils.

Soil Descriptions

Douglas Partners

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	19 - 63
Medium gravel	6.7 - 19
Fine gravel	2.36 – 6.7
Coarse sand	0.6 - 2.36
Medium sand	0.21 - 0.6
Fine sand	0.075 - 0.21

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

The proportions of secondary constituents of soils are described as follows:

In fine grained soils (>35% fines)

Term	Proportion of sand or gravel	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	>30%	Sandy Clay
With	15 – 30%	Clay with sand
Trace	0 - 15%	Clay, trace sand

In coarse grained soils (>65% coarse)
- with clays or silts

Term	Proportion of fines	Example
And	Specify	Sand (70%) and Clay (30%)
Adjective	>12%	Clayey Sand
With	5 - 12%	Sand with clay
Trace	0 - 5%	Sand, trace clay

In coarse grained soils (>65% coarse)
- with coarser fraction

Term	Proportion of coarser fraction	Example
And	Specify	Sand (60%) and Gravel (40%)
Adjective	>30%	Gravelly Sand
With	15 - 30%	Sand with gravel
Trace	0 - 15%	Sand, trace gravel

The presence of cobbles and boulders shall be specifically noted by beginning the description with ‘Mix of Soil and Cobbles/Boulders’ with the word order indicating the dominant first and the proportion of cobbles and boulders described together.

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	VS	<12
Soft	S	12 - 25
Firm	F	25 - 50
Stiff	St	50 - 100
Very stiff	VSt	100 - 200
Hard	H	>200
Friable	Fr	-

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	Density Index (%)
Very loose	VL	<15
Loose	L	15-35
Medium dense	MD	35-65
Dense	D	65-85
Very dense	VD	>85

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Extremely weathered material – formed from in-situ weathering of geological formations. Has soil strength but retains the structure or fabric of the parent rock;
- Alluvial soil – deposited by streams and rivers;
- Estuarine soil – deposited in coastal estuaries;
- Marine soil – deposited in a marine environment;
- Lacustrine soil – deposited in freshwater lakes;
- Aeolian soil – carried and deposited by wind;
- Colluvial soil – soil and rock debris transported down slopes by gravity;
- Topsoil – mantle of surface soil, often with high levels of organic material.
- Fill – any material which has been moved by man.

Moisture Condition – Coarse Grained Soils

For coarse grained soils the moisture condition should be described by appearance and feel using the following terms:

- Dry (D) Non-cohesive and free-running.
- Moist (M) Soil feels cool, darkened in colour.
  Soil tends to stick together.
  Sand forms weak ball but breaks easily.
- Wet (W) Soil feels cool, darkened in colour.
  Soil tends to stick together, free water forms when handling.

Moisture Condition – Fine Grained Soils

For fine grained soils the assessment of moisture content is relative to their plastic limit or liquid limit, as follows:

- 'Moist, dry of plastic limit' or 'w <PL' (i.e. hard and friable or powdery).
- 'Moist, near plastic limit' or 'w ≈ PL (i.e. soil can be moulded at moisture content approximately equal to the plastic limit).
- 'Moist, wet of plastic limit' or 'w >PL' (i.e. soils usually weakened and free water forms on the hands when handling).
- 'Wet' or 'w ≈LL' (i.e. near the liquid limit).
- 'Wet' or 'w >LL' (i.e. wet of the liquid limit).

Rock Strength

Rock strength is defined by the Unconfined Compressive Strength and it refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects.

The Point Load Strength Index $Is_{(50)}$ is commonly used to provide an estimate of the rock strength and site specific correlations should be developed to allow UCS values to be determined. The point load strength test procedure is described by Australian Standard AS4133.4.1-2007. The terms used to describe rock strength are as follows:

Strength Term	Abbreviation	Unconfined Compressive Strength MPa	Point Load Index * $Is_{(50)}$ MPa
Very low	VL	0.6 - 2	0.03 - 0.1
Low	L	2 - 6	0.1 - 0.3
Medium	M	6 - 20	0.3 - 1.0
High	H	20 - 60	1 - 3
Very high	VH	60 - 200	3 - 10
Extremely high	EH	>200	>10

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$. It should be noted that the UCS to $Is_{(50)}$ ratio varies significantly for different rock types and specific ratios should be determined for each site.

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	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	XW	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible
Highly weathered	HW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately weathered	MW	The whole of the rock material is discoloured , usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly weathered	SW	Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh	FR	No signs of decomposition or staining.
Note: If HW and MW cannot be differentiated use DW (see below)		
Distinctly weathered	DW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching or may be decreased due to deposition of weathered products in pores.

Rock Descriptions

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with occasional fragments
Fractured	Core lengths of 30-100 mm with occasional shorter and longer sections
Slightly Fractured	Core lengths of 300 mm or longer with occasional sections of 100-300 mm
Unbroken	Core contains very few fractures

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or stronger. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 89.0 AHD
EASTING: 492488
NORTHING: 6905509
DIP/AZIMUTH: 90°/--

BORE No: 1
PROJECT No: 219361.00
DATE: 29/11/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
89	0.1	TOPSOIL Sandy CLAY (CI): medium plasticity, brown, fine sand, w<PL, stiff, grass roots		D	0.0				
				D	0.1				
	0.5	Silty CLAY (CH): high plasticity, red-brown, trace fine sand, w~PL, stiff (residual)		D	0.4				
		- becoming brown mottled grey, grading to sandy clay			0.5				
					0.6				
		Sandy CLAY (CI): medium plasticity, brown with grey and orange-brown, fine sand, w~PL, stiff (residual)		U_{50}					
88	1	- becoming pale grey and orange-brown, stiff		D	0.9				1
					1.0				
				S			5,8,6 N = 14		
	1.5				1.45				
		Silty CLAY (CH): high plasticity, pale grey-brown and orange-brown, trace fine sand, w>PL, very stiff (residual)		D	1.5				
87	2				2.0				2
		- medium plasticity, w~PL		D					
					2.5				
				S			8,10,15 N = 25		
86	3	3.0			2.95				3
		Bore discontinued at 3.0m depth - Limit of investigation							
85	4								4
84	5								5
83	6								6
82	7								7

RIG: Christie ute rig **DRILLER:** Geo-Serve **LOGGED:** NS **CASING:** Uncased

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 94.7 AHD
EASTING: 492730
NORTHING: 6905449
DIP/AZIMUTH: 90°/--

BORE No: 2
PROJECT No: 219361.00
DATE: 29/11/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
94	0.1	TOPSOIL Sandy CLAY (CI-CH): medium to high plasticity, grey-brown and brown, w>PL, stiff, grass roots		D	0.0				
				D	0.2				
		Silty CLAY (CH): high plasticity, grey-brown with orange-brown, w>PL, stiff (residual)			0.5				
				U_{50}	0.6				
93	1.0	Sandy CLAY (CH): high plasticity, brown, fine to medium sand, trace coarse sand and fine gravel, w<PL, very stiff (residual)		S	1.0		6,10,13 N = 23		
		- becoming brown mottled orange-brown			1.45				
				D	1.5				
	2	- grading to medium plasticity, w~PL		D	2.0				
92		- becoming hard		S	2.5		15,19,22 N = 41		
	3.0	Bore discontinued at 3.0m depth - Limit of investigation			2.95				
91	4								
90	5								
89	6								
88	7								
87									

Dynamic Penetrometer Test (blows per 100mm): 5, 10, 15, 20

RIG: Christie ute rig **DRILLER:** Geo-Serve **LOGGED:** NS **CASING:** Uncased

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 81.3 AHD
EASTING: 492888
NORTHING: 6905379
DIP/AZIMUTH: 90°/--

BORE No: 3
PROJECT No: 219361.00
DATE: 29/11/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
81	0.1	TOPSOIL Sandy CLAY (CH): high plasticity, grey-brown, fine sand, w~PL, stiff, grass roots		D	0.0				
				D	0.1				
		Silty CLAY (CH): high plasticity, red-brown, trace fine sand, w>PL, stiff (residual)			0.3				
		- becoming brown and orange-brown		D	0.4				
					0.6				
				U_{50}	0.8				
	0.9			D	0.9				
80	1	Sandy CLAY (CI): medium plasticity, brown with pale red-brown grey and orange-brown, fine sand, w~PL, very stiff			1.0				
		- becoming hard		S			9,13,17 N = 30		
					1.45				
					1.5				
				D					
79	2				2.0				
				D					
					2.5				
				S			9,13,18 N = 31		
	2.8								
78	3	Silty CLAY (CI-CH): medium to high plasticity, grey with dark grey and orange-brown, trace fine sand, w~PL, hard (residual)			2.95				
	3.0	Bore discontinued at 3.0m depth - Limit of investigation							
77	4								
76	5								
75	6								
74	7								

RIG: Christie ute rig **DRILLER:** Geo-Serve **LOGGED:** NS **CASING:** Uncased

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 97.5 AHD
EASTING: 492545
NORTHING: 6905360
DIP/AZIMUTH: 90°/--

BORE No: 4
PROJECT No: 219361.00
DATE: 29/11/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
97	0.1	TOPSOIL Sandy CLAY (CI): medium plasticity, brown, fine sand, w<PL, firm, grass roots		D	0.0				
					0.1				
		Silty CLAY (CH): high plasticity, brown, grey and orange-brown, trace fine sand, w>PL, stiff (residual)		D	0.3				
					0.5				
				D	0.8				
96	1	- trace fine sand, w~PL		S	1.0		4,6,9 N = 15		
					1.45				
				D	1.5				
95	2.0	Sandy CLAY (CI-CH): medium to high plasticity, brown with orange-brown, w~PL, very stiff (residual)			2.0				
				D	2.3				
		- becoming hard, trace fine gravel			2.5				
		- becoming pale grey, brown and orange-brown		S			8,15,19 N = 34		
94	3.0	Bore discontinued at 3.0m depth - Limit of investigation			2.95				
93	4								
92	5								
91	6								
90	7								

RIG: Christie ute rig **DRILLER:** Geo-Serve **LOGGED:** NS **CASING:** Uncased

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 96.4 AHD
EASTING: 492425
NORTHING: 6905238
DIP/AZIMUTH: 90°/--

BORE No: 5
PROJECT No: 219361.00
DATE: 29/11/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
96	0.05	TOPSOIL Sandy CLAY (CL): low plasticity, brown, fine sand, w~PL, very stiff, grass roots		D	0.0				
				D	0.1				
		Silty CLAY (CH): high plasticity, red-brown, trace fine sand, w~PL, very stiff (residual)		D	0.3				
	0.5	- localised stiff band			0.4				
		Sandy CLAY (CI): medium plasticity, brown with red-brown and pale grey, w~PL, very stiff (residual)			0.5				
	1	- becoming hard		D	1.0				
95				S			11, 18, 30/140mm		
		- becoming low plasticity, w<PL (extremely weathered sandstone)			1.44				
					1.5				
				D					
	2				2.0				
		- fine to coarse sand, trace fine gravel			2.1				
94				D					
					2.5				
				S			8, 23, 40/115mm		
	3				2.92				
	3.0	Bore discontinued at 3.0m depth - Limit of investigation							
93									
92	4								
91	5								
90	6								
89	7								

RIG: Christie ute rig **DRILLER:** Geo-Serve **LOGGED:** NS **CASING:** Uncased

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 84.7 AHD
EASTING: 492671
NORTHING: 6905263
DIP/AZIMUTH: 90°/--

BORE No: 6
PROJECT No: 219361.00
DATE: 29/11/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
84	0.1	TOPSOIL Sandy CLAY (CI): medium plasticity, brown, fine sand, w<PL, firm, grass roots		D	0.1				
		Silty CLAY (CH): high plasticity, red-brown, trace fine sand, w>PL, stiff (residual)		D	0.4				
		- becoming brown with orange-brown, trace fine sand		D	0.5				
83	1.0	Sandy CLAY (CH): high plasticity, brown with orange-brown, fine sand, w~PL, stiff to very stiff (residual)		S	1.0		5,6,10 N = 16		
		- becoming brown with orange-brown and pale grey			1.45				
		- becoming medium plasticity		D	1.5				
	2			D	2.0				
82				S	2.5		8,12,16 N = 28		
	3.0	Bore discontinued at 3.0m depth - Limit of investigation			2.95				
81	4								
80	5								
79	6								
78	7								
77									

RIG: Christie ute rig **DRILLER:** Geo-Serve **LOGGED:** NS **CASING:** Uncased

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 97.7 AHD
EASTING: 492509
NORTHING: 6905363
DIP/AZIMUTH: 90°/--

BORE No: 7
PROJECT No: 219361.00
DATE: 25/5/2023
SHEET 1 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
97	0.2	Topsoil Sandy CLAY (CL): low plasticity, dark brown, fine to medium sand, w~PL, estimated stiff, grass roots							E			
		Silty CLAY (CH): high plasticity, brown, w>PL, very stiff (residual)							E D			
	1	- brown mottled orange-brown and red-brown, with fine to medium sand, w<PL							S			3,5,13 N = 18
									D			
96									E			
		- pale brown-grey mottled orange-brown and red-brown							D			
	2								E			
		- hard							D			
									S			17,30/140 refusal
95												
	3											
94									S			16,16,21 N = 37
	4											
93												
	5								S			6,21,25 N = 46
92	5.8	Silty CLAY (CI-CH): medium to high plasticity, pale grey mottled orange-brown, w~PL, hard (residual)										
	6											
91									S			8,17,22 N = 39
	7											
90	7.8											

RIG: Hydrapower Scout 3 **DRILLER:** Ground Test **LOGGED:** NS **CASING:** HWT to 2.5m

TYPE OF BORING: 110mm solid filght auger to 2.5m, washboring to 12.62m, then NMLC to limit of investigation

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 97.7 AHD
EASTING: 492509
NORTHING: 6905363
DIP/AZIMUTH: 90°/--

BORE No: 7
PROJECT No: 219361.00
DATE: 25/5/2023
SHEET 2 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
89	9	Silty CLAY (CH): high plasticity, dark red brown with pale grey and orange-brown, trace fine to coarse sand, w~PL, hard (residual) *(from 7.8m depth)*							S			8,14,19 N = 33
88	9.7	MUDSTONE: highly weathered, inferred very low strength, pale grey mottled dark red brown and orange-brown (Walloon Coal Measures)							S			28,30/75 refusal
87	10											
86	11	- inferred carbonaceous interbed							S			12,20,30/120 refusal
85	12											
	12.62								S			30/120 refusal
84	13	MUDSTONE: pale grey and orange-brown, low strength, moderately weathered, fractured (Walloon Coal Measures)						12.81m: J, 10°, pl, ro 12.91m: J, 40°, cu, ro 12.98m: DB 13.02m: J, 10°, pl, ro 13.19m: J, 20°, pl, ro 13.6m: J, 5°, pl, ro 13.84m: J, 40°, pl, ro 13.95m: J, 30°, pl, ro 14.1m: J, 50°, ir, sm 14.19m: J, 40°, pl, sm	C	97	68	PL(A) = 0.25 PL(D) = 0.11 PL(A) = 0.15 PL(D) = 0.12 PL(A) = 0.19 PL(D) = 0.16
83	14											
	14.6	CORE LOSS (inferred silty clay)						14.6m: CORE LOSS: 1250mm	C	58	40	
82	15											
	15.85											

RIG: Hydrapower Scout 3 **DRILLER:** Ground Test **LOGGED:** NS **CASING:** HWT to 2.5m

TYPE OF BORING: 110mm solid filght auger to 2.5m, washboring to 12.62m, then NMLC to limit of investigation

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 97.7 AHD
EASTING: 492509
NORTHING: 6905363
DIP/AZIMUTH: 90°/--

BORE No: 7
PROJECT No: 219361.00
DATE: 25/5/2023
SHEET 3 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering	Graphic Log	Rock Strength	Water	Fracture Spacing (m)	Discontinuities (B - Bedding, J - Joint, S - Shear, F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
81	17	MUDSTONE: brown, very low to low strength, highly to moderately weathered, highly fractured to fractured (Walloon Coal Measures) *(from 15.85m depth)*	EW HW MW SW FS FR		Ex Low Very Low Low Medium High Very High Ex High		0.01 0.05 0.10 0.50 1.00	16.18m: J, 15°, pl, sm 16.36m: J, 60°, pl, sm 16.47m: J, 55°, pl, sm 16.59m: J, 70°, pl, sm 16.86m: J, 0°, pl, sm 17.07m: DB 17.12m: J, 10°, pl, sm 17.15m: J, 40°, pl, sm 17.24m: J, 10°, pl, sm	C	58	40	PL(A) = 0.15 PL(D) = 0.06
80	18								C	100	100	PL(A) = 0.12 PL(D) = 0.12
79	18.36	SANDSTONE/MUDSTONE: low strength, moderately weathered, brown, grey and orange-brown, fine grained sand, slightly fractured (Walloon Coal Measures)						18.04m: J, 10°, pl, sm, qtz inf 18.22m: J, 10°, pl, sm 18.28m: J, 10°, pl, sm 18.43m: J, 45°, pl, ro 18.89m: J, 40°, pl, ro 19.21m: J, 30°, pl, ro	C	100	88	PL(A) = 0.19 PL(D) = 0.15 PL(A) = 0.18 PL(D) = 0.21
78	19.65	MUDSTONE: moderately weathered, low strength, dark brown and orange-brown, fractured (Walloon Coal Measures)						19.57m: J, 10°, pl, ro 19.75m: J, 0°, pl, ro 19.85m: J, 20°, pl, ro				
77	20 20.0	Bore discontinued at 20.0m depth - Limit of investigation										
76	21											
75	22											
74	23											

RIG: Hydrapower Scout 3 **DRILLER:** Ground Test **LOGGED:** NS **CASING:** HWT to 2.5m

TYPE OF BORING: 110mm solid filght auger to 2.5m, washboring to 12.62m, then NMLC to limit of investigation

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 93.8 AHD
EASTING: 492531
NORTHING: 6905463
DIP/AZIMUTH: 90°/--

BORE No: 8
PROJECT No: 219361.00
DATE: 29/5/2023
SHEET 1 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
93	0.1	Topsoil Sandy CLAY (CL): low plasticity, dark brown, fine to medium sand, with rootlets, w~PL, estimated stiff, grass roots							E			
		Silty CLAY (CH): high plasticity, brown, w>PL, very stiff (residual)							E			
									D			
									E			
									S			2,3,5 N = 8
	1	- w~PL, brown mottled grey and orange-brown							E			
									D			
92									E			
									D			
	2	- hard							S			10,23,30 N = 53
91												
	3											
		- pale grey mottled orange-brown and purple							S			11,23,30 N = 53
90												
	4											
89												
	5	- relict rock structure, inferred extremely weathered mudstone							S			22,21,27 N = 48
88												
	6											
	6.5	MUDSTONE: highly weathered, inferred very low strength, brown and orange-brown (Walloon Coal Measures)							S			30/130 refusal
87												
	7											
86								7.5m: Unless otherwise stated discontinuities are B, 10-40°, pl, sm, cly, co				

RIG: Hydrapower Scout 3 **DRILLER:** Ground Test **LOGGED:** NS **CASING:** HWT to 2.5m

TYPE OF BORING: 110mm solid filght auger to 2.5m, washboring to 8.1m, then NMLC to limit of investigation

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 93.8 AHD
EASTING: 492531
NORTHING: 6905463
DIP/AZIMUTH: 90°/--

BORE No: 8
PROJECT No: 219361.00
DATE: 29/5/2023
SHEET 2 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
	8.1	Core loss						8.1m: CORE LOSS: 200mm	S			30/100 refusal
85	8.3	MUDSTONE: highly weathered, very low to low strength, brown and orange-brown, highly fractured (Walloon Coal Measures)						8.45m: J, 40°, pl, sm 8.52m: J, 30°, pl, sm 8.6m: J, 10°, pl, sm				
	9	- moderately weathered zone to 9m										PL(A) = 0.16 PL(D) = 0.09
	9.24	SANDSTONE: highly weathered, very low strength, grey-brown, fine to medium grained, fractured (Walloon Coal Measures)							C	90	17	PL(A) = 0.12 PL(D) = 0.02
84	9.55	MUDSTONE: highly weathered, very low strength, brown, highly fractured (Walloon Coal Measures)										
	10	- highly to moderately weathered, low strength zone to 10m										
	10.26	SANDSTONE: moderately weathered, very low strength, grey-brown and orange-brown, fractured (Walloon Coal Measures)						10.24m: J, 30°, pl, sm 10.35m: J, 30°, pl, ro 10.59m: J, 30°, pl, ro 10.7m: J, 30°, pl, ro				PL(A) = 0.04 PL(D) = 0.09
83	11							10.92m: J, 25°, pl, ro 10.95m: J, 40°, pl, ro 11.04m: J, 40°, pl, ro 11.09m: J, 40°, pl, ro 11.17m: J, 40°, pl, ro 11.27m: J, 40°, pl, ro 11.43m: J, 40°, pl, ro	C	100	0	
	11.7	MUDSTONE: moderately weathered, low strength, brown, fractured (Walloon Coal Measures)						11.53m: J, 30°, pl, ro 11.74m: J, 20°, pl, ro 11.79m: J, 0°, pl, ro				PL(A) = 0.16 PL(D) = 0.18
82	12	- highly to moderately weathered						12.33m: J, 20°, pl, ro 12.38m: J, 30°, pl, ro				PL(A) = 0.23 PL(D) = 0.29
		- dark brown, highly weathered, very low to low strength to 13m						12.62m: J, 5°, pl, ro 12.65m: J, 10°, pl, ro 12.7m: J, 60°, pl, ro				
81	13							13.08m: J, 40°, ir, sm 13.48m: J, 10°, pl, sm	C	87	31	PL(A) = 0.11 PL(D) = 0.01
	13.6	CORE LOSS						13.6m: CORE LOSS: 400mm				
80	14	14.0 MUDSTONE: highly to moderately weathered, very low strength, brown, highly fractured (Walloon Coal Measures)						14.1m: J, 40°, pl, sm 14.15m: B, 0°, pl, sm 14.36m: J, 0°, un, sm 14.4m: J, 40°, pl, sm 14.47m: J, 0°, pl, sm				PL(A) = 0.08 PL(D) = 0.08
	14.7	CORE LOSS						14.5m: J, 25°, cu, sm 14.54m: J, 0°, pl, sm 14.58m: J, 30°, pl, sm 14.7m: CORE LOSS: 530mm				
79	15											
	15.23	MUDSTONE: highly weathered, very low strength, brown and orange-brown, highly fractured (Walloon Coal Measures)						15.61m: J, 30°, pl, sm	C	82	47	
78		- dark brown										
	16.0											

RIG: Hydrapower Scout 3 **DRILLER:** Ground Test **LOGGED:** NS **CASING:** HWT to 2.5m

TYPE OF BORING: 110mm solid filght auger to 2.5m, washboring to 8.1m, then NMLC to limit of investigation

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 93.8 AHD
EASTING: 492531
NORTHING: 6905463
DIP/AZIMUTH: 90°/--

BORE No: 8
PROJECT No: 219361.00
DATE: 29/5/2023
SHEET 3 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
77		META-MUDSTONE: highly to moderately weathered, very low strenght, grey mottled pale grey and orange-brown, fractured (Walloon Coal Measures)						16.09m: J, 0°, un, sm 16.19m: J, 30°, pl, sm 16.27m: J, 30°, pl, sm 16.29m: J, 30°, pl, sm 16.32m: J, 30°, pl, sm 16.39m: J, 30°, pl, sm 16.52m: J, 35°, pl, sm 16.62m: J, 30°, pl, sm 16.78m: J, 20°, pl, sm 16.84m: J, 20°, pl, sm 16.94m: J, 0°, pl, sm 17.03m: J, 40°, un, sm 17.07m: J, 0°, pl, sm	C	82	47	PL(A) = 0.02 PL(D) = 0.06
	17	- yellow-brown										
		- high strength, slightly weathered										PL(A) = 1.19 PL(D) = 1.47
76		- highly to moderately weathered, very low to low strength										PL(A) = 0.17 PL(D) = 0.09
	18 18.0	CORE LOSS (inferred silty clay)						17.84m: J, 0°, un, ro 18m: CORE LOSS: 2000mm	C	13	13	
75	19											
74	20 20.0	Bore discontinued at 20.0m depth - Limit of investigation										
73	21											
72	22											
71	23											
70												

RIG: Hydrapower Scout 3 **DRILLER:** Ground Test **LOGGED:** NS **CASING:** HWT to 2.5m

TYPE OF BORING: 110mm solid filght auger to 2.5m, washboring to 8.1m, then NMLC to limit of investigation

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 95.5 AHD
EASTING: 492657
NORTHING: 6905430
DIP/AZIMUTH: 90°/--

BORE No: 9
PROJECT No: 219361.00
DATE: 24/5/2023
SHEET 1 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
95	0.1	TOPSOIL Silty CLAY (CL): low plasticity, dark brown, fine to medium sand, w~PL, estimated stiff							E			
									E			
									D			
	0.7	Silty CLAY (CI-CH): medium to high plasticity, brown and dark brown, fine to medium sand, trace fine to medium gravel, estimated stiff (probably fill)							S			9,7,15 N = 22
94	1	Sandy CLAY (CL-CI): low to medium plasticity, brown mottled orange-brown and pale grey, fine to medium sand, w<PL, very stiff (residual)							E D			
	2	- hard, inferred extremely weathered sandstone							E E			
									S			20, 30/110mm
93												
	3											
92									S			12, 30/130mm
	4											
91												
	5	5.0 SANDSTONE: highly weathered, inferred very low strength, brown mottled orange-brown and pale grey-brown, fine to medium grained (Walloon Coal Measures)							S			30/120mm
90												
	6											
89									S			30/140mm
	7											
88												

RIG: Hydrapower Scout 3 **DRILLER:** Ground Test **LOGGED:** NS **CASING:** HWT to 2.5m

TYPE OF BORING: 110mm solid filght auger to 2.5m, washboring to 9.5m, then NMLC to limit of investigation

WATER OBSERVATIONS: No free groundwater observed during augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 95.5 AHD
EASTING: 492657
NORTHING: 6905430
DIP/AZIMUTH: 90°/--

BORE No: 9
PROJECT No: 219361.00
DATE: 24/5/2023
SHEET 2 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
87	9	SANDSTONE (Walloon Coal Measures) *(continued)*						9m: Unless otherwise stated discontinuities are J, 10-40°, pl, ro, cly, co	S			24, 30/110mm
86	9.5	SANDSTONE: moderately weathered, medium strength, pale grey and orange-brown, fine to medium grained, slightly fractured (Walloon Coal Measure)							S			30/90mm PL(A) = 0.41 PL(D) = 0.36
	10	- highly weathered zone, low to medium strength to 10.12m - moderately weathered, high strength							C	100	81	PL(A) = 1.44 PL(D) = 1.56
85	11	- moderately weathered, very low to low strength, orange-brown mottled black and pale grey, fine to medium grained										PL(A) = 0.1 PL(D) = 0.08
84		- highly weathered zone from 11.82m							C	100	74	
	12											PL(A) = 0.09 PL(D) = 0.12
83								12.53m: B, 10°, pl, ro				
	13											
82												PL(A) = 0.22 PL(D) = 0.22
	14	- grey brown with orange-brown, fine grained						13.99m: J, 50°, pl, sm				PL(A) = 0.09 PL(D) = 0.25
81	14.5	META-MUDSTONE: moderately weathered, medium to high strength, brown, highly fractured (Walloon Coal Measure)						14.5m: J, 40°, pl, ro, cly inf 14.53m: J, 10°, pl, ro, cly inf 14.79m: J, 70°, pl, ro	C	100	64	
	15											
80								15.69m: J, 15°, pl, ro, sny cly inf 15.77m: J, 30°, st, ro				PL(A) = 1.59 PL(D) = 1.88

RIG: Hydrapower Scout 3 **DRILLER:** Ground Test **LOGGED:** NS **CASING:** HWT to 2.5m

TYPE OF BORING: 110mm solid filght auger to 2.5m, washboring to 9.5m, then NMLC to limit of investigation

WATER OBSERVATIONS: No free groundwater observed during augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 95.5 AHD
EASTING: 492657
NORTHING: 6905430
DIP/AZIMUTH: 90°/--

BORE No: 9
PROJECT No: 219361.00
DATE: 24/5/2023
SHEET 3 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
79	17	META-MUDSTONE (Walloon Coal Measure) *(continued)* - low to medium strength, fractured						15.87m: J, 30°, pl, ro 16.45m: J, 20°, cu, ro 16.51m: J, 0°, cu, ro 16.86m: B, 5°, pl, ro				PL(A) = 0.24 PL(D) = 0.35
78	17.1	SANDSTONE: moderately weathered, low to medium strength, grey-brown mottled orange-brown, fine grained, slightly fractured (Walloon Coal Measure)							C	100	77	PL(A) = 0.2 PL(D) = 0.44
77	18											PL(A) = 0.25 PL(D) = 0.26
76	19	- moderately to slightly weathered, medium strength, pale grey mottled orange-brown						18.56m: J, 35°, pl, ro, cly co 19.03m: B, 0°, pl, ro 19.45m: B, 0°, pl, ro 19.6m: J, 70°, un, ro 19.73m: 10°, ir, ro 19.76m: J, 20°, pl, ro	C	100	80	PL(A) = 0.72 PL(D) = 0.84
75	20 20.0	Bore discontinued at 20.0m depth - Limit of investigation										
74	21											
73	22											
72	23											

RIG: Hydrapower Scout 3 **DRILLER:** Ground Test **LOGGED:** NS **CASING:** HWT to 2.5m

TYPE OF BORING: 110mm solid filght auger to 2.5m, washboring to 9.5m, then NMLC to limit of investigation

WATER OBSERVATIONS: No free groundwater observed during augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 85.4 AHD
EASTING: 492473
NORTHING: 6905556
DIP/AZIMUTH: 90°/--

BORE No: 10
PROJECT No: 219361.00
DATE: 29/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
85	0.2	TOPSOIL Sandy CLAY (CI): medium plasticity, brown, fine sand, w~PL, very stiff, grass roots							
		Silty CLAY (CH): high plasticity, brown and grey-brown, fine to medium sand, w>PL, hard (residual)		D	0.5				
		- very stiff							
	1	- brown, trace fine sand, w~PL, hard		D	1.0				
84				S			9,16,27 N = 43		
					1.45				
	2								
83	2.41			S	2.3		30/110mm		
		Bore discontinued at 2.41m depth - Auger refusal, inferred very low to low strength			2.41				
	3								
82									
	4								
81									
	5								
80									
	6								
79									
	7								
78									

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 94.0 AHD
EASTING: 492649
NORTHING: 6905497
DIP/AZIMUTH: 90°/--

BORE No: 11
PROJECT No: 219361.00
DATE: 29 - 30/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
94	0.0	TOPSOIL Sandy CLAY (CI): low plasticity, dark brown, fine sand, w~PL, very stiff, grass roots							
	0.3	Silty CLAY (CI-CH): medium to high plasticity, red-brown, w<PL, very stiff (residual)							
	0.6	Sandy CLAY (CL): low plasticity, pale brown, fine sand, trace gravel, w<PL, very stiff to hard (residual)							
93	1				1.0				1
				S			25, 24, 30/70mm		
	1.3	SANDSTONE: highly weathered, inferred very low strength, grey-brown (Walloon Coal Measures)			1.45				
				S	1.6		30/130mm		
	1.73	Bore discontinued at 1.73m depth - Auger refusal, inferred low strength			1.73				
92	2								2
91	3								3
90	4								4
89	5								5
88	6								6
87	7								7

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** YB/NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 95.1 AHD
EASTING: 492767
NORTHING: 6905456
DIP/AZIMUTH: 90°/--

BORE No: 12
PROJECT No: 219361.00
DATE: 29/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
95	0.2	TOPSOIL Sandy CLAY (CI): medium plasticity, brown and grey-brown, fine to medium sand, w~PL, stiff, grass roots							
		Silty CLAY (CH): high plasticity, grey-brown, w>PL, stiff (residual)							
	0.6	- very stiff							
		Silty CLAY (CI-CH): medium to high plasticity, dark brown mottled orange-brown, w<PL, hard (residual)							
94	1	- very stiff			1.0				1
				S			6,11,11 N = 22		
				D	1.45				
					1.5				
93	2			D	2.0				2
	2.5				2.5				
		Sandy CLAY (CI): medium plasticity, grey-brown mottled orange-brown, fine sand, w<PL, very stiff		S			6,10,11 N = 21		
92	3				2.95				3
91	4				4.0				4
	4.0	MUDSTONE/SANDSTONE: highly weathered, inferred very low strength, brown mottled orange-brown (Walloon Coal Measures)		S			30/140mm		
					4.14				
90	5			S	5.0		30/130mm		5
	5.13	Bore discontinued at 5.13m depth - Auger refusal							
89	6								6
88	7								7

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 89.4 AHD
EASTING: 492445
NORTHING: 6905428
DIP/AZIMUTH: 90°/--

BORE No: 13
PROJECT No: 219361.00
DATE: 29/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
89	0.2	TOPSOIL Sandy CLAY (CI): medium plasticity, brown, fine to medium sand, w~PL, stiff, grass roots							
		Silty CLAY (CH): high plasticity, brown, w>PL, firm (residual)		D	0.5				
		- very stiff							
	1	- trace fine to medium sand and gravel		D	1.0				
		- hard		S			10,14,18 N = 32		
88					1.45				
	2								
	2.0				2.0				
	2.1	SILTSTONE: brown and orange-brown, inferred very low strength, highly weathered (Walloon Coal Measures)		S	2.1		30/100mm		
87		Bore discontinued at 2.1m depth - Auger refusal							
	3								
86									
	4								
85									
	5								
84									
	6								
83									
	7								
82									

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 94.9 AHD
EASTING: 492619
NORTHING: 6905359
DIP/AZIMUTH: 90°/--

BORE No: 14
PROJECT No: 219361.00
DATE: 31/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
94	0.3	TOPSOIL Sandy CLAY (CI): medium plasticity, brown, fine to coarse sand, w~PL, very stiff, grass roots							
		Silty CLAY (CI): medium plasticity, grey-brown and grey, trace fine sand, w~PL, very stiff (residual)		D	0.5				
		- hard							
	1	- very stiff		D	1.0				
				S			5,9,12 N = 21		
					1.45				
93	2	- brown-grey mottled orange-brown							
		- grey-brown mottled black, grey and orange-brown, w<PL			2.5				
				S			5,7,16 N = 23		
92	3				2.95				
				D	3.1				
91	4	- hard			4.0				
				S			10,13,27 N = 40		
					4.45				
90	5			D	5.0				
	5.2	SILTSTONE: grey-brown mottled orange-brown, inferred very low strength, highly weathered (Walloon Coal Measures)							
				S	5.5		12, 28, 30/40mm		
					5.64				
89	6								
88	7				7.0				
				S			15, 30/60mm		
	7.21	Bore discontinued at 7.21m depth - Limit of investigation			7.21				
87									

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 89.1 AHD
EASTING: 492771
NORTHING: 6905358
DIP/AZIMUTH: 90°/--

BORE No: 15
PROJECT No: 219361.00
DATE: 30/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
89	0.1	TOPSOIL Sandy CLAY (CI): medium plasticity, dark brown, fine to medium sand, w~PL, soft, grass roots		E	0.0 0.1		Asbestos sample		
		Silty CLAY (CH): high plasticity, brown mottled grey-brown, grey and orange-brown, with fine to medium sand, w<PL, stiff (residual)		E D	0.4 0.5				
		- w~PL, very stiff							
88	1			E	0.9 1.0				1
				S			6,7,13 N = 20		
				E	1.4 1.45 1.5				
		- grey-brown mottled orange-brown							
87	2			E	1.9 2.0				2
					2.5				
				S			9,10,17 N = 27		
86	2.95	Bore discontinued at 2.95m depth - Limit of investigation		D	2.95				3
85	4								4
84	5								5
83	6								6
82	7								7

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** YB/NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 76.6 AHD
EASTING: 492879
NORTHING: 6905283
DIP/AZIMUTH: 90°/--

BORE No: 16
PROJECT No: 219361.00
DATE: 31/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
76	0.2	TOPSOIL Sandy CLAY (CI): medium plasticity, brown, fine to coarse sand, w>PL, firm, grass roots							
		Silty CLAY (CH): high plasticity, brown and grey-brown, fine to coarse sand, w>PL, very stiff (residual)		D	0.5				
	0.8								
75	1	Silty CLAY (CI): medium plasticity, brown mottled grey-brown and orange-brown, w~PL, hard (residual) - stiff		D	1.0				
				S			5,6,6 N = 12		
					1.45				
74	2								
					2.5				
				S			3,4,6 N = 10		
	2.95				2.95				
	3	Bore discontinued at 2.95m depth - Limit of investigation							
73	4								
72	5								
71	6								
70	7								
69									

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 95.0 AHD
EASTING: 492442
NORTHING: 6905328
DIP/AZIMUTH: 90°/--

BORE No: 17
PROJECT No: 219361.00
DATE: 30/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
95	0.2	TOPSOIL Sandy CLAY (CL): low plasticity, brown, fine sand, w~PL, stiff, grass roots							
	0.5	Silty CLAY (CI): medium plasticity, red-brown, trace fine sand, w>PL, soft to firm (residual)		D	0.3				
		- w~PL		D	0.5				
94	1	Sandy CLAY (CI): medium plasticity, brown, fine to medium sand, w<PL, stiff (residual)			1.0				
		- very stiff		S			11,12,25 N = 37		
		- hard			1.45				
93	2								
	2.3	Silty CLAY (CI-CH): medium to high plasticity, grey mottled orange-brown and pale grey, trace fine to medium sand, w~PL, hard (residual)		D	2.5				
		- grey-brown, w<PL		S			16, 30/150mm		
92	3				2.8				
				D	3.1				
91	4				4.0				
				S			6,9,17 N = 26		
					4.45				
90	5								
	5.5	SILTSTONE: highly weathered, inferred very low strength, brown and grey-brown (Walloon Coal Measures)		S	5.5 5.52		30/20mm		
				S	5.8		30/100mm		
89	5.9	Bore discontinued at 5.9m depth - Auger refusal			5.9				
	6								
88	7								

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 94.5 AHD
EASTING: 492555
NORTHING: 6905292
DIP/AZIMUTH: 90°/--

BORE No: 18
PROJECT No: 219361.00
DATE: 31/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
94	0.3	TOPSOIL Sandy CLAY (CI): medium plasticity, brown, fine to coarse sand, w>PL, very stiff, grass roots							
		Silty CLAY (CH): high plasticity, brown, with fine to coarse sand, w>PL, very stiff (residual)		B	0.3				
		- hard			0.5				
	1	- very stiff		S	1.0		5,7,11 N = 18		
93					1.45				
	1.8	Sandy CLAY (CI): medium plasticity, brown mottled red-brown, fine to medium sand, w<PL, hard (residual)							
92	2				2.5				
	2.6	SILTSTONE: highly weathered, inferred very low strength, brown mottled grey and orange-brown (Walloon Coal Measures)		S	2.79		12, 27, 30/90mm		
91	3								
	4	- inferred silty clay zone to 4.45m depth		S	4.0		5,12,19 N = 31		
90					4.45				
	5								
89		- inferred very low to low strength		S	5.5		30/130mm		
					5.65				
	6			S	6.0		30/20mm		
	6.02	Bore discontinued at 6.02mdepth - Auger refusal, inferred low strength							
88	7								
87									

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 92.4 AHD
EASTING: 492532
NORTHING: 6905216
DIP/AZIMUTH: 90°/--

BORE No: 19
PROJECT No: 219361.00
DATE: 30/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
92	0.2	TOPSOIL Sandy CLAY (CI): medium plasticity, brown, fine to coarse sand, w>PL, very stiff		E	0.0 0.1		Asbestos sample		
	0.6	Silty CLAY (CH): high plasticity, red-brown mottled brown, with fine to medium sand, trace fine gravel, w<PL, very stiff (residual)		E D	0.4 0.5				
91	1	Silty CLAY (CI): medium plasticity, brown, with fine sand, w~PL, very stiff (residual)		E D	0.9 1.0				
		- w>PL		S			7,9,13 N = 22		
				E D	1.4 1.45 1.5				
90	2			E	1.9 2.0				
		- hard		S	2.5		17, 25, 30/110mm		
	2.95				2.82				
89	3	Bore discontinued at 2.95m depth - Limit of investigation							
88	4								
87	5								
86	6								
85	7								

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** YB/NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: Bromelton Energy & Resources Centre (BERC)
LOCATION: Lot 1 Beaudesert-Boonah Road, Bromelton

SURFACE LEVEL: 73.7 AHD
EASTING: 492862
NORTHING: 6905191
DIP/AZIMUTH: 90°/--

BORE No: 20
PROJECT No: 219361.00
DATE: 29/5/2023
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
73	0.2	TOPSOIL Sandy CLAY (CI): medium plasticity, brown, fine sand, w~PL, very stiff							
		Silty CLAY (CH): high plasticity, brown and grey-brown, with fine to coarse sand, w<PL, firm (residual)		D	0.5				
		- stiff		U_{50}	0.65				
	0.7	Silty CLAY (CH): high plasticity, grey, with fine to medium sand, w~PL, very stiff (residual)		D	1.0				
72	1	- stiff		S			5,6,6 N = 12		
				D	1.45 1.5				
71	2				2.5				
				S			3,4,6 N = 10		
70	2.95 3	Bore discontinued at 2.95m depth - Limit of investigation		D	2.95 3.0				
69	4								
68	5								
67	6								
66	7								

RIG: Zenith ute rig **DRILLER:** Ground Test **LOGGED:** NS **CASING:** NIL

TYPE OF BORING: 110mm solid filght auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

Appendix J

Laboratory notes and chain of custody documents

495325

CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☑ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Douglas Partner Pty Ltd	Project №	219361.01	Project Manager	Rob Muller
Address	439 Montague Road, West End Qld 4101	Project Name	Bromelton	EDD Format (ESdat, EQuIS etc)	Sddat
Contact Name	Rob Muller			Sampler(s)	N.Sumonta, Y.Barr, C.Jones
Phone №	0417 544 122			Handed over by	Rob Muller
Special Directions				Email for Invoice	apinvoices@douglaspartners.com.au
Purchase Order				Email for Results	rob.muller@douglaspartners.com.au
Quote ID №					

Analyses (Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing)

Containers (Change container type & size if necessary)

Required Turnaround Time (TAT) (Default will be 5 days if not ticked)

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Suite B7A (TRH, BTEXN, PAH, phenols, metals)	Suite B15 (OCP, OPP, PCB)	PFAS Extended Suite (standard LOR)	Asbestos in soil (AS 4964)	Suite R21 (NEPM Screen for Soil Classification)	Suite M8 (metals)	TRH C6-C10 + BTEX	Hold	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	7/0.1	25/05/23	S	X	X	X	X											2	1	
2	7/0.5	25/05/23	S								X							2		
3	7/1.0	25/05/23	S								X							1		
4	7/1.5	25/05/23	S								X							1		
5	7/2.0	25/05/23	S								X							1		
6	8/0.1	29/05/23	S	X	X	X	X											2	1	
7	8/0.5	29/05/23	S								X							2		
8	8/1.0	29/05/23	S								X							1		
9	8/1.5	29/05/23	S								X							1		
10	8/2.0	29/5/23	S								X							1		
	Total Counts			2	2	2	2				8							14	2	

Method of Shipment	☑ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Rob Muller	Signature	Date	1st June 2023	Time	
Eurofins | mgt Laboratory Use Only	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	Time		Temperature	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	Time		Report №	

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☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Douglas Partner Pty Ltd	**Project №**	219361.01	**Project Manager**	Rob Muller
Address	439 Montague Road, West End Qld 4101	**Project Name**	Bromelton	**EDD Format** ESdat, EQuIS etc	Sddat
Contact Name	Rob Muller				
Phone №	0417 544 122				
Special Directions					
Purchase Order					
Quote ID №					

Sampler(s)	N.Sumonta, Y.Barr, C.Jones	
Handed over by	Rob Muller	
Email for Invoice	apinvoices@douglaspartners.com.au	
Email for Results	rob.muller@douglaspartners.com.au	

Containers (Change container type & size if necessary)

Required Turnaround Time (TAT) (Default will be 5 days if not ticked)

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☐ Overnight (reporting by 9am)♦ ☐ Same day♦ ☐ 1 day♦ ☐ 2 days♦ ☐ 3 days♦ ☑ 5 days (Standard) ☐ Other( )

Analyses Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Suite B7A (TRH, BTEXN, PAH, phenols, metals)	Suite B15 (OCP, OPP, PCB)	PFAS Extended Suite (standard LOR)	Asbestos in soil (AS 4964)	Suite R21 (NEPM Screen for Soil Classification)	Suite M8 (metals)	TRH C6-C10 + BTEX	Hold	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	9/0.1	24/05/23	S								X							2	1	
2	9/0.5	24/05/23	S	X	X	X	X											2		
3	9/1.0	24/05/23	S								X							1		
4	9/1.5	24/05/23	S								X							1		
5	9/2.0	24/05/23	S								X							1		
6	10/0.1	29/05/23	S	X	X	X	X											2	1	
7	10/0.5	29/05/23	S								X							2		
8	10/1.0	29/05/23	S								X							1		
9	10/1.5	29/05/23	S								X							1		
10	10/2.0	29/5/23	S								X							1		
	Total Counts			2	2	2	2				8							14	2	

Method of Shipment	☑ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Rob Muller	Signature	Date: 1st June 2023	Time

Eurofins | mgt Laboratory Use Only								
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature		
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №		

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08 9251 9600 EnviroSampleWA@eurofins.com

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03 8564 5000 EnviroSampleVic@eurofins.com

Company	Douglas Partner Pty Ltd	**Project №**	219361.01	**Project Manager**	Rob Muller
Address	439 Montague Road, West End Qld 4101	**Project Name**	Bromelton	**EDD Format** ESdat, EQuIS etc	Sddat
Contact Name	Rob Muller				
Phone №	0417 544 122				
Special Directions					
Purchase Order					
Quote ID №					

Sampler(s)	N.Sumonta, Y.Barr, C.Jones	
Handed over by	Rob Muller	
Email for Invoice	apinvoices@douglaspartners.com.au	
Email for Results	rob.muller@douglaspartners.com.au	

Analyses — Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

Containers — Change container type & size if necessary

Required Turnaround Time (TAT) — Default will be 5 days if not ticked

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☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Suite B7A (TRH, BTEXN, PAH, phenols, metals)	Suite B15 (OCP, OPP, PCB)	PFAS Extended Suite (standard LOR)	Asbestos in soil (AS 4964)	Suite R21 (NEPM Screen for Soil Classification)	Suite M8 (metals)	TRH C6-C10 + BTEX	Hold	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	11/0.1	29/05/23	S	X	X	X	X											2	1	
2	11/0.5	29/05/23	S								X							2		
3	11/1.0	29/05/23	S								X							1		
4	11/1.5	29/05/23	S								X							1		
5	11/2.0	29/05/23	S								X							1		
6	12/0.1	29/05/23	S	X	X	X	X											2	1	
7	12/0.5	29/05/23	S								X							2		
8	12/1.0	29/05/23	S								X							1		
9	12/1.5	29/05/23	S								X							1		
10	12/2.0	29/5/23	S								X							1		
	Total Counts			2	2	2	2				8							14	2	

Method of Shipment ☑ Courier (#) ☐ Hand Delivered ☐ Postal — Name: Rob Muller — Signature: — Date: 1st June 2023 — Time:

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Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	Time	Report №	

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☐ **Melbourne Laboratory** 6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Douglas Partner Pty Ltd	**Project №**	219361.01	**Project Manager**	Rob Muller
Address	439 Montague Road, West End Qld 4101	**Project Name**	Bromelton	**EDD Format** ESdat, EQuIS etc	Sdat
Contact Name	Rob Muller				
Phone №	0417 544 122				
Special Directions					
Purchase Order					
Quote ID №					

Sampler(s)	N.Sumonta, Y.Barr, C.Jones	
Handed over by	Rob Muller	
Email for Invoice	apinvoices@douglaspartners.com.au	
Email for Results	rob.muller@douglaspartners.com.au	

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☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Analyses: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing: Suite B7A (TRH, BTEXN, PAH, phenols, metals)	Suite B15 (OCP, OPP, PCB)	PFAS Extended Suite (standard LOR)	Asbestos in soil (AS 4964)	Suite R21 (NEPM Screen for Soil Classification)	Suite M8 (metals)	TRH C6-C10 + BTEX	Hold	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	13/0.1	29/05/23	S	X	X	X	X											2	1	
2	13/0.5	29/05/23	S					X										2		
3	13/1.0	29/05/23	S								X							1		
4	13/1.5	29/05/23	S								X							1		
5	13/2.0	29/05/23	S								X							1		
6	14/0.1	31/05/23	S	X	X	X	X											2	1	
7	14/0.5	31/05/23	S								X							2		
8	14/1.0	31/05/23	S								X							1		
9	14/1.5	31/05/23	S								X							1		
10	14/2.0	31/5/23	S								X							1		
	Total Counts			2	2	2	2	1			7							14	2	

Method of Shipment	☑ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Rob Muller	Signature	Date 1st June 2023	Time

Eurofins | mgt Laboratory Use Only	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature	
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №	

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Company	Douglas Partner Pty Ltd	Project №	219361.01	Project Manager	Rob Muller
Address	439 Montague Road, West End Qld 4101	Project Name	Bromelton	EDD Format (ESdat, EQuIS etc)	Sddat
Contact Name	Rob Muller				
Phone №	0417 544 122				
Special Directions					
Purchase Order					
Quote ID №					

Sampler(s)	N.Sumonta, Y.Barr, C.Jones
Handed over by	Rob Muller
Email for Invoice	apinvoices@douglaspartners.com.au
Email for Results	rob.muller@douglaspartners.com.au

Analyses (Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing)

Containers (Change container type & size if necessary)

Required Turnaround Time (TAT) (Default will be 5 days if not ticked)

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☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Suite B7A (TRH, BTEXN, PAH, phenols, metals)	Suite B15 (OCP, OPP, PCB)	PFAS Extended Suite (standard LOR)	Asbestos in soil (AS 4964)	Suite R21 (NEPM Screen for Soil Classification)	Suite M8 (metals)	TRH C6-C10 + BTEX	Hold	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	15/0.1	30/05/23	S	X	X	X	X											2	1	
2	15/0.5	30/05/23	S								X							2		
3	15/1.0	30/05/23	S								X							1		
4	15/1.5	30/05/23	S								X							1		
5	15/2.0	30/05/23	S								X							1		
6	16/0.1	29/05/23	S	X	X	X	X											2	1	
7	16/0.5	29/05/23	S								X							2		
8	16/1.0	29/05/23	S								X							1		
9	16/1.5	29/05/23	S								X							1		
10	16/2.0	29/5/23	S								X							1		
		Total Counts		2	2	2	2				8							14	2	

Method of Shipment: ☑ Courier (#) ☐ Hand Delivered ☐ Postal Name: Rob Muller Signature: Date: 1st June 2023 Time:

Eurofins | mgt Laboratory Use Only					
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time / Temperature
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time / Report №

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Company	Douglas Partner Pty Ltd	**Project №**	219361.01	**Project Manager**	Rob Muller
Address	439 Montague Road, West End Qld 4101	**Project Name**	Bromelton	**EDD Format** ESdat, EQuIS etc	Sddat
Contact Name	Rob Muller				
Phone №	0417 544 122				
Special Directions					
Purchase Order					
Quote ID №					

Sampler(s)	N.Sumonta, Y.Barr, C.Jones	
Handed over by	Rob Muller	
Email for Invoice	apinvoices@douglaspartners.com.au	
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☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

Analyses (Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing)

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh mm	Matrix Solid (S) Water (W)	Suite B7A (TRH, BTEXN, PAH, phenols, metals)	Suite B15 (OCP, OPP, PCB)	PFAS Extended Suite (standard LOR)	Asbestos in soil (AS 4964)	Suite R21 (NEPM Screen for Soil Classification)	Suite M8 (metals)	TRH C6-C10 + BTEX	Hold	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	17/0.1	30/05/23	S	X	X	X	X											2	1	
2	17/0.5	30/05/23	S								X							2		
3	17/1.0	30/05/23	S								X							1		
4	17/1.5	30/05/23	S								X							1		
5	17/2.0	30/05/23	S								X							1		
6	18/0.1	31/05/23	S	X	X	X	X											2	1	
7	18/0.5	31/05/23	S								X							2		
8	18/1.0	31/05/23	S								X							1		
9	18/1.5	31/05/23	S								X							1		
10	18/2.0	31/5/23	S								X							1		
	Total Counts			2	2	2	2				8							14	2	

Method of Shipment ☑ Courier (#) ☐ Hand Delivered ☐ Postal Name: Rob Muller Signature: Date: 1st June 2023 Time:

Eurofins | mgt Laboratory Use Only

Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	Time	Temperature
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	Time	Report №

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CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☑ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Douglas Partner Pty Ltd	Project №	219361.01	Project Manager	Rob Muller
Address	439 Montague Road, West End Qld 4101	Project Name	Bromelton	EDD Format (ESdat, EQuIS etc)	Sddat
Contact Name	Rob Muller				
Phone №	0417 544 122				
Special Directions					
Purchase Order					
Quote ID №					

Sampler(s)	N.Sumonta, Y.Barr, C.Jones
Handed over by	Rob Muller
Email for Invoice	apinvoices@douglaspartners.com.au
Email for Results	rob.muller@douglaspartners.com.au

Analyses (Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing)

Containers (Change container type & size if necessary)

Required Turnaround Time (TAT) (Default will be 5 days if not ticked)

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Suite B7A (TRH, BTEXN, PAH, phenols, metals)	Suite B15 (OCP, OPP, PCB)	PFAS Extended Suite (standard LOR)	Asbestos in soil (AS 4964)	Suite R21 (NEPM Screen for Soil Classification)	Suite M8 (metals)	TRH C6-C10 + BTEX	Hold	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	19/0.1	30/05/23	S	X	X	X	X											2	1	
2	19/0.5	30/05/23	S					X										2		
3	19/1.0	30/05/23	S								X							1		
4	19/1.5	30/05/23	S								X							1		
5	19/2.0	30/05/23	S								X							1		
6	20/0.1	29/05/23	S	X	X	X	X											2	1	
7	20/0.5	29/05/23	S						X									2		
8	20/1.0	29/05/23	S								X							1		
9	20/1.5	29/05/23	S								X							1		
10	20/2.0	29/5/23	S								X							1		
	Total Counts			2	2	2	2	1	1		6							14	2	

Method of Shipment: ☑ Courier (#) ☐ Hand Delivered ☐ Postal | Name: Rob Muller | Signature: | Date: 1st June 2023 | Time:

Eurofins | mgt Laboratory Use Only						
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature	
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №	

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☐ **Sydney Laboratory**
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☐ **Perth Laboratory**
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08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory**
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03 8564 5000 EnviroSampleVic@eurofins.com

Company	Douglas Partner Pty Ltd	**Project №**	219361.01	**Project Manager**	Rob Muller
Address	439 Montague Road, West End Qld 4101	**Project Name**	Bromelton	**EDD Format** ESdat, EQuIS etc	Sddat
Contact Name	Rob Muller				
Phone №	0417 544 122				
Special Directions					
Purchase Order					
Quote ID №					

Sampler(s)	N.Sumonta, Y.Barr, C.Jones	
Handed over by	Rob Muller	
Email for Invoice	apinvoices@douglaspartners.com.au	
Email for Results	rob.muller@douglaspartners.com.au	

Containers (Change container type & size if necessary)

Required Turnaround Time (TAT) (Default will be 5 days if not ticked)

*Surcharge will apply

☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

Analyses — Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Suite B7A (TRH, BTEXN, PAH, phenols, metals)	Suite B15 (OCP, OPP, PCB)	PFAS Extended Suite (standard LOR)	Asbestos in soil (AS 4964)	Suite R21 (NEPM Screen for Soil Classification)	Suite M8 (metals)	TRH C6-C10 + BTEX	Hold	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	S1	24/05/23	S	X	X	X												2		
2	R1	24/05/23	S	X	X	X												2		Please forward to ALS for analysis
3	Trip blank	24/05/23	S							X						1				
4	Trip spike	24/05/23	W							X						1				
5																				
6																				
7																				
8																				
9																				
10																				
	Total Counts			2	2	2				2						2		4		

Method of Shipment ☑ Courier (#) ☐ Hand Delivered ☐ Postal

Name: Rob Muller Signature: Date: 1st June 2023 Time:

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Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №

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IANZ# 1290

Sample Receipt Advice

Company name:	Douglas Partners (Qld) Pty Ltd
Contact name:	- Brisbane @ DouglasPartners
Project name:	BROMELTON
Project ID:	219361.01
Turnaround time:	5 Day
Date/Time received	Jun 1, 2023 3:15 PM
Eurofins reference	995325

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

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

Zoe Flynn on phone : or by email: ZoeFlynn@eurofins.com

Results will be delivered electronically via email to - Brisbane @ DouglasPartners - Brisbane@douglaspartners.com.au.

Note: A copy of these results will also be delivered to the general Douglas Partners (Qld) Pty Ltd email address.

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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IANZ# 1290

Company Name: Douglas Partners (Qld) Pty Ltd
Address: 439 Montague Road
West End
QLD 4101

Project Name: BROMELTON
Project ID: 219361.01

Order No.:
Report #: 995325
Phone: 07 3237 8900
Fax: 07 3237 8999

Received: Jun 1, 2023 3:15 PM
Due: Jun 8, 2023
Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	7/0.1	May 25, 2023		Soil	B23-Jn0003484	X			X	X		X		X	
2	8/0.1	May 29, 2023		Soil	B23-Jn0003485	X			X	X		X		X	
3	9/0.5	May 24, 2023		Soil	B23-Jn0003486	X			X	X		X		X	
4	10/0.1	May 29, 2023		Soil	B23-Jn0003487	X			X	X		X		X	
5	11/0.1	May 29, 2023		Soil	B23-Jn0003488	X			X	X		X		X	
6	12/0.1	May 29, 2023		Soil	B23-Jn0003489	X			X	X		X		X	
7	13/0.1	May 29, 2023		Soil	B23-Jn0003490	X			X	X		X		X	
8	13/0.5	May 29, 2023		Soil	B23-Jn0003491					X	X				
9	14/0.1	May 31, 2023		Soil	B23-Jn0003492	X			X	X		X		X	
10	15/0.1	May 30, 2023		Soil	B23-Jn0003493	X			X	X		X		X	
11	16/0.1	May 29, 2023		Soil	B23-Jn0003494	X			X	X		X		X	

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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NATA# 1261
Site# 25079 & 25289

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IANZ# 1290

Company Name: Douglas Partners (Qld) Pty Ltd
Address: 439 Montague Road
West End
QLD 4101

Project Name: BROMELTON
Project ID: 219361.01

Order No.:
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Phone: 07 3237 8900
Fax: 07 3237 8999

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Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
12	17/0.1	May 30, 2023		Soil	B23-Jn0003495	X			X	X		X		X	
13	18/0.1	May 31, 2023		Soil	B23-Jn0003496	X			X	X		X		X	
14	19/0.1	May 30, 2023		Soil	B23-Jn0003497	X			X	X		X		X	
15	19/0.5	May 30, 2023		Soil	B23-Jn0003498					X	X				
16	20/0.1	May 29, 2023		Soil	B23-Jn0003499	X			X	X		X		X	
17	20/0.5	May 29, 2023		Soil	B23-Jn0003500			X		X					
18	S1	May 24, 2023		Soil	B23-Jn0003501				X	X		X		X	
19	R1	May 25, 2023		Soil	B23-Jn0003502				X	X		X		X	
20	7/0.5	May 25, 2023		Soil	B23-Jn0003503		X								
21	7/1.0	May 25, 2023		Soil	B23-Jn0003504		X								
22	7/1.5	May 25, 2023		Soil	B23-Jn0003505		X								
23	7/2	May 25, 2023		Soil	B23-Jn0003506		X								
24	8/0.5	May 29, 2023		Soil	B23-Jn0003507		X								
25	8/1.0	May 29, 2023		Soil	B23-Jn0003508		X								

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Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
26	8/1.5	May 29, 2023		Soil	B23-Jn0003509		X								
27	8/2	May 29, 2023		Soil	B23-Jn0003510		X								
28	9/0.1	May 24, 2023		Soil	B23-Jn0003511		X								
29	9/1.0	May 24, 2023		Soil	B23-Jn0003512		X								
30	9/1.5	May 24, 2023		Soil	B23-Jn0003513		X								
31	9/2	May 24, 2023		Soil	B23-Jn0003514		X								
32	10/0.5	May 29, 2023		Soil	B23-Jn0003515		X								
33	10/1.0	May 29, 2023		Soil	B23-Jn0003516		X								
34	10/1.5	May 29, 2023		Soil	B23-Jn0003517		X								
35	10/2	May 29, 2023		Soil	B23-Jn0003518		X								
36	11/0.5	May 29, 2023		Soil	B23-Jn0003519		X								
37	11/1.0	May 29, 2023		Soil	B23-Jn0003520		X								
38	11/1.5	May 29, 2023		Soil	B23-Jn0003521		X								
39	11/2	May 29, 2023		Soil	B23-Jn0003522		X								

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Received: Jun 1, 2023 3:15 PM
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Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
40	12/0.5	May 29, 2023		Soil	B23-Jn0003523		X								
41	12/1.0	May 29, 2023		Soil	B23-Jn0003524		X								
42	12/1.5	May 29, 2023		Soil	B23-Jn0003525		X								
43	12/2	May 29, 2023		Soil	B23-Jn0003526		X								
44	13/1.0	May 29, 2023		Soil	B23-Jn0003527		X								
45	13/1.5	May 29, 2023		Soil	B23-Jn0003528		X								
46	13/2	May 29, 2023		Soil	B23-Jn0003529		X								
47	14/0.5	May 31, 2023		Soil	B23-Jn0003530		X								
48	14/1.0	May 31, 2023		Soil	B23-Jn0003531		X								
49	14/1.5	May 31, 2023		Soil	B23-Jn0003532		X								
50	14/2	May 31, 2023		Soil	B23-Jn0003533		X								
51	15/0.5	May 30, 2023		Soil	B23-Jn0003534		X								
52	15/1.0	May 30, 2023		Soil	B23-Jn0003535		X								
53	15/1.5	May 30, 2023		Soil	B23-Jn0003536		X								

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Company Name: Douglas Partners (Qld) Pty Ltd
Address: 439 Montague Road
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QLD 4101

Project Name: BROMELTON
Project ID: 219361.01

Order No.:
Report #: 995325
Phone: 07 3237 8900
Fax: 07 3237 8999

Received: Jun 1, 2023 3:15 PM
Due: Jun 8, 2023
Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
54	15/2	May 30, 2023		Soil	B23-Jn0003537		X								
55	16/0.5	May 29, 2023		Soil	B23-Jn0003538		X								
56	16/1.0	May 29, 2023		Soil	B23-Jn0003539		X								
57	16/1.5	May 29, 2023		Soil	B23-Jn0003540		X								
58	16/2	May 29, 2023		Soil	B23-Jn0003541		X								
59	17/0.5	May 30, 2023		Soil	B23-Jn0003542		X								
60	17/1.0	May 30, 2023		Soil	B23-Jn0003543		X								
61	17/1.5	May 30, 2023		Soil	B23-Jn0003544		X								
62	17/2	May 30, 2023		Soil	B23-Jn0003545		X								
63	18/0.5	May 31, 2023		Soil	B23-Jn0003546		X								
64	18/1.0	May 31, 2023		Soil	B23-Jn0003547		X								
65	18/1.5	May 31, 2023		Soil	B23-Jn0003548		X								
66	18/2	May 31, 2023		Soil	B23-Jn0003549		X								
67	19/1.0	May 30, 2023		Soil	B23-Jn0003550		X								

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Company Name: Douglas Partners (Qld) Pty Ltd
Address: 439 Montague Road
West End
QLD 4101

Project Name: BROMELTON
Project ID: 219361.01

Order No.:
Report #: 995325
Phone: 07 3237 8900
Fax: 07 3237 8999

Received: Jun 1, 2023 3:15 PM
Due: Jun 8, 2023
Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
68	19/1.5	May 30, 2023		Soil	B23-Jn0003551		X								
69	19/2	May 30, 2023		Soil	B23-Jn0003552		X								
70	20/1.0	May 29, 2023		Soil	B23-Jn0003553		X								
71	20/1.5	May 29, 2023		Soil	B23-Jn0003554		X								
72	20/2	May 29, 2023		Soil	B23-Jn0003555		X								
73	TRIP BLANK	May 26, 2023		Trip Blank (solid)	B23-Jn0003556								X		
74	TRIP SPIKE	May 27, 2023		Trip Spike (liquid)	B23-Jn0003557										X
Test Counts						14	53	1	16	19	2	16	1	16	1

Douglas Partners Pty Ltd
439 Montague Road
West End
QLD 4101

NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- Brisbane @ DouglasPartners**

Report **995325-S**
Project name BROMELTON
Project ID 219361.01
Received Date Jun 01, 2023

Client Sample ID			**7/0.1**	**8/0.1**	**9/0.5**	**10/0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**B23-Jn0003484**	**B23-Jn0003485**	**B23-Jn0003486**	**B23-Jn0003487**
Date Sampled			**May 25, 2023**	**May 29, 2023**	**May 24, 2023**	**May 29, 2023**
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	77	78	80	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	55	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	80	< 50	51
TRH C10-C36 (Total)	50	mg/kg	< 50	135	< 50	51
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			7/0.1	8/0.1	9/0.5	10/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003484	B23-Jn0003485	B23-Jn0003486	B23-Jn0003487
Date Sampled			May 25, 2023	May 29, 2023	May 24, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	90	89	80	91
p-Terphenyl-d14 (surr.)	1	%	89	86	72	84
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	79	141	128	62
Tetrachloro-m-xylene (surr.)	1	%	70	70	64	71
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			7/0.1	8/0.1	9/0.5	10/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003484	B23-Jn0003485	B23-Jn0003486	B23-Jn0003487
Date Sampled			May 25, 2023	May 29, 2023	May 24, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	111	131	131	138
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	79	141	128	62
Tetrachloro-m-xylene (surr.)	1	%	70	70	64	71
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5

Client Sample ID			7/0.1	8/0.1	9/0.5	10/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003484	B23-Jn0003485	B23-Jn0003486	B23-Jn0003487
Date Sampled			May 25, 2023	May 29, 2023	May 24, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	67	65	65	65
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	110	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	110	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	7.3	6.4	6.8	6.1
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	10	8.2	17	7.3
Copper	5	mg/kg	51	28	27	11
Lead	5	mg/kg	25	23	12	15
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	10.0	7.6	15	5.7
Zinc	5	mg/kg	83	54	54	33
Sample Properties						
% Moisture	1	%	20	17	20	17
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	118	111	108	111
13C5-PFPeA (surr.)	1	%	104	102	94	107
13C5-PFHxA (surr.)	1	%	130	125	122	125
13C4-PFHpA (surr.)	1	%	107	126	108	115
13C8-PFOA (surr.)	1	%	131	130	112	117
13C5-PFNA (surr.)	1	%	109	128	111	109
13C6-PFDA (surr.)	1	%	116	124	113	113
13C2-PFUnDA (surr.)	1	%	116	127	90	116
13C2-PFDoDA (surr.)	1	%	114	129	101	114
13C2-PFTeDA (surr.)	1	%	129	133	120	138

Client Sample ID			7/0.1	8/0.1	9/0.5	10/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003484	B23-Jn0003485	B23-Jn0003486	B23-Jn0003487
Date Sampled			May 25, 2023	May 29, 2023	May 24, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	84	87	85	88
D3-N-MeFOSA (surr.)	1	%	108	102	104	112
D5-N-EtFOSA (surr.)	1	%	107	104	105	109
D7-N-MeFOSE (surr.)	1	%	94	90	98	100
D9-N-EtFOSE (surr.)	1	%	98	99	108	113
D5-N-EtFOSAA (surr.)	1	%	90	104	78	97
D3-N-MeFOSAA (surr.)	1	%	84	103	75	94
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	141	151	135	141
18O2-PFHxS (surr.)	1	%	135	137	120	129
13C8-PFOS (surr.)	1	%	119	120	114	112
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	111	125	96	97
13C2-6:2 FTSA (surr.)	1	%	120	180	105	95
13C2-8:2 FTSA (surr.)	1	%	98	116	76	85
13C2-10:2 FTSA (surr.)	1	%	117	157	103	115
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			11/0.1	12/0.1	13/0.1	13/0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003488	B23-Jn0003489	B23-Jn0003490	B23-Jn0003491
Date Sampled			May 29, 2023	May 29, 2023	May 29, 2023	May 29, 2023
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	86	85	89	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	140	91	72	-
TRH C29-C36	50	mg/kg	240	220	130	-
TRH C10-C36 (Total)	50	mg/kg	380	311	202	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	88	92	103	-
p-Terphenyl-d14 (surr.)	1	%	84	89	98	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-

Client Sample ID			11/0.1	12/0.1	13/0.1	13/0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003488	B23-Jn0003489	B23-Jn0003490	B23-Jn0003491
Date Sampled			May 29, 2023	May 29, 2023	May 29, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	64	55	56	-
Tetrachloro-m-xylene (surr.)	1	%	82	82	75	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Coumaphos	2	mg/kg	< 2	< 2	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Monocrotophos	2	mg/kg	< 2	< 2	< 2	-
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Omethoate	2	mg/kg	< 2	< 2	< 2	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-

Client Sample ID			11/0.1	12/0.1	13/0.1	13/0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003488	B23-Jn0003489	B23-Jn0003490	B23-Jn0003491
Date Sampled			May 29, 2023	May 29, 2023	May 29, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Triphenylphosphate (surr.)	1	%	163	159	159	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	64	55	56	-
Tetrachloro-m-xylene (surr.)	1	%	82	82	75	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	-
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	-
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	-
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	-
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Total cresols*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	-
Dinoseb	20	mg/kg	< 20	< 20	< 20	-
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenol-d6 (surr.)	1	%	67	77	78	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	300	240	160	-
TRH >C34-C40	100	mg/kg	150	130	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	450	370	160	-

Client Sample ID			11/0.1	12/0.1	13/0.1	13/0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003488	B23-Jn0003489	B23-Jn0003490	B23-Jn0003491
Date Sampled			May 29, 2023	May 29, 2023	May 29, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	7.5	10	4.8	-
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chromium	5	mg/kg	15	12	6.9	-
Copper	5	mg/kg	25	35	14	-
Iron	20	mg/kg	-	-	-	32000
Lead	5	mg/kg	15	68	13	-
Mercury	0.1	mg/kg	< 0.1	0.1	< 0.1	-
Nickel	5	mg/kg	14	9.9	5.6	-
Zinc	5	mg/kg	95	150	39	-
Sample Properties						
% Moisture	1	%	18	18	16	19
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	-
13C4-PFBA (surr.)	1	%	104	111	111	-
13C5-PFPeA (surr.)	1	%	90	97	100	-
13C5-PFHxA (surr.)	1	%	106	119	133	-
13C4-PFHpA (surr.)	1	%	109	116	121	-
13C8-PFOA (surr.)	1	%	114	130	122	-
13C5-PFNA (surr.)	1	%	96	121	116	-
13C6-PFDA (surr.)	1	%	101	123	122	-
13C2-PFUnDA (surr.)	1	%	83	116	121	-
13C2-PFDoDA (surr.)	1	%	91	114	111	-
13C2-PFTeDA (surr.)	1	%	54	127	144	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	-
13C8-FOSA (surr.)	1	%	57	83	90	-
D3-N-MeFOSA (surr.)	1	%	66	81	107	-
D5-N-EtFOSA (surr.)	1	%	64	83	99	-
D7-N-MeFOSE (surr.)	1	%	66	82	95	-
D9-N-EtFOSE (surr.)	1	%	58	78	94	-

Client Sample ID			11/0.1	12/0.1	13/0.1	13/0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003488	B23-Jn0003489	B23-Jn0003490	B23-Jn0003491
Date Sampled			May 29, 2023	May 29, 2023	May 29, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSAA (surr.)	1	%	61	106	104	-
D3-N-MeFOSAA (surr.)	1	%	64	102	94	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	-
13C3-PFBS (surr.)	1	%	129	142	153	-
18O2-PFHxS (surr.)	1	%	130	132	134	-
13C8-PFOS (surr.)	1	%	107	116	116	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	-
13C2-4:2 FTSA (surr.)	1	%	107	185	144	-
13C2-6:2 FTSA (surr.)	1	%	171	INT	160	-
13C2-8:2 FTSA (surr.)	1	%	82	171	106	-
13C2-10:2 FTSA (surr.)	1	%	115	186	137	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	-
% Clay	1	%	-	-	-	19
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	-	-	140
pH (units)(1:5 soil:CaCl2 extract at 25 °C as rec.)	0.1	pH Units	-	-	-	7.5
Total Organic Carbon	0.1	%	-	-	-	0.5
Heavy Metals						
Iron (%)	0.01	%	-	-	-	3.2
Cation Exchange Capacity						
Cation Exchange Capacity	0.5	meq/100g	-	-	-	47

Client Sample ID			14/0.1	15/0.1	16/0.1	17/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003492	B23-Jn0003493	B23-Jn0003494	B23-Jn0003495
Date Sampled			May 31, 2023	May 30, 2023	May 29, 2023	May 30, 2023
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	75	80	79	79
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	65	84	60	54
TRH C29-C36	50	mg/kg	100	160	97	92
TRH C10-C36 (Total)	50	mg/kg	165	244	157	146
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	88	107	90	96
p-Terphenyl-d14 (surr.)	1	%	84	101	88	91
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			14/0.1	15/0.1	16/0.1	17/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003492	B23-Jn0003493	B23-Jn0003494	B23-Jn0003495
Date Sampled			May 31, 2023	May 30, 2023	May 29, 2023	May 30, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	76	66	64	57
Tetrachloro-m-xylene (surr.)	1	%	88	59	83	85
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			14/0.1	15/0.1	16/0.1	17/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003492	B23-Jn0003493	B23-Jn0003494	B23-Jn0003495
Date Sampled			May 31, 2023	May 30, 2023	May 29, 2023	May 30, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	143	176	161	150
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	76	66	64	57
Tetrachloro-m-xylene (surr.)	1	%	88	59	83	85
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	65	84	73	73
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	130	190	130	120
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	130	190	130	120

Client Sample ID			14/0.1	15/0.1	16/0.1	17/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003492	B23-Jn0003493	B23-Jn0003494	B23-Jn0003495
Date Sampled			May 31, 2023	May 30, 2023	May 29, 2023	May 30, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	3.6	5.7	4.6	10
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	6.0	12	8.8	8.0
Copper	5	mg/kg	9.0	23	10	14
Lead	5	mg/kg	10	20	12	18
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	8.6	7.8	6.9
Zinc	5	mg/kg	29	55	36	46
Sample Properties						
% Moisture	1	%	14	17	17	16
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	113	115	74	114
13C5-PFPeA (surr.)	1	%	100	103	59	104
13C5-PFHxA (surr.)	1	%	129	117	77	126
13C4-PFHpA (surr.)	1	%	110	122	67	118
13C8-PFOA (surr.)	1	%	119	133	77	126
13C5-PFNA (surr.)	1	%	117	131	89	115
13C6-PFDA (surr.)	1	%	118	135	103	115
13C2-PFUnDA (surr.)	1	%	116	116	112	114
13C2-PFDoDA (surr.)	1	%	117	137	111	118
13C2-PFTeDA (surr.)	1	%	133	150	108	141
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	86	94	78	89
D3-N-MeFOSA (surr.)	1	%	104	108	82	105
D5-N-EtFOSA (surr.)	1	%	106	107	84	103
D7-N-MeFOSE (surr.)	1	%	99	97	86	99
D9-N-EtFOSE (surr.)	1	%	99	106	95	104
D5-N-EtFOSAA (surr.)	1	%	100	115	78	105
D3-N-MeFOSAA (surr.)	1	%	83	101	76	97

Client Sample ID			14/0.1	15/0.1	16/0.1	17/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003492	B23-Jn0003493	B23-Jn0003494	B23-Jn0003495
Date Sampled			May 31, 2023	May 30, 2023	May 29, 2023	May 30, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	146	142	66	145
18O2-PFHxS (surr.)	1	%	123	142	76	135
13C8-PFOS (surr.)	1	%	116	124	96	108
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	101	132	98	136
13C2-6:2 FTSA (surr.)	1	%	155	INT	95	164
13C2-8:2 FTSA (surr.)	1	%	92	137	88	101
13C2-10:2 FTSA (surr.)	1	%	125	160	95	116
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			18/0.1	19/0.1	19/0.5	20/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003496	B23-Jn0003497	B23-Jn0003498	B23-Jn0003499
Date Sampled			May 31, 2023	May 30, 2023	May 30, 2023	May 29, 2023
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	75	88	-	78
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20

Client Sample ID			18/0.1	19/0.1	19/0.5	20/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003496	B23-Jn0003497	B23-Jn0003498	B23-Jn0003499
Date Sampled			May 31, 2023	May 30, 2023	May 30, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	54	< 50	-	52
TRH C29-C36	50	mg/kg	80	57	-	84
TRH C10-C36 (Total)	50	mg/kg	134	57	-	136
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	93	98	-	118
p-Terphenyl-d14 (surr.)	1	%	89	94	-	109
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05

Client Sample ID			18/0.1	19/0.1	19/0.5	20/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003496	B23-Jn0003497	B23-Jn0003498	B23-Jn0003499
Date Sampled			May 31, 2023	May 30, 2023	May 30, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	56	51	-	96
Tetrachloro-m-xylene (surr.)	1	%	96	76	-	80
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	-	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Omethoate	2	mg/kg	< 2	< 2	-	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	145	136	-	58
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1

Client Sample ID			18/0.1	19/0.1	19/0.5	20/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003496	B23-Jn0003497	B23-Jn0003498	B23-Jn0003499
Date Sampled			May 31, 2023	May 30, 2023	May 30, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	56	51	-	96
Tetrachloro-m-xylene (surr.)	1	%	96	76	-	80
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	-	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	-	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	-	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	-	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
2-Nitrophenol	1.0	mg/kg	< 1	< 1	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	-	< 5
Dinoseb	20	mg/kg	< 20	< 20	-	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenol-d6 (surr.)	1	%	67	68	-	93
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	-	< 20
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	110	< 100	-	110
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	110	< 100	-	110
Heavy Metals						
Arsenic	2	mg/kg	6.8	5.8	-	5.3
Cadmium	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chromium	5	mg/kg	7.8	8.2	-	9.0
Copper	5	mg/kg	19	21	-	19
Iron	20	mg/kg	-	-	37000	-
Lead	5	mg/kg	24	19	-	17
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Nickel	5	mg/kg	5.4	7.6	-	8.8
Zinc	5	mg/kg	41	47	-	71
Sample Properties						
% Moisture	1	%	20	19	22	17

Client Sample ID			18/0.1	19/0.1	19/0.5	20/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003496	B23-Jn0003497	B23-Jn0003498	B23-Jn0003499
Date Sampled			May 31, 2023	May 30, 2023	May 30, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	-	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	-	< 5
13C4-PFBA (surr.)	1	%	106	111	-	112
13C5-PFPeA (surr.)	1	%	95	111	-	94
13C5-PFHxA (surr.)	1	%	118	127	-	146
13C4-PFHpA (surr.)	1	%	122	116	-	140
13C8-PFOA (surr.)	1	%	118	124	-	140
13C5-PFNA (surr.)	1	%	111	112	-	111
13C6-PFDA (surr.)	1	%	113	116	-	86
13C2-PFUnDA (surr.)	1	%	114	116	-	84
13C2-PFDoDA (surr.)	1	%	112	117	-	84
13C2-PFTeDA (surr.)	1	%	120	145	-	47
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	-	< 10
13C8-FOSA (surr.)	1	%	79	82	-	47
D3-N-MeFOSA (surr.)	1	%	99	103	-	98
D5-N-EtFOSA (surr.)	1	%	96	99	-	120
D7-N-MeFOSE (surr.)	1	%	88	97	-	< 1
D9-N-EtFOSE (surr.)	1	%	88	97	-	89
D5-N-EtFOSAA (surr.)	1	%	95	100	-	45
D3-N-MeFOSAA (surr.)	1	%	88	94	-	59
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	-	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	-	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	-	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	-	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	-	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	-	< 5
13C3-PFBS (surr.)	1	%	139	143	-	143

Client Sample ID			18/0.1	19/0.1	19/0.5	20/0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Jn0003496	B23-Jn0003497	B23-Jn0003498	B23-Jn0003499
Date Sampled			May 31, 2023	May 30, 2023	May 30, 2023	May 29, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
18O2-PFHxS (surr.)	1	%	139	128	-	122
13C8-PFOS (surr.)	1	%	110	117	-	81
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	< 5
13C2-4:2 FTSA (surr.)	1	%	161	121	-	64
13C2-6:2 FTSA (surr.)	1	%	173	152	-	134
13C2-8:2 FTSA (surr.)	1	%	INT	102	-	44
13C2-10:2 FTSA (surr.)	1	%	128	128	-	65
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	-	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	-	< 50
% Clay	1	%	-	-	10	-
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	-	220	-
pH (units)(1:5 soil:CaCl2 extract at 25 °C as rec.)	0.1	pH Units	-	-	5.7	-
Total Organic Carbon	0.1	%	-	-	0.4	-
Heavy Metals						
Iron (%)	0.01	%	-	-	3.7	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.5	meq/100g	-	-	51	-

Client Sample ID			20/0.5	S1	TRIP BLANK
Sample Matrix			Soil	Soil	Trip Blank (solid)
Eurofins Sample No.			B23-Jn0003500	B23-Jn0003501	B23-Jn0003556
Date Sampled			May 29, 2023	May 24, 2023	May 26, 2023
Test/Reference	LOR	Unit			
BTEX					
Benzene	0.1	mg/kg	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	86	114
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-
TRH C6-C10	20	mg/kg	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-

Client Sample ID			20/0.5	S1	TRIP BLANK
Sample Matrix			Soil	Soil	Trip Blank (solid)
Eurofins Sample No.			B23-Jn0003500	B23-Jn0003501	B23-Jn0003556
Date Sampled			May 29, 2023	May 24, 2023	May 26, 2023
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons					
TRH C6-C9	20	mg/kg	-	< 20	< 20
TRH C6-C10	20	mg/kg	-	-	< 20
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C10-C14	20	mg/kg	-	< 20	-
TRH C15-C28	50	mg/kg	-	< 50	-
TRH C29-C36	50	mg/kg	-	< 50	-
TRH C10-C36 (Total)	50	mg/kg	-	< 50	-
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-
Acenaphthene	0.5	mg/kg	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-
Fluorene	0.5	mg/kg	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	145	-
p-Terphenyl-d14 (surr.)	1	%	-	133	-
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-
a-HCH	0.05	mg/kg	-	< 0.05	-
Aldrin	0.05	mg/kg	-	< 0.05	-
b-HCH	0.05	mg/kg	-	< 0.05	-
d-HCH	0.05	mg/kg	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-
Endrin	0.05	mg/kg	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	< 0.05	-

Client Sample ID			20/0.5	S1	TRIP BLANK
Sample Matrix			Soil	Soil	Trip Blank (solid)
Eurofins Sample No.			B23-Jn0003500	B23-Jn0003501	B23-Jn0003556
Date Sampled			May 29, 2023	May 24, 2023	May 26, 2023
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-
Toxaphene	0.5	mg/kg	-	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	94	-
Tetrachloro-m-xylene (surr.)	1	%	-	73	-
Organophosphorus Pesticides					
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-
Bolstar	0.2	mg/kg	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-
Coumaphos	2	mg/kg	-	< 2	-
Demeton-S	0.2	mg/kg	-	< 0.2	-
Demeton-O	0.2	mg/kg	-	< 0.2	-
Diazinon	0.2	mg/kg	-	< 0.2	-
Dichlorvos	0.2	mg/kg	-	< 0.2	-
Dimethoate	0.2	mg/kg	-	< 0.2	-
Disulfoton	0.2	mg/kg	-	< 0.2	-
EPN	0.2	mg/kg	-	< 0.2	-
Ethion	0.2	mg/kg	-	< 0.2	-
Ethoprop	0.2	mg/kg	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	< 0.2	-
Fenitrothion	0.2	mg/kg	-	< 0.2	-
Fensulfothion	0.2	mg/kg	-	< 0.2	-
Fenthion	0.2	mg/kg	-	< 0.2	-
Malathion	0.2	mg/kg	-	< 0.2	-
Merphos	0.2	mg/kg	-	< 0.2	-
Methyl parathion	0.2	mg/kg	-	< 0.2	-
Mevinphos	0.2	mg/kg	-	< 0.2	-
Monocrotophos	2	mg/kg	-	< 2	-
Naled	0.2	mg/kg	-	< 0.2	-
Omethoate	2	mg/kg	-	< 2	-
Phorate	0.2	mg/kg	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-
Pyrazophos	0.2	mg/kg	-	< 0.2	-
Ronnel	0.2	mg/kg	-	< 0.2	-
Terbufos	0.2	mg/kg	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-
Tokuthion	0.2	mg/kg	-	< 0.2	-
Trichloronate	0.2	mg/kg	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	61	-

Client Sample ID			20/0.5	S1	TRIP BLANK
Sample Matrix			Soil	Soil	Trip Blank (solid)
Eurofins Sample No.			B23-Jn0003500	B23-Jn0003501	B23-Jn0003556
Date Sampled			May 29, 2023	May 24, 2023	May 26, 2023
Test/Reference	LOR	Unit			
Polychlorinated Biphenyls					
Aroclor-1016	0.1	mg/kg	-	< 0.1	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	-
Aroclor-1232	0.1	mg/kg	-	< 0.1	-
Aroclor-1242	0.1	mg/kg	-	< 0.1	-
Aroclor-1248	0.1	mg/kg	-	< 0.1	-
Aroclor-1254	0.1	mg/kg	-	< 0.1	-
Aroclor-1260	0.1	mg/kg	-	< 0.1	-
Total PCB*	0.1	mg/kg	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	94	-
Tetrachloro-m-xylene (surr.)	1	%	-	73	-
Phenols (Halogenated)					
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	-	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	-	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-
Pentachlorophenol	1	mg/kg	-	< 1	-
Tetrachlorophenols - Total	10	mg/kg	-	< 10	-
Total Halogenated Phenol*	1	mg/kg	-	< 1	-
Phenols (non-Halogenated)					
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-
Total cresols*	0.5	mg/kg	-	< 0.5	-
4-Nitrophenol	5	mg/kg	-	< 5	-
Dinoseb	20	mg/kg	-	< 20	-
Phenol	0.5	mg/kg	-	< 0.5	-
Phenol-d6 (surr.)	1	%	-	117	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	50	mg/kg	-	< 50	-
TRH >C16-C34	100	mg/kg	-	< 100	-
TRH >C34-C40	100	mg/kg	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-
Heavy Metals					
Arsenic	2	mg/kg	3.6	6.4	-
Cadmium	0.5	mg/kg	< 0.5	< 0.5	-
Chromium	5	mg/kg	9.3	15	-
Copper	5	mg/kg	18	26	-
Lead	5	mg/kg	16	11	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-
Nickel	5	mg/kg	13	20	-
Zinc	5	mg/kg	31	53	-

Client Sample ID			20/0.5	S1	TRIP BLANK
Sample Matrix			Soil	Soil	Trip Blank (solid)
Eurofins Sample No.			B23-Jn0003500	B23-Jn0003501	B23-Jn0003556
Date Sampled			May 29, 2023	May 24, 2023	May 26, 2023
Test/Reference	LOR	Unit			
Sample Properties					
% Moisture	1	%	19	20	-
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	< 5	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	< 5	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	< 5	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	< 5	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	< 5	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	< 5	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	< 5	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	< 5	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	< 5	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	< 5	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	< 5	-
13C4-PFBA (surr.)	1	%	-	88	-
13C5-PFPeA (surr.)	1	%	-	64	-
13C5-PFHxA (surr.)	1	%	-	159	-
13C4-PFHpA (surr.)	1	%	-	154	-
13C8-PFOA (surr.)	1	%	-	96	-
13C5-PFNA (surr.)	1	%	-	104	-
13C6-PFDA (surr.)	1	%	-	100	-
13C2-PFUnDA (surr.)	1	%	-	98	-
13C2-PFDoDA (surr.)	1	%	-	89	-
13C2-PFTeDA (surr.)	1	%	-	88	-
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	-	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	-	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	< 10	-
13C8-FOSA (surr.)	1	%	-	38	-
D3-N-MeFOSA (surr.)	1	%	-	101	-
D5-N-EtFOSA (surr.)	1	%	-	88	-
D7-N-MeFOSE (surr.)	1	%	-	82	-
D9-N-EtFOSE (surr.)	1	%	-	97	-
D5-N-EtFOSAA (surr.)	1	%	-	93	-
D3-N-MeFOSAA (surr.)	1	%	-	125	-
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	< 5	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	-	< 5	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	-	< 5	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	< 5	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	< 5	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	< 5	-

Client Sample ID			20/0.5	S1	TRIP BLANK
Sample Matrix			Soil	Soil	Trip Blank (solid)
Eurofins Sample No.			B23-Jn0003500	B23-Jn0003501	B23-Jn0003556
Date Sampled			May 29, 2023	May 24, 2023	May 26, 2023
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	< 5	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	< 5	-
13C3-PFBS (surr.)	1	%	-	116	-
18O2-PFHxS (surr.)	1	%	-	97	-
13C8-PFOS (surr.)	1	%	-	105	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	-	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	-	< 5	-
13C2-4:2 FTSA (surr.)	1	%	-	105	-
13C2-6:2 FTSA (surr.)	1	%	-	71	-
13C2-8:2 FTSA (surr.)	1	%	-	86	-
13C2-10:2 FTSA (surr.)	1	%	-	170	-
PFASs Summations					
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	-
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
BTEX	Brisbane	Jun 20, 2023	14 Days
- Method: USEPA SW846 8260			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Brisbane	Jun 19, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Brisbane	Jun 20, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Naphthalene	Brisbane	Jun 20, 2023	14 Days
- Method: USEPA 8260B - MGT 350A Volatile Organics by GCMS			
Eurofins Suite B7A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Brisbane	Jun 20, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Brisbane	Jun 19, 2023	14 Days
- Method: USEPA M 8270 (LTM-ORG-2130 PAH & Phenols in Soil & Water by GC-MS)			
Phenols (Halogenated)	Brisbane	Jun 19, 2023	14 Days
- Method: USEPA M 8270 (LTM-ORG-2130 PAH & Phenols in Soil & Water by GC-MS)			
Phenols (non-Halogenated)	Brisbane	Jun 19, 2023	14 Days
- Method: USEPA M 8270 (LTM-ORG-2130 PAH & Phenols in Soil & Water by GC-MS)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Brisbane	Jun 19, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Brisbane	Jun 19, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Organochlorine Pesticides	Brisbane	Jun 19, 2023	14 Days
- Method: LTM-ORG-2220 OCP and PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Brisbane	Jun 19, 2023	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Polychlorinated Biphenyls	Melbourne	Jun 06, 2023	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
NEPM Screen for Soil Classification			
Heavy Metals	Brisbane	Jun 02, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Clay	Brisbane	Jun 02, 2023	14 Days
- Method: LTM-GEN-7040			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Brisbane	Jun 05, 2023	7 Days
- Method: LTM-INO-4030 Conductivity			
pH (units)(1:5 soil:CaCl2 extract at 25 °C as rec.)	Brisbane	Jun 05, 2023	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Total Organic Carbon	Melbourne	Jun 08, 2023	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Cation Exchange Capacity	Melbourne	Jun 05, 2023	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
% Moisture	Brisbane	Jun 01, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Jun 19, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Jun 19, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Jun 19, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Jun 19, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Company Name: Douglas Partners (Qld) Pty Ltd
Address: 439 Montague Road
West End
QLD 4101

Project Name: BROMELTON
Project ID: 219361.01

Order No.:
Report #: 995325
Phone: 07 3237 8900
Fax: 07 3237 8999

Received: Jun 1, 2023 3:15 PM
Due: Jun 8, 2023
Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	7/0.1	May 25, 2023		Soil	B23-Jn0003484	X			X	X		X		X	
2	8/0.1	May 29, 2023		Soil	B23-Jn0003485	X			X	X		X		X	
3	9/0.5	May 24, 2023		Soil	B23-Jn0003486	X			X	X		X		X	
4	10/0.1	May 29, 2023		Soil	B23-Jn0003487	X			X	X		X		X	
5	11/0.1	May 29, 2023		Soil	B23-Jn0003488	X			X	X		X		X	
6	12/0.1	May 29, 2023		Soil	B23-Jn0003489	X			X	X		X		X	
7	13/0.1	May 29, 2023		Soil	B23-Jn0003490	X			X	X		X		X	
8	13/0.5	May 29, 2023		Soil	B23-Jn0003491					X	X				
9	14/0.1	May 31, 2023		Soil	B23-Jn0003492	X			X	X		X		X	
10	15/0.1	May 30, 2023		Soil	B23-Jn0003493	X			X	X		X		X	
11	16/0.1	May 29, 2023		Soil	B23-Jn0003494	X			X	X		X		X	

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Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
12	17/0.1	May 30, 2023		Soil	B23-Jn0003495	X			X	X		X		X	
13	18/0.1	May 31, 2023		Soil	B23-Jn0003496	X			X	X		X		X	
14	19/0.1	May 30, 2023		Soil	B23-Jn0003497	X			X	X		X		X	
15	19/0.5	May 30, 2023		Soil	B23-Jn0003498					X	X				
16	20/0.1	May 29, 2023		Soil	B23-Jn0003499	X			X	X		X		X	
17	20/0.5	May 29, 2023		Soil	B23-Jn0003500			X		X					
18	S1	May 24, 2023		Soil	B23-Jn0003501				X	X		X		X	
19	R1	May 25, 2023		Soil	B23-Jn0003502				X	X		X		X	
20	7/0.5	May 25, 2023		Soil	B23-Jn0003503		X								
21	7/1.0	May 25, 2023		Soil	B23-Jn0003504		X								
22	7/1.5	May 25, 2023		Soil	B23-Jn0003505		X								
23	7/2	May 25, 2023		Soil	B23-Jn0003506		X								
24	8/0.5	May 29, 2023		Soil	B23-Jn0003507		X								
25	8/1.0	May 29, 2023		Soil	B23-Jn0003508		X								

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Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
26	8/1.5	May 29, 2023		Soil	B23-Jn0003509		X								
27	8/2	May 29, 2023		Soil	B23-Jn0003510		X								
28	9/0.1	May 24, 2023		Soil	B23-Jn0003511		X								
29	9/1.0	May 24, 2023		Soil	B23-Jn0003512		X								
30	9/1.5	May 24, 2023		Soil	B23-Jn0003513		X								
31	9/2	May 24, 2023		Soil	B23-Jn0003514		X								
32	10/0.5	May 29, 2023		Soil	B23-Jn0003515		X								
33	10/1.0	May 29, 2023		Soil	B23-Jn0003516		X								
34	10/1.5	May 29, 2023		Soil	B23-Jn0003517		X								
35	10/2	May 29, 2023		Soil	B23-Jn0003518		X								
36	11/0.5	May 29, 2023		Soil	B23-Jn0003519		X								
37	11/1.0	May 29, 2023		Soil	B23-Jn0003520		X								
38	11/1.5	May 29, 2023		Soil	B23-Jn0003521		X								
39	11/2	May 29, 2023		Soil	B23-Jn0003522		X								

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Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
40	12/0.5	May 29, 2023		Soil	B23-Jn0003523		X								
41	12/1.0	May 29, 2023		Soil	B23-Jn0003524		X								
42	12/1.5	May 29, 2023		Soil	B23-Jn0003525		X								
43	12/2	May 29, 2023		Soil	B23-Jn0003526		X								
44	13/1.0	May 29, 2023		Soil	B23-Jn0003527		X								
45	13/1.5	May 29, 2023		Soil	B23-Jn0003528		X								
46	13/2	May 29, 2023		Soil	B23-Jn0003529		X								
47	14/0.5	May 31, 2023		Soil	B23-Jn0003530		X								
48	14/1.0	May 31, 2023		Soil	B23-Jn0003531		X								
49	14/1.5	May 31, 2023		Soil	B23-Jn0003532		X								
50	14/2	May 31, 2023		Soil	B23-Jn0003533		X								
51	15/0.5	May 30, 2023		Soil	B23-Jn0003534		X								
52	15/1.0	May 30, 2023		Soil	B23-Jn0003535		X								
53	15/1.5	May 30, 2023		Soil	B23-Jn0003536		X								

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Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
54	15/2	May 30, 2023		Soil	B23-Jn0003537		X								
55	16/0.5	May 29, 2023		Soil	B23-Jn0003538		X								
56	16/1.0	May 29, 2023		Soil	B23-Jn0003539		X								
57	16/1.5	May 29, 2023		Soil	B23-Jn0003540		X								
58	16/2	May 29, 2023		Soil	B23-Jn0003541		X								
59	17/0.5	May 30, 2023		Soil	B23-Jn0003542		X								
60	17/1.0	May 30, 2023		Soil	B23-Jn0003543		X								
61	17/1.5	May 30, 2023		Soil	B23-Jn0003544		X								
62	17/2	May 30, 2023		Soil	B23-Jn0003545		X								
63	18/0.5	May 31, 2023		Soil	B23-Jn0003546		X								
64	18/1.0	May 31, 2023		Soil	B23-Jn0003547		X								
65	18/1.5	May 31, 2023		Soil	B23-Jn0003548		X								
66	18/2	May 31, 2023		Soil	B23-Jn0003549		X								
67	19/1.0	May 30, 2023		Soil	B23-Jn0003550		X								

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Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
68	19/1.5	May 30, 2023		Soil	B23-Jn0003551		X								
69	19/2	May 30, 2023		Soil	B23-Jn0003552		X								
70	20/1.0	May 29, 2023		Soil	B23-Jn0003553		X								
71	20/1.5	May 29, 2023		Soil	B23-Jn0003554		X								
72	20/2	May 29, 2023		Soil	B23-Jn0003555		X								
73	TRIP BLANK	May 26, 2023		Trip Blank (solid)	B23-Jn0003556								X		
74	TRIP SPIKE	May 27, 2023		Trip Spike (liquid)	B23-Jn0003557										X
Test Counts						14	53	1	16	19	2	16	1	16	1

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Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

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

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Total Non-Halogenated Phenol*	mg/kg	< 0			20	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Iron	mg/kg	< 20			20	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
Total Organic Carbon	%	< 0.1			0.1	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Iron (%)	%	< 0.01			0.01	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.5			0.5	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	89			70-130	Pass	
Toluene	%	118			70-130	Pass	
Ethylbenzene	%	116			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
Xylenes - Total*	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	%	75			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	74			70-130	Pass	
Acenaphthylene	%	84			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Anthracene	%	82			70-130	Pass	
Benz(a)anthracene	%	79			70-130	Pass	
Benzo(a)pyrene	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	%	76			70-130	Pass	
Benzo(g.h.i)perylene	%	85			70-130	Pass	
Benzo(k)fluoranthene	%	87			70-130	Pass	
Chrysene	%	72			70-130	Pass	
Dibenz(a.h)anthracene	%	78			70-130	Pass	
Fluoranthene	%	76			70-130	Pass	
Fluorene	%	80			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	74			70-130	Pass	
Naphthalene	%	85			70-130	Pass	
Phenanthrene	%	71			70-130	Pass	
Pyrene	%	79			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	73			70-130	Pass	
4.4'-DDD	%	78			70-130	Pass	
4.4'-DDE	%	70			70-130	Pass	
4.4'-DDT	%	83			70-130	Pass	
a-HCH	%	73			70-130	Pass	
Aldrin	%	81			70-130	Pass	
b-HCH	%	71			70-130	Pass	
d-HCH	%	83			70-130	Pass	
Dieldrin	%	74			70-130	Pass	
Endosulfan I	%	72			70-130	Pass	
Endosulfan II	%	81			70-130	Pass	
Endosulfan sulphate	%	73			70-130	Pass	
Endrin	%	95			70-130	Pass	
Endrin aldehyde	%	72			70-130	Pass	
Endrin ketone	%	72			70-130	Pass	
g-HCH (Lindane)	%	80			70-130	Pass	
Heptachlor	%	82			70-130	Pass	
Heptachlor epoxide	%	79			70-130	Pass	
Hexachlorobenzene	%	78			70-130	Pass	
Methoxychlor	%	88			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Azinphos-methyl	%	76			70-130	Pass	
Bolstar	%	81			70-130	Pass	
Chlorfenvinphos	%	105			70-130	Pass	
Chlorpyrifos	%	74			70-130	Pass	
Chlorpyrifos-methyl	%	76			70-130	Pass	
Coumaphos	%	75			70-130	Pass	
Demeton-S	%	80			70-130	Pass	
Demeton-O	%	95			70-130	Pass	
Diazinon	%	72			70-130	Pass	
Dichlorvos	%	89			70-130	Pass	
Dimethoate	%	90			70-130	Pass	
Disulfoton	%	93			70-130	Pass	
EPN	%	72			70-130	Pass	
Ethion	%	86			70-130	Pass	
Ethoprop	%	81			70-130	Pass	
Ethyl parathion	%	77			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fenitrothion	%	80			70-130	Pass	
Fensulfothion	%	74			70-130	Pass	
Fenthion	%	74			70-130	Pass	
Malathion	%	81			70-130	Pass	
Methyl parathion	%	90			75-125	Pass	
Mevinphos	%	87			70-130	Pass	
Monocrotophos	%	104			70-130	Pass	
Naled	%	108			70-130	Pass	
Omethoate	%	128			70-130	Pass	
Phorate	%	85			70-130	Pass	
Pirimiphos-methyl	%	83			70-130	Pass	
Pyrazophos	%	72			70-130	Pass	
Ronnel	%	76			70-130	Pass	
Terbufos	%	88			70-130	Pass	
Tetrachlorvinphos	%	88			70-130	Pass	
Tokuthion	%	79			70-130	Pass	
Trichloronate	%	73			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	91			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	82			25-140	Pass	
2.4-Dichlorophenol	%	84			25-140	Pass	
2.4.5-Trichlorophenol	%	79			25-140	Pass	
2.4.6-Trichlorophenol	%	86			25-140	Pass	
2.6-Dichlorophenol	%	82			25-140	Pass	
4-Chloro-3-methylphenol	%	80			25-140	Pass	
Pentachlorophenol	%	77			25-140	Pass	
Tetrachlorophenols - Total	%	94			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	91			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	77			25-140	Pass	
2-Nitrophenol	%	81			25-140	Pass	
2.4-Dimethylphenol	%	76			25-140	Pass	
2.4-Dinitrophenol	%	85			25-140	Pass	
2-Methylphenol (o-Cresol)	%	100			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	88			25-140	Pass	
4-Nitrophenol	%	80			25-140	Pass	
Dinoseb	%	78			25-140	Pass	
Phenol	%	75			25-140	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	73			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	96			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	96			80-120	Pass	
Copper	%	98			80-120	Pass	
Iron	%	96			80-120	Pass	
Lead	%	97			80-120	Pass	
Mercury	%	93			80-120	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	%	97			80-120	Pass	
Zinc	%	98			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	85			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	72			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	86			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	91			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	94			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	90			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	90			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	92			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	93			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	97			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	90			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	87			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	87			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	89			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	84			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	81			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	84			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	95			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	100			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	53			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	80			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	78			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	78			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	98			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	93			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	78			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	87			50-150	Pass	
LCS - % Recovery							
% Clay	%	123			70-130	Pass	
Total Organic Carbon	%	99			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Iron (%)	%	96			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	B23-My0075188	NCP	%	86			70-130	Pass	
Acenaphthylene	B23-My0075188	NCP	%	102			70-130	Pass	
Anthracene	B23-My0075188	NCP	%	92			70-130	Pass	
Benz(a)anthracene	B23-My0075188	NCP	%	86			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	B23-My0075188	NCP	%	104			70-130	Pass	
Benzo(b&j)fluoranthene	B23-My0075188	NCP	%	89			70-130	Pass	
Benzo(g.h.i)perylene	B23-My0075188	NCP	%	129			70-130	Pass	
Benzo(k)fluoranthene	B23-My0075188	NCP	%	94			70-130	Pass	
Chrysene	B23-My0075188	NCP	%	79			70-130	Pass	
Dibenz(a.h)anthracene	B23-My0075188	NCP	%	122			70-130	Pass	
Fluoranthene	B23-My0075188	NCP	%	84			70-130	Pass	
Fluorene	B23-My0075188	NCP	%	96			70-130	Pass	
Indeno(1.2.3-cd)pyrene	B23-My0075188	NCP	%	109			70-130	Pass	
Naphthalene	B23-My0075188	NCP	%	81			70-130	Pass	
Phenanthrene	B23-My0075188	NCP	%	78			70-130	Pass	
Pyrene	B23-My0075188	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	B23-My0075188	NCP	%	80			70-130	Pass	
4.4'-DDD	B23-My0075188	NCP	%	111			70-130	Pass	
4.4'-DDE	B23-My0075188	NCP	%	78			70-130	Pass	
4.4'-DDT	B23-My0075188	NCP	%	96			70-130	Pass	
a-HCH	B23-My0075188	NCP	%	79			70-130	Pass	
Aldrin	B23-My0075188	NCP	%	74			70-130	Pass	
b-HCH	B23-My0075188	NCP	%	80			70-130	Pass	
d-HCH	B23-My0075188	NCP	%	90			70-130	Pass	
Dieldrin	B23-My0075188	NCP	%	88			70-130	Pass	
Endosulfan I	B23-My0075188	NCP	%	89			70-130	Pass	
Endosulfan II	B23-My0075188	NCP	%	89			70-130	Pass	
Endosulfan sulphate	B23-My0075188	NCP	%	93			70-130	Pass	
Endrin	B23-My0075188	NCP	%	127			70-130	Pass	
Endrin aldehyde	B23-Jn0009586	NCP	%	74			70-130	Pass	
Endrin ketone	B23-My0075188	NCP	%	97			70-130	Pass	
g-HCH (Lindane)	B23-My0075188	NCP	%	88			70-130	Pass	
Heptachlor	B23-My0075188	NCP	%	104			70-130	Pass	
Heptachlor epoxide	B23-My0075188	NCP	%	78			70-130	Pass	
Hexachlorobenzene	B23-My0075188	NCP	%	73			70-130	Pass	
Methoxychlor	B23-My0075188	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Azinphos-methyl	B23-My0075188	NCP	%	88			70-130	Pass	
Bolstar	B23-My0075188	NCP	%	77			70-130	Pass	
Chlorfenvinphos	B23-My0075188	NCP	%	114			70-130	Pass	
Chlorpyrifos	B23-My0075188	NCP	%	75			70-130	Pass	
Chlorpyrifos-methyl	B23-Jn0013280	NCP	%	74			70-130	Pass	
Coumaphos	B23-My0075188	NCP	%	105			70-130	Pass	
Demeton-S	B23-My0075188	NCP	%	84			70-130	Pass	
Demeton-O	B23-Jn0009586	NCP	%	129			70-130	Pass	
Diazinon	B23-My0075188	NCP	%	81			70-130	Pass	
Dichlorvos	B23-My0075188	NCP	%	91			70-130	Pass	
Dimethoate	B23-My0075188	NCP	%	83			70-130	Pass	
Disulfoton	B23-My0075188	NCP	%	73			70-130	Pass	
EPN	B23-My0075188	NCP	%	89			70-130	Pass	
Ethion	B23-My0075188	NCP	%	93			70-130	Pass	
Ethoprop	B23-My0075188	NCP	%	80			70-130	Pass	
Ethyl parathion	B23-My0075188	NCP	%	101			70-130	Pass	
Fenitrothion	B23-My0075188	NCP	%	99			70-130	Pass	
Fensulfothion	B23-My0075188	NCP	%	111			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fenthion	B23-My0075188	NCP	%	81			70-130	Pass	
Malathion	B23-My0075188	NCP	%	122			70-130	Pass	
Methyl parathion	B23-Jn0013280	NCP	%	72			70-130	Pass	
Mevinphos	B23-My0079205	NCP	%	117			70-130	Pass	
Monocrotophos	B23-Jn0015431	NCP	%	130			70-130	Pass	
Naled	B23-My0075188	NCP	%	113			70-130	Pass	
Omethoate	B23-Jn0016973	NCP	%	90			70-130	Pass	
Phorate	B23-My0075188	NCP	%	84			70-130	Pass	
Pirimiphos-methyl	B23-My0075188	NCP	%	81			70-130	Pass	
Pyrazophos	B23-My0075185	NCP	%	130			70-130	Pass	
Ronnel	B23-My0075188	NCP	%	78			70-130	Pass	
Terbufos	B23-My0075188	NCP	%	85			70-130	Pass	
Tetrachlorvinphos	B23-My0075188	NCP	%	103			70-130	Pass	
Tokuthion	B23-My0075188	NCP	%	79			70-130	Pass	
Trichloronate	B23-My0075188	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	M23-Jn0007779	NCP	%	74			70-130	Pass	
Aroclor-1260	M23-Jn0007779	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	B23-My0075188	NCP	%	113			30-130	Pass	
2.4-Dichlorophenol	B23-My0075188	NCP	%	130			30-130	Pass	
2.4.5-Trichlorophenol	B23-My0075188	NCP	%	111			30-130	Pass	
2.4.6-Trichlorophenol	B23-My0075188	NCP	%	105			30-130	Pass	
2.6-Dichlorophenol	B23-My0075188	NCP	%	118			30-130	Pass	
4-Chloro-3-methylphenol	B23-My0075188	NCP	%	97			30-130	Pass	
Pentachlorophenol	B23-My0075188	NCP	%	110			30-130	Pass	
Tetrachlorophenols - Total	B23-My0075188	NCP	%	105			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	B23-Jn0016973	NCP	%	87			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M23-Jn0015127	NCP	%	98			30-130	Pass	
2-Nitrophenol	B23-My0075188	NCP	%	130			30-130	Pass	
2.4-Dimethylphenol	B23-My0075188	NCP	%	112			30-130	Pass	
2.4-Dinitrophenol	M23-Jn0015127	NCP	%	127			30-130	Pass	
2-Methylphenol (o-Cresol)	B23-My0075188	NCP	%	117			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	B23-My0075188	NCP	%	121			30-130	Pass	
4-Nitrophenol	B23-My0075188	NCP	%	121			30-130	Pass	
Dinoseb	B23-My0075188	NCP	%	116			30-130	Pass	
Phenol	B23-My0075188	NCP	%	104			30-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	B23-Jn0003485	CP	%	74			70-130	Pass	
Toluene	B23-Jn0003485	CP	%	82			70-130	Pass	
Ethylbenzene	B23-Jn0003485	CP	%	89			70-130	Pass	
m&p-Xylenes	B23-Jn0003485	CP	%	93			70-130	Pass	
o-Xylene	B23-Jn0003485	CP	%	93			70-130	Pass	
Xylenes - Total*	B23-Jn0003485	CP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	B23-Jn0003485	CP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	B23-Jn0003485	CP	%	84			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	B23-Jn0003485	CP	%	83			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	B23-Jn0003485	CP	%	82			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B23-Jn0003485	CP	%	123			75-125	Pass	
Chromium	B23-Jn0003485	CP	%	123			75-125	Pass	
Copper	B23-Jn0003485	CP	%	118			75-125	Pass	
Lead	B23-Jn0003485	CP	%	123			75-125	Pass	
Nickel	B23-Jn0003485	CP	%	123			75-125	Pass	
Zinc	B23-Jn0003485	CP	%	121			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B23-Jn0003485	CP	%	81			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B23-Jn0003485	CP	%	88			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B23-Jn0003485	CP	%	88			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B23-Jn0003485	CP	%	84			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B23-Jn0003485	CP	%	87			50-150	Pass	
Perfluorononanoic acid (PFNA)	B23-Jn0003485	CP	%	98			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B23-Jn0003485	CP	%	93			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B23-Jn0003485	CP	%	95			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B23-Jn0003485	CP	%	95			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B23-Jn0003485	CP	%	110			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B23-Jn0003485	CP	%	101			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B23-Jn0003485	CP	%	87			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Jn0003485	CP	%	90			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Jn0003485	CP	%	84			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Jn0003485	CP	%	79			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Jn0003485	CP	%	80			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Jn0003485	CP	%	90			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Jn0003485	CP	%	89			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B23-Jn0003485	CP	%	80			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B23-Jn0003485	CP	%	96			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B23-Jn0003485	CP	%	69			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B23-Jn0003485	CP	%	71			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorohexanesulfonic acid (PFHxS)	B23-Jn0003485	CP	%	77			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B23-Jn0003485	CP	%	68			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B23-Jn0003485	CP	%	87			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B23-Jn0003485	CP	%	81			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Jn0003485	CP	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Jn0003485	CP	%	79			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Jn0003485	CP	%	80			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Jn0003485	CP	%	110			50-150	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Iron	B23-Jn0037330	NCP	%	104			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Iron (%)	B23-Jn0037330	NCP	%	104			75-125	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	B23-Jn0003499	CP	%	93			70-130	Pass	
Toluene	B23-Jn0003499	CP	%	99			70-130	Pass	
Ethylbenzene	B23-Jn0003499	CP	%	101			70-130	Pass	
m&p-Xylenes	B23-Jn0003499	CP	%	103			70-130	Pass	
o-Xylene	B23-Jn0003499	CP	%	101			70-130	Pass	
Xylenes - Total*	B23-Jn0003499	CP	%	103			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	B23-Jn0003499	CP	%	113			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	B23-Jn0003499	CP	%	110			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B23-Jn0003499	CP	%	96			75-125	Pass	
Cadmium	B23-Jn0003499	CP	%	101			75-125	Pass	
Chromium	B23-Jn0003499	CP	%	98			75-125	Pass	
Copper	B23-Jn0003499	CP	%	97			75-125	Pass	
Lead	B23-Jn0003499	CP	%	95			75-125	Pass	
Mercury	B23-Jn0003499	CP	%	98			75-125	Pass	
Nickel	B23-Jn0003499	CP	%	96			75-125	Pass	
Zinc	B23-Jn0003499	CP	%	96			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B23-Jn0003484	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	B23-Jn0003484	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	B23-Jn0003484	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
BTEX				Result 1	Result 2	RPD			
m&p-Xylenes	B23-Jn0003484	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	B23-Jn0003484	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	B23-Jn0003484	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	B23-Jn0003484	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	B23-Jn0003484	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	B23-Jn0003484	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	B23-Jn0003484	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	B23-Jn0003484	CP	mg/kg	< 50	52	8.0	30%	Pass	
TRH C29-C36	B23-Jn0003484	CP	mg/kg	< 50	53	9.5	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	B23-My0075186	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Heptachlor epoxide	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	B23-My0075186	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	B23-My0075186	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	B23-My0075186	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	B23-My0075186	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M23-Jn0014535	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M23-Jn0014535	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M23-Jn0014535	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M23-Jn0014535	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M23-Jn0014535	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M23-Jn0014535	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M23-Jn0014535	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	M23-Jn0014535	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	B23-My0075186	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	B23-My0075186	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	B23-My0075186	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	B23-My0075186	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	B23-My0075186	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	B23-My0075186	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	B23-My0075186	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Nitrophenol	B23-My0075186	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	B23-My0075186	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	B23-My0075186	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	B23-My0075186	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	B23-My0075186	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	B23-My0075186	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	B23-My0075186	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	B23-Jn0003484	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	B23-Jn0003484	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	B23-Jn0003484	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B23-Jn0003484	CP	mg/kg	7.3	6.8	6.6	30%	Pass	
Cadmium	B23-Jn0003484	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chromium	B23-Jn0003484	CP	mg/kg	10	9.6	8.0	30%	Pass	
Copper	B23-Jn0003484	CP	mg/kg	51	47	8.2	30%	Pass	
Iron	B23-Jn0003484	CP	mg/kg	56000	49000	14	30%	Pass	
Lead	B23-Jn0003484	CP	mg/kg	25	23	9.3	30%	Pass	
Mercury	B23-My0075193	NCP	mg/kg	0.1	0.1	5.1	30%	Pass	
Nickel	B23-Jn0003484	CP	mg/kg	10.0	9.2	7.8	30%	Pass	
Zinc	B23-Jn0003484	CP	mg/kg	83	73	13	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Jn0003484	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Jn0003484	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Jn0003484	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Jn0003484	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	B23-Jn0003484	CP	%	5.6	4.9	14	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	B23-Jn0003489	CP	%	18	18	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (units)(1:5 soil:CaCl2 extract at 25 °C as rec.)	B23-Jn0020580	NCP	pH Units	4.1	4.1	<1	30%	Pass	
Total Organic Carbon	W23-My0077211	NCP	%	4.4	5.4	20	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	M23-Jn0004265	NCP	meq/100g	51	52	2.2	30%	Pass	

Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Jn0003496	CP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Jn0003496	CP	ug/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Jn0003496	CP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Jn0003496	CP	ug/kg	< 5	< 5	<1	30%	Pass

Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	B23-Jn0003499	CP	%	17	17	1.4	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B23-Jn0003501	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	B23-Jn0003501	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	B23-Jn0003501	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	B23-Jn0003501	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	B23-Jn0003501	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	B23-Jn0003501	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	B23-Jn0003501	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	B23-Jn0003501	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	B23-Jn0003501	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	B23-Jn0003501	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	B23-Jn0003501	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	B23-Jn0003501	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	B23-Jn0003501	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	B23-Jn0003501	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	B23-Jn0003501	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B23-Jn0003501	CP	mg/kg	6.4	6.3	1.4	30%	Pass	
Chromium	B23-Jn0003501	CP	mg/kg	15	13	19	30%	Pass	
Copper	B23-Jn0003501	CP	mg/kg	26	22	17	30%	Pass	
Iron	B23-Jn0003501	CP	mg/kg	34000	36000	6.2	30%	Pass	
Lead	B23-Jn0003501	CP	mg/kg	11	9.9	6.1	30%	Pass	
Nickel	B23-Jn0003501	CP	mg/kg	20	20	2.9	30%	Pass	
Zinc	B23-Jn0003501	CP	mg/kg	53	46	14	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron (%)	B23-Jn0003501	CP	%	3.4	3.6	6.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

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Edward Lee	Senior Analyst-Organic
Emily Rosenberg	Senior Analyst-Metal
Jonathon Angell	Senior Analyst-Inorganic
Jonathon Angell	Senior Analyst-Metal
Jonathon Angell	Senior Analyst-Organic
Jonathon Angell	Senior Analyst-PFAS
Jonathon Angell	Senior Analyst-Sample Properties
Jonathon Angell	Senior Analyst-Volatile
Joseph Edouard	Senior Analyst-Organic
Laxman Dias	Senior Analyst-Asbestos
Mary Makarios	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Metal
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Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Douglas Partners Pty Ltd
439 Montague Road
West End
QLD 4101

Attention:	- Brisbane @ DouglasPartners
Report	995325-AID
Project Name	BROMELTON
Project ID	219361.01
Received Date	Jun 01, 2023
Date Reported	Jun 27, 2023

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name BROMELTON
Project ID 219361.01
Date Sampled May 24, 2023 to May 31, 2023
Report 995325-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
7/0.1	23-Jn0003484	May 25, 2023	Approximate Sample 117g Sample consisted of: Brown coarse-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
8/0.1	23-Jn0003485	May 29, 2023	Approximate Sample 154g Sample consisted of: Brown coarse-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
9/0.5	23-Jn0003486	May 24, 2023	Approximate Sample 43g Sample consisted of: Brown fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
10/0.1	23-Jn0003487	May 29, 2023	Approximate Sample 82g Sample consisted of: Brown fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
11/0.1	23-Jn0003488	May 29, 2023	Approximate Sample 103g Sample consisted of: Brown fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
12/0.1	23-Jn0003489	May 29, 2023	Approximate Sample 76g Sample consisted of: Brown fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
13/0.1	23-Jn0003490	May 29, 2023	Approximate Sample 53g Sample consisted of: Brown fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
14/0.1	23-Jn0003492	May 31, 2023	Approximate Sample 142g Sample consisted of: Brown fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
15/0.1	23-Jn0003493	May 30, 2023	Approximate Sample 75g Sample consisted of: Brown fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
16/0.1	23-Jn0003494	May 29, 2023	Approximate Sample 58g Sample consisted of: Brown fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
17/0.1	23-Jn0003495	May 30, 2023	Approximate Sample 79g Sample consisted of: Brown fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
18/0.1	23-Jn0003496	May 31, 2023	Approximate Sample 113g Sample consisted of: Brown fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
19/0.1	23-Jn0003497	May 30, 2023	Approximate Sample 100g Sample consisted of: Brown fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
20/0.1	23-Jn0003499	May 29, 2023	Approximate Sample 65g Sample consisted of: Brown fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jun 01, 2023	Indefinite

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Company Name: Douglas Partners (Qld) Pty Ltd
Address: 439 Montague Road
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Project Name: BROMELTON
Project ID: 219361.01

Order No.:
Report #: 995325
Phone: 07 3237 8900
Fax: 07 3237 8999

Received: Jun 1, 2023 3:15 PM
Due: Jun 8, 2023
Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X		X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X										
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X	X
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	7/0.1	May 25, 2023		Soil	B23-Jn0003484	X				X	X		X		X	
2	8/0.1	May 29, 2023		Soil	B23-Jn0003485	X				X	X		X		X	
3	9/0.5	May 24, 2023		Soil	B23-Jn0003486	X				X	X		X		X	
4	10/0.1	May 29, 2023		Soil	B23-Jn0003487	X				X	X		X		X	
5	11/0.1	May 29, 2023		Soil	B23-Jn0003488	X				X	X		X		X	
6	12/0.1	May 29, 2023		Soil	B23-Jn0003489	X				X	X		X		X	
7	13/0.1	May 29, 2023		Soil	B23-Jn0003490	X				X	X		X		X	
8	13/0.5	May 29, 2023		Soil	B23-Jn0003491						X	X				
9	14/0.1	May 31, 2023		Soil	B23-Jn0003492	X				X	X		X		X	
10	15/0.1	May 30, 2023		Soil	B23-Jn0003493	X				X	X		X		X	
11	16/0.1	May 29, 2023		Soil	B23-Jn0003494	X				X	X		X		X	

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Melbourne Laboratory - NATA # 1261 Site # 1254										X		X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X										
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X	X
12	17/0.1	May 30, 2023		Soil	B23-Jn0003495	X				X	X		X		X	
13	18/0.1	May 31, 2023		Soil	B23-Jn0003496	X				X	X		X		X	
14	19/0.1	May 30, 2023		Soil	B23-Jn0003497	X				X	X		X		X	
15	19/0.5	May 30, 2023		Soil	B23-Jn0003498						X	X				
16	20/0.1	May 29, 2023		Soil	B23-Jn0003499	X				X	X		X		X	
17	20/0.5	May 29, 2023		Soil	B23-Jn0003500				X		X					
18	S1	May 24, 2023		Soil	B23-Jn0003501					X	X		X		X	
19	R1	May 25, 2023		Soil	B23-Jn0003502		X									
20	7/0.5	May 25, 2023		Soil	B23-Jn0003503			X								
21	7/1.0	May 25, 2023		Soil	B23-Jn0003504			X								
22	7/1.5	May 25, 2023		Soil	B23-Jn0003505			X								
23	7/2	May 25, 2023		Soil	B23-Jn0003506			X								
24	8/0.5	May 29, 2023		Soil	B23-Jn0003507			X								
25	8/1.0	May 29, 2023		Soil	B23-Jn0003508			X								

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Melbourne Laboratory - NATA # 1261 Site # 1254										X		X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X										
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X	X
26	8/1.5	May 29, 2023		Soil	B23-Jn0003509			X								
27	8/2	May 29, 2023		Soil	B23-Jn0003510			X								
28	9/0.1	May 24, 2023		Soil	B23-Jn0003511			X								
29	9/1.0	May 24, 2023		Soil	B23-Jn0003512			X								
30	9/1.5	May 24, 2023		Soil	B23-Jn0003513			X								
31	9/2	May 24, 2023		Soil	B23-Jn0003514			X								
32	10/0.5	May 29, 2023		Soil	B23-Jn0003515			X								
33	10/1.0	May 29, 2023		Soil	B23-Jn0003516			X								
34	10/1.5	May 29, 2023		Soil	B23-Jn0003517			X								
35	10/2	May 29, 2023		Soil	B23-Jn0003518			X								
36	11/0.5	May 29, 2023		Soil	B23-Jn0003519			X								
37	11/1.0	May 29, 2023		Soil	B23-Jn0003520			X								
38	11/1.5	May 29, 2023		Soil	B23-Jn0003521			X								
39	11/2	May 29, 2023		Soil	B23-Jn0003522			X								

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Melbourne Laboratory - NATA # 1261 Site # 1254										X		X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X										
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X	X
40	12/0.5	May 29, 2023		Soil	B23-Jn0003523			X								
41	12/1.0	May 29, 2023		Soil	B23-Jn0003524			X								
42	12/1.5	May 29, 2023		Soil	B23-Jn0003525			X								
43	12/2	May 29, 2023		Soil	B23-Jn0003526			X								
44	13/1.0	May 29, 2023		Soil	B23-Jn0003527			X								
45	13/1.5	May 29, 2023		Soil	B23-Jn0003528			X								
46	13/2	May 29, 2023		Soil	B23-Jn0003529			X								
47	14/0.5	May 31, 2023		Soil	B23-Jn0003530			X								
48	14/1.0	May 31, 2023		Soil	B23-Jn0003531			X								
49	14/1.5	May 31, 2023		Soil	B23-Jn0003532			X								
50	14/2	May 31, 2023		Soil	B23-Jn0003533			X								
51	15/0.5	May 30, 2023		Soil	B23-Jn0003534			X								
52	15/1.0	May 30, 2023		Soil	B23-Jn0003535			X								
53	15/1.5	May 30, 2023		Soil	B23-Jn0003536			X								

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Melbourne Laboratory - NATA # 1261 Site # 1254										X		X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X										
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X	X
54	15/2	May 30, 2023		Soil	B23-Jn0003537			X								
55	16/0.5	May 29, 2023		Soil	B23-Jn0003538			X								
56	16/1.0	May 29, 2023		Soil	B23-Jn0003539			X								
57	16/1.5	May 29, 2023		Soil	B23-Jn0003540			X								
58	16/2	May 29, 2023		Soil	B23-Jn0003541			X								
59	17/0.5	May 30, 2023		Soil	B23-Jn0003542			X								
60	17/1.0	May 30, 2023		Soil	B23-Jn0003543			X								
61	17/1.5	May 30, 2023		Soil	B23-Jn0003544			X								
62	17/2	May 30, 2023		Soil	B23-Jn0003545			X								
63	18/0.5	May 31, 2023		Soil	B23-Jn0003546			X								
64	18/1.0	May 31, 2023		Soil	B23-Jn0003547			X								
65	18/1.5	May 31, 2023		Soil	B23-Jn0003548			X								
66	18/2	May 31, 2023		Soil	B23-Jn0003549			X								
67	19/1.0	May 30, 2023		Soil	B23-Jn0003550			X								

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Company Name: Douglas Partners (Qld) Pty Ltd
Address: 439 Montague Road
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Project Name: BROMELTON
Project ID: 219361.01

Order No.:
Report #: 995325
Phone: 07 3237 8900
Fax: 07 3237 8999

Received: Jun 1, 2023 3:15 PM
Due: Jun 8, 2023
Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X		X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X										
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X	X
68	19/1.5	May 30, 2023		Soil	B23-Jn0003551			X								
69	19/2	May 30, 2023		Soil	B23-Jn0003552			X								
70	20/1.0	May 29, 2023		Soil	B23-Jn0003553			X								
71	20/1.5	May 29, 2023		Soil	B23-Jn0003554			X								
72	20/2	May 29, 2023		Soil	B23-Jn0003555			X								
73	TRIP BLANK	May 26, 2023		Trip Blank (solid)	B23-Jn0003556									X		
74	TRIP SPIKE	May 27, 2023		Trip Spike (liquid)	B23-Jn0003557											X
Test Counts						14	1	53	1	15	18	2	15	1	15	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to “non-bonded / friable”.
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w)**.
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
Sampling	Unless otherwise stated Eurofins are not responsible for sampling equipment or the sampling process.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

Sample Integrity

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

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos

Authorised by:

Laxman Dias	Senior Analyst-Asbestos



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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Douglas Partners Pty Ltd
439 Montague Road
West End
QLD 4101

NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- Brisbane @ DouglasPartners**

Report **995325-W**
Project name BROMELTON
Project ID 219361.01
Received Date Jun 01, 2023

Client Sample ID			R20 **TRIP SPIKE**
Sample Matrix			**Trip Spike (liquid)**
Eurofins Sample No.			**B23-Jn0003557**
Date Sampled			**May 27, 2023**
Test/Reference	LOR	Unit	
Naphthalene	1	%	110
TRH C6-C10	1	%	44
TRH C6-C9	1	%	47
BTEX			
Benzene	1	%	87
Ethylbenzene	1	%	68
m&p-Xylenes	1	%	79
o-Xylene	1	%	69
Toluene	1	%	76
Xylenes - Total	1	%	73
4-Bromofluorobenzene (surr.)	1	%	83

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time

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Company Name: Douglas Partners (Qld) Pty Ltd
Address: 439 Montague Road
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QLD 4101

Project Name: BROMELTON
Project ID: 219361.01

Order No.:
Report #: 995325
Phone: 07 3237 8900
Fax: 07 3237 8999

Received: Jun 1, 2023 3:15 PM
Due: Jun 8, 2023
Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	7/0.1	May 25, 2023		Soil	B23-Jn0003484	X			X	X		X		X	
2	8/0.1	May 29, 2023		Soil	B23-Jn0003485	X			X	X		X		X	
3	9/0.5	May 24, 2023		Soil	B23-Jn0003486	X			X	X		X		X	
4	10/0.1	May 29, 2023		Soil	B23-Jn0003487	X			X	X		X		X	
5	11/0.1	May 29, 2023		Soil	B23-Jn0003488	X			X	X		X		X	
6	12/0.1	May 29, 2023		Soil	B23-Jn0003489	X			X	X		X		X	
7	13/0.1	May 29, 2023		Soil	B23-Jn0003490	X			X	X		X		X	
8	13/0.5	May 29, 2023		Soil	B23-Jn0003491					X	X				
9	14/0.1	May 31, 2023		Soil	B23-Jn0003492	X			X	X		X		X	
10	15/0.1	May 30, 2023		Soil	B23-Jn0003493	X			X	X		X		X	
11	16/0.1	May 29, 2023		Soil	B23-Jn0003494	X			X	X		X		X	

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Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
12	17/0.1	May 30, 2023		Soil	B23-Jn0003495	X			X	X		X		X	
13	18/0.1	May 31, 2023		Soil	B23-Jn0003496	X			X	X		X		X	
14	19/0.1	May 30, 2023		Soil	B23-Jn0003497	X			X	X		X		X	
15	19/0.5	May 30, 2023		Soil	B23-Jn0003498					X	X				
16	20/0.1	May 29, 2023		Soil	B23-Jn0003499	X			X	X		X		X	
17	20/0.5	May 29, 2023		Soil	B23-Jn0003500			X		X					
18	S1	May 24, 2023		Soil	B23-Jn0003501				X	X		X		X	
19	R1	May 25, 2023		Soil	B23-Jn0003502				X	X		X		X	
20	7/0.5	May 25, 2023		Soil	B23-Jn0003503		X								
21	7/1.0	May 25, 2023		Soil	B23-Jn0003504		X								
22	7/1.5	May 25, 2023		Soil	B23-Jn0003505		X								
23	7/2	May 25, 2023		Soil	B23-Jn0003506		X								
24	8/0.5	May 29, 2023		Soil	B23-Jn0003507		X								
25	8/1.0	May 29, 2023		Soil	B23-Jn0003508		X								

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Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
26	8/1.5	May 29, 2023		Soil	B23-Jn0003509		X								
27	8/2	May 29, 2023		Soil	B23-Jn0003510		X								
28	9/0.1	May 24, 2023		Soil	B23-Jn0003511		X								
29	9/1.0	May 24, 2023		Soil	B23-Jn0003512		X								
30	9/1.5	May 24, 2023		Soil	B23-Jn0003513		X								
31	9/2	May 24, 2023		Soil	B23-Jn0003514		X								
32	10/0.5	May 29, 2023		Soil	B23-Jn0003515		X								
33	10/1.0	May 29, 2023		Soil	B23-Jn0003516		X								
34	10/1.5	May 29, 2023		Soil	B23-Jn0003517		X								
35	10/2	May 29, 2023		Soil	B23-Jn0003518		X								
36	11/0.5	May 29, 2023		Soil	B23-Jn0003519		X								
37	11/1.0	May 29, 2023		Soil	B23-Jn0003520		X								
38	11/1.5	May 29, 2023		Soil	B23-Jn0003521		X								
39	11/2	May 29, 2023		Soil	B23-Jn0003522		X								

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Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name: Douglas Partners (Qld) Pty Ltd
Address: 439 Montague Road
West End
QLD 4101

Project Name: BROMELTON
Project ID: 219361.01

Order No.:
Report #: 995325
Phone: 07 3237 8900
Fax: 07 3237 8999

Received: Jun 1, 2023 3:15 PM
Due: Jun 8, 2023
Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
40	12/0.5	May 29, 2023		Soil	B23-Jn0003523		X								
41	12/1.0	May 29, 2023		Soil	B23-Jn0003524		X								
42	12/1.5	May 29, 2023		Soil	B23-Jn0003525		X								
43	12/2	May 29, 2023		Soil	B23-Jn0003526		X								
44	13/1.0	May 29, 2023		Soil	B23-Jn0003527		X								
45	13/1.5	May 29, 2023		Soil	B23-Jn0003528		X								
46	13/2	May 29, 2023		Soil	B23-Jn0003529		X								
47	14/0.5	May 31, 2023		Soil	B23-Jn0003530		X								
48	14/1.0	May 31, 2023		Soil	B23-Jn0003531		X								
49	14/1.5	May 31, 2023		Soil	B23-Jn0003532		X								
50	14/2	May 31, 2023		Soil	B23-Jn0003533		X								
51	15/0.5	May 30, 2023		Soil	B23-Jn0003534		X								
52	15/1.0	May 30, 2023		Soil	B23-Jn0003535		X								
53	15/1.5	May 30, 2023		Soil	B23-Jn0003536		X								

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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ABN: 50 005 085 521

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Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

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NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

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Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
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Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

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Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
54	15/2	May 30, 2023		Soil	B23-Jn0003537		X								
55	16/0.5	May 29, 2023		Soil	B23-Jn0003538		X								
56	16/1.0	May 29, 2023		Soil	B23-Jn0003539		X								
57	16/1.5	May 29, 2023		Soil	B23-Jn0003540		X								
58	16/2	May 29, 2023		Soil	B23-Jn0003541		X								
59	17/0.5	May 30, 2023		Soil	B23-Jn0003542		X								
60	17/1.0	May 30, 2023		Soil	B23-Jn0003543		X								
61	17/1.5	May 30, 2023		Soil	B23-Jn0003544		X								
62	17/2	May 30, 2023		Soil	B23-Jn0003545		X								
63	18/0.5	May 31, 2023		Soil	B23-Jn0003546		X								
64	18/1.0	May 31, 2023		Soil	B23-Jn0003547		X								
65	18/1.5	May 31, 2023		Soil	B23-Jn0003548		X								
66	18/2	May 31, 2023		Soil	B23-Jn0003549		X								
67	19/1.0	May 30, 2023		Soil	B23-Jn0003550		X								

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ABN: 50 005 085 521

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Melbourne Laboratory - NATA # 1261 Site # 1254									X		X				
Sydney Laboratory - NATA # 1261 Site # 18217						X									
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X	X	X	X	X	X	X
68	19/1.5	May 30, 2023		Soil	B23-Jn0003551		X								
69	19/2	May 30, 2023		Soil	B23-Jn0003552		X								
70	20/1.0	May 29, 2023		Soil	B23-Jn0003553		X								
71	20/1.5	May 29, 2023		Soil	B23-Jn0003554		X								
72	20/2	May 29, 2023		Soil	B23-Jn0003555		X								
73	TRIP BLANK	May 26, 2023		Trip Blank (solid)	B23-Jn0003556								X		
74	TRIP SPIKE	May 27, 2023		Trip Spike (liquid)	B23-Jn0003557										X
Test Counts						14	53	1	16	19	2	16	1	16	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised by:

Paige Howarth	Analytical Services Manager
Jonathon Angell	Senior Analyst-Volatile



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CHAIN OF CUSTODY RECORD

Sydney Laboratory | Perth Laboratory | Melbourne Laboratory

Company	Douglas Partner Pty Ltd	Project №	219361.01	Project Manager	Rob Muller
Address	439 Montague Road, West End Qld 4101	Project Name	Bromelton	EDD Format (ESdat, EQuIS etc.)	Sddat
Contact Name	Rob Muller				
Phone №	0417 544 122				
Special Directions					
Purchase Order					
Quote ID №					

Sampler(s)	N.Sumonta, Y.Barr, C.Jones				
Handed over by	Rob Muller				
Email for Invoice	apinvoices@douglaspartners.com.au				
Email for Results	rob.muller@douglaspartners.com.au				

Containers (Change container type & size if necessary) | Required Turnaround Time (TAT) (Default will be 5 days if not ticked)

Analyses (Where matrix are requested, please specify "Soils" or "Waters" or NOTE code must be used to select SUITE picking)

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Suite B7A (TRH, BTEXN, PAH, phenols, metals)	Suite B15 (OCP, OPP, PCB)	PFAS Extended Suite (standard LOR)	Asbestos in soil (AS 4964)	Suite R21 (NEPM Screen for Soil Classification)	Suite M8 (metals)	TRH C6-C10 + BTEX	Hold	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	S1	24/05/23	S	X	X	X												2		
2	R1	24/05/23	S	X	X	X												2		Please forward to ALS for analysis
3	Trip blank	24/05/23	S							X						1				
4	Trip spike	24/05/23	W							X										
5																				
6																				
7																				
8																				
9																				
10																				
	Total Counts																			

Other: ☐ Overnight (reporting on Monday) ☐ Same day ☐ days ☐ 2 days* ☐ 3 days* ☑ 5 days (Standard) ☐ Other

Environmental Division
Brisbane
Work Order Reference
EB2318156

Telephone : +61-7-3243 7222

Method of Shipment: ☐ Rob Muller 1st June 2023

Eurofins | mgt Laboratory Use Only

Received By: EH | SYD | BNE | MEL | PER | ADL | NTL | DRW | Signature | Date: 15/6/23 | Time: 1551 | Temperature

Received By: | SYD | BNE | MEL | PER | ADL | NTL | DRW | Signature | Date | Time | Report №

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2318156**

Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: ROB MULLER	Contact	: John Pickering
Address	: 439 MONTAGUE ROAD WEST END QLD, AUSTRALIA 4101	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: rob.muller@douglaspartners.com.au	E-mail	: john.pickering@alsglobal.com
Telephone	: ----	Telephone	: +61 7 3552 8634
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: 219361.01	Page	: 1 of 3
Order number	: ----	Quote number	: EM2017DOUPAR0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 15-Jun-2023 15:51	Issue Date	: 15-Jun-2023
Client Requested Due Date	: 21-Jun-2023	Scheduled Reporting Date	: **21-Jun-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 1.9°C - Ice Bricks present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 1 / 1

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
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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 laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

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

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

Summary of Sample(s) and Requested Analysis

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

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - S-19 TRH/BTEXN/PAH/Phl/OC/OP/PCB/8 metals
EB2318156-001	24-May-2023 00:00	R1	✓	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

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

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA055: Moisture Content							
R1	Soil Glass Jar - Unpreserved	----	07-Jun-2023	15-Jun-2023	×	----	----
EP066: Polychlorinated Biphenyls (PCB)							
R1	Soil Glass Jar - Unpreserved	07-Jun-2023	17-Jul-2023	15-Jun-2023	×	----	----
EP068: Pesticides by GCMS							
R1	Soil Glass Jar - Unpreserved	07-Jun-2023	17-Jul-2023	15-Jun-2023	×	----	----
EP071: TRH - Semivolatile Fraction							
R1	Soil Glass Jar - Unpreserved	07-Jun-2023	17-Jul-2023	15-Jun-2023	×	----	----
EP075(SIM): PAH/Phenols (SIM)							
R1	Soil Glass Jar - Unpreserved	07-Jun-2023	17-Jul-2023	15-Jun-2023	×	----	----
EP080: TRH Volatiles/BTEX							
R1	Soil Glass Jar - Unpreserved	07-Jun-2023	07-Jun-2023	15-Jun-2023	×	----	----

Requested Deliverables

ACCOUNTS PAYABLE INVOICES

- A4 - AU Tax Invoice (INV)	Email	apinvoices@douglaspartners.com.au

ESDAT ESDAT

- EDI Format - ESDAT (ESDAT)	Email	ESdat_AU+douglaspartners@ESdatLabSync.net

ROB MULLER

- *AU Certificate of Analysis - NATA (COA)	Email	rob.muller@douglaspartners.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	rob.muller@douglaspartners.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	rob.muller@douglaspartners.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	rob.muller@douglaspartners.com.au
- Chain of Custody (CoC) (COC)	Email	rob.muller@douglaspartners.com.au
- EDI Format - ESDAT (ESDAT)	Email	rob.muller@douglaspartners.com.au
- EDI Format - XTab (XTAB)	Email	rob.muller@douglaspartners.com.au

CERTIFICATE OF ANALYSIS

Work Order	: **EB2318156**	Page	: 1 of 9
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: ROB MULLER	Contact	: John Pickering
Address	: 439 MONTAGUE ROAD WEST END QLD, AUSTRALIA 4101	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8634
Project	: 219361.01	Date Samples Received	: 15-Jun-2023 15:51
Order number	: ----	Date Analysis Commenced	: 16-Jun-2023
C-O-C number	: ----	Issue Date	: 21-Jun-2023 10:39
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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
- 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*
Keegan Mullane	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Timothy Creagh	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
Vincent Muller		Brisbane Inorganics, Stafford, QLD

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 Contract 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.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above 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.
- EG005T (Total Metals by ICP-AES): EB2314987-003 shows poor duplicate results due to sample heterogeneity. This has been confirmed by visual inspection.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	R1	----	----	----	----
				Sampling date / time	24-May-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2318156-001	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**20.7**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**6**	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		**8**	----	----	----	----
Copper	7440-50-8	5	mg/kg		**19**	----	----	----	----
Lead	7439-92-1	5	mg/kg		**7**	----	----	----	----
Nickel	7440-02-0	2	mg/kg		**16**	----	----	----	----
Zinc	7440-66-6	5	mg/kg		**33**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	R1	----	----	----	----
				Sampling date / time	24-May-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2318156-001	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	R1	----	----	----	----
				Sampling date / time	24-May-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2318156-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)A: Phenolic Compounds - Continued									
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	----	----	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	R1	----	----	----	----
				Sampling date / time	24-May-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2318156-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	----	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	R1	----	----	----	----
				Sampling date / time	24-May-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2318156-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	R1	----	----	----	----
				Sampling date / time	24-May-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2318156-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**87.7**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**121**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**114**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**87.9**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**75.6**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**115**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**124**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**121**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**128**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**92.4**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**84.9**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**114**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**128**	----	----	----	----
13C8-PFOA	----	0.0002	%		**130**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	16	134
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	138
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	23	134
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	35	154
2-Chlorophenol-D4	93951-73-6	42	153
2.4.6-Tribromophenol	118-79-6	26	157
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	34	156
Anthracene-d10	1719-06-8	37	153
4-Terphenyl-d14	1718-51-0	42	172
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	53	134
Toluene-D8	2037-26-5	60	131
4-Bromofluorobenzene	460-00-4	59	127
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

QUALITY CONTROL REPORT

Work Order	: **EB2318156**	Page	: 1 of 14
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: ROB MULLER	Contact	: John Pickering
Address	: 439 MONTAGUE ROAD WEST END QLD, AUSTRALIA 4101	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8634
Project	: 219361.01	Date Samples Received	: 15-Jun-2023
Order number	: ----	Date Analysis Commenced	: 16-Jun-2023
C-O-C number	: ----	Issue Date	: 21-Jun-2023
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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*
Keegan Mullane	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Timothy Creagh	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
Vincent Muller		Brisbane Inorganics, Stafford, QLD

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.

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 (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5115370)									
EB2318067-010	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	5	6	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	13	10	23.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	7	40.1	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	11	25.4	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	42	47	11.1	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	444	490	9.7	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	1880	2090	10.5	0% - 20%
EB2314987-003	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	3	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	1440	# 1890	27.1	0% - 20%
		EG005T: Copper	7440-50-8	5	mg/kg	18	41	79.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	2250	2460	8.9	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	10	15	37.3	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5114947)									
EB2318088-006	Anonymous	EA055: Moisture Content	----	0.1	%	14.9	16.4	9.8	0% - 50%
EB2318159-001	Anonymous	EA055: Moisture Content	----	0.1	%	10.8	9.7	10.6	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5115371)									
EB2314987-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.2	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5115326)									
EB2318156-001	R1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5115325)									
EB2318156-001	R1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	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 (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5115325) - continued									
EB2318156-001	R1	EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5115325)									
EB2318156-001	R1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	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 (%)*	*Acceptable RPD (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5115325) - continued									
EB2318156-001	R1	EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5115324)									
EB2318156-001	R1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5115324)									
EB2318156-001	R1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5114946)									
EB2318088-006	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EB2318159-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	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 (%)*	*Acceptable RPD (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5115323)									
EB2317704-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5114946)									
EB2318088-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EB2318159-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5115323)									
EB2317704-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEXN (QC Lot: 5114946)									
EB2318088-006	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EB2318159-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5115314)									
EB2317973-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2318159-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0004	<0.0002	70.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5115314)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5115314) - continued									
EB2317973-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2318159-002	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5115314)									
EB2317973-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2318159-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	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 (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5115314) - continued									
EB2318159-002	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5115314)									
EB2317973-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2318159-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (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 Sample (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 (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5115370)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	67.5924 mg/kg	93.5	84.0	123
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
EG005T: Chromium	7440-47-3	2	mg/kg	<2	15 mg/kg	108	83.0	125
EG005T: Copper	7440-50-8	5	mg/kg	<5	39.8567 mg/kg	104	86.0	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	46.2564 mg/kg	107	84.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	13 mg/kg	107	81.5	118
EG005T: Zinc	7440-66-6	5	mg/kg	<5	167.7014 mg/kg	100	80.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5115371)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.13051 mg/kg	91.2	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5115326)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	111	71.6	155
EP068A: Organochlorine Pesticides (OC) (QCLot: 5115325)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	72.8	127
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.8	71.0	127
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	106	67.5	126
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	105	72.7	127
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	70.6	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	64.8	127
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.5	72.4	122
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	94.0	67.4	125
EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	65.6	124
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	70.4	122
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	65.6	125
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	93.9	69.1	124
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	72.4	125
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.9	63.2	127
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.0	69.7	120
EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	61.2	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5115325) - continued								
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	55.5	125
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	57.1	117
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	112	51.9	125
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.6	46.5	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	84.2	34.0	130
EP068: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.05	mg/kg	<0.05	----	----	----	----
EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5115325)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	108	55.8	126
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	45.9	136
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	86.2	20.0	147
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	90.9	44.1	125
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.1	70.3	125
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	99.5	63.2	124
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	117	44.2	129
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	52.3	133
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	62.9	126
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.2	123
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	104	37.6	138
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	59.6	131
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	46.4	144
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.0	56.8	128
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.5	24.4	135
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	55.9	123
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	45.0	138
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	101	41.6	141
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	69.7	20.0	145
EP075(SIM)A: Phenolic Compounds (QCLot: 5115324)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	1.5 mg/kg	92.1	78.0	134
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	1.5 mg/kg	97.9	78.0	132
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	1.5 mg/kg	95.1	78.0	132
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	3 mg/kg	102	77.2	135
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	1.5 mg/kg	120	42.9	156

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 5115324) - continued								
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	1.5 mg/kg	105	70.3	141
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	1.5 mg/kg	105	69.9	135
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	1.5 mg/kg	99.0	72.9	136
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	1.5 mg/kg	91.3	53.3	138
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	1.5 mg/kg	118	50.9	140
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	1.5 mg/kg	112	45.5	140
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	3 mg/kg	61.1	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5115324)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	110	72.6	133
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	106	63.2	144
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	108	66.0	132
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	108	76.2	134
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	115	71.8	137
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	96.9	77.1	143
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	115	74.1	140
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	111	72.0	139
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	91.0	58.0	145
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	99.3	63.0	147
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	1.5 mg/kg	94.7	70.5	142
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	110	75.5	138
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	102	68.5	140
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	85.7	58.4	143
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	99.1	52.1	149
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	86.6	64.6	140
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5114946)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	18 mg/kg	110	64.0	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5115323)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	378 mg/kg	103	79.4	125
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	407 mg/kg	100	78.8	122
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5114946)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	22.5 mg/kg	114	58.1	124
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5115323)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5115323) - continued								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	502 mg/kg	102	81.0	132
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	268 mg/kg	101	67.2	130
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080: BTEXN (QCLot: 5114946)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	90.3	68.0	107
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.6	69.0	108
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	91.5	68.0	109
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	103	70.0	114
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	110	74.0	116
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	92.9	74.0	109
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5115314)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	113	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	123	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	107	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	126	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	122	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	114	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5115314)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	102	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	119	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.4	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5115314)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	128	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	106	62.8	140

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5115314) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	121	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	113	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	107	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5115314)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	111	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	118	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	129	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	124	54.8	124

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	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5115370)							
EB2318067-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	91.2	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	95.1	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	70.0	130
		EG005T: Copper	7440-50-8	250 mg/kg	96.4	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	113	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	105	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	84.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5115371)							
EB2318156-001	R1	EG035T: Mercury	7439-97-6	0.5 mg/kg	78.9	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5115326)							
EB2318159-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	103	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5115325)							
EB2317973-002	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	103	70.0	136
		EP068: Heptachlor	76-44-8	0.5 mg/kg	99.7	65.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	96.8	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5115325) - continued							
EB2317973-002	Anonymous	EP068: Dieldrin	60-57-1	0.5 mg/kg	90.6	67.0	129
		EP068: Endrin	72-20-8	0.5 mg/kg	89.5	60.0	137
		EP068: 4.4`-DDT	50-29-3	0.5 mg/kg	105	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5115325)							
EB2317973-002	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	93.9	70.0	131
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	97.7	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	94.6	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	94.0	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	97.6	70.0	134
EP075(SIM)A: Phenolic Compounds (QCLot: 5115324)							
EB2317973-002	Anonymous	EP075(SIM): Phenol	108-95-2	1.5 mg/kg	91.8	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	1.5 mg/kg	97.2	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	1.5 mg/kg	119	42.9	156
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1.5 mg/kg	89.9	53.3	138
		EP075(SIM): Pentachlorophenol	87-86-5	3 mg/kg	79.9	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5115324)							
EB2317973-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	107	66.0	132
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	110	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5114946)							
EB2318088-007	Anonymous	EP080: C6 - C9 Fraction	----	8 mg/kg	98.0	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5115323)							
EB2317973-001	Anonymous	EP071: C10 - C14 Fraction	----	379 mg/kg	101	70.0	130
		EP071: C15 - C28 Fraction	----	407 mg/kg	99.0	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5114946)							
EB2318088-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	96.6	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5115323)							
EB2317973-001	Anonymous	EP071: >C10 - C16 Fraction	----	502 mg/kg	101	70.0	130
		EP071: >C16 - C34 Fraction	----	268 mg/kg	99.5	70.0	130
EP080: BTEXN (QCLot: 5114946)							
EB2318088-007	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	96.4	70.0	130
		EP080: Toluene	108-88-3	2 mg/kg	94.5	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5115314)							
EB2317973-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	100	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	115	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	101	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	112	70.0	132

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5115314) - continued							
EB2317973-002	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	105	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	93.3	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5115314)							
EB2317973-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	93.8	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	101	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	101	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	105	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	100	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	114	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	104	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	105	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	106	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	98.8	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	85.7	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5115314)							
EB2317973-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	120	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	121	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	98.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	114	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	100	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	107	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	106	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5115314)							
EB2317973-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	105	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	104	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	130	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	130	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2318156**	Page	: 1 of 8
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: ROB MULLER	Telephone	: +61 7 3552 8634
Project	: 219361.01	Date Samples Received	: 15-Jun-2023
Site	: ----	Issue Date	: 21-Jun-2023
Sampler	: ----	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

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 Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **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

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005(ED093)T: Total Metals by ICP-AES	EB2314987--003	Anonymous	**Arsenic**	7440-38-2	27.1 %	0% - 20%	**RPD exceeds LOR based limits**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EA055: Moisture Content (Dried @ 105-110°C)						
Soil Glass Jar - Unpreserved						
R1	----	----	----	16-Jun-2023	07-Jun-2023	**9**
EP066: Polychlorinated Biphenyls (PCB)						
Soil Glass Jar - Unpreserved						
R1	16-Jun-2023	07-Jun-2023	**9**	----	----	----
EP068A: Organochlorine Pesticides (OC)						
Soil Glass Jar - Unpreserved						
R1	16-Jun-2023	07-Jun-2023	**9**	----	----	----
EP068B: Organophosphorus Pesticides (OP)						
Soil Glass Jar - Unpreserved						
R1	16-Jun-2023	07-Jun-2023	**9**	----	----	----
EP075(SIM)A: Phenolic Compounds						
Soil Glass Jar - Unpreserved						
R1	16-Jun-2023	07-Jun-2023	**9**	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved						
R1	16-Jun-2023	07-Jun-2023	**9**	----	----	----
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved						
R1	16-Jun-2023	07-Jun-2023	**9**	16-Jun-2023	07-Jun-2023	**9**
Soil Glass Jar - Unpreserved						
R1	16-Jun-2023	07-Jun-2023	**9**	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						
Soil Glass Jar - Unpreserved						
R1	16-Jun-2023	07-Jun-2023	**9**	16-Jun-2023	07-Jun-2023	**9**
Soil Glass Jar - Unpreserved						
R1	16-Jun-2023	07-Jun-2023	**9**	----	----	----
EP080: BTEXN						
Soil Glass Jar - Unpreserved						
R1	16-Jun-2023	07-Jun-2023	**9**	16-Jun-2023	07-Jun-2023	**9**

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
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
R1	**24-May-2023**	**----**	----	**----**	**16-Jun-2023**	07-Jun-2023	✗
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
R1	**24-May-2023**	**17-Jun-2023**	20-Nov-2023	✓	**19-Jun-2023**	20-Nov-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
R1	**24-May-2023**	**17-Jun-2023**	21-Jun-2023	✓	**19-Jun-2023**	21-Jun-2023	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
R1	**24-May-2023**	**16-Jun-2023**	07-Jun-2023	✗	**20-Jun-2023**	26-Jul-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
R1	**24-May-2023**	**16-Jun-2023**	07-Jun-2023	✗	**19-Jun-2023**	26-Jul-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
R1	**24-May-2023**	**16-Jun-2023**	07-Jun-2023	✗	**19-Jun-2023**	26-Jul-2023	✓
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM))							
R1	**24-May-2023**	**16-Jun-2023**	07-Jun-2023	✗	**19-Jun-2023**	26-Jul-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
R1	**24-May-2023**	**16-Jun-2023**	07-Jun-2023	✗	**19-Jun-2023**	26-Jul-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071)							
R1	**24-May-2023**	**16-Jun-2023**	07-Jun-2023	✗	**19-Jun-2023**	26-Jul-2023	✓
Soil Glass Jar - Unpreserved (EP080)							
R1	**24-May-2023**	**16-Jun-2023**	07-Jun-2023	✗	**16-Jun-2023**	07-Jun-2023	✗

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 (EP071) R1	**24-May-2023**	**16-Jun-2023**	07-Jun-2023	×	**19-Jun-2023**	26-Jul-2023	✓
Soil Glass Jar - Unpreserved (EP080) R1	**24-May-2023**	**16-Jun-2023**	07-Jun-2023	×	**16-Jun-2023**	07-Jun-2023	×
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) R1	**24-May-2023**	**16-Jun-2023**	07-Jun-2023	×	**16-Jun-2023**	07-Jun-2023	×
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) R1	**24-May-2023**	**16-Jun-2023**	20-Nov-2023	✓	**20-Jun-2023**	26-Jul-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) R1	**24-May-2023**	**16-Jun-2023**	20-Nov-2023	✓	**20-Jun-2023**	26-Jul-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) R1	**24-May-2023**	**16-Jun-2023**	20-Nov-2023	✓	**20-Jun-2023**	26-Jul-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) R1	**24-May-2023**	**16-Jun-2023**	20-Nov-2023	✓	**20-Jun-2023**	26-Jul-2023	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) R1	**24-May-2023**	**16-Jun-2023**	20-Nov-2023	✓	**20-Jun-2023**	26-Jul-2023	✓

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)							
Moisture Content	EA055	2	10	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	10	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	

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
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).
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 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)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
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).

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
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.
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.

CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

☐ **Sydney Laboratory** Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066 02 9900 8400 EnviroSampleNSW@eurofins.com

☑ **Brisbane Laboratory** Unit 1 21 Smallwood Place Murarrie QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Douglas Partner Pty Ltd	Project №	219361.02
Address	439 Montague Road, West End Qld 4101	Project Name	Bromelton
Contact Name	Rob Muller	Project Manager	Rob Muller
Phone №		EDD Format (ESdat, EQuIS etc)	Esdat
Special Directions		Sampler(s)	Chloe Jones
Purchase Order		Handed over by	Chloe Jones
Quote ID №		Email for Invoice	apinvoices@douglaspartners.com.au
		Email for Results	rob.muller@douglaspartners.com.au

Analyses Where metals are required, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	BIO Suite	PFAS Suite	BTEX (Asbestos Confirmation in Soil (1g/4))	TRHC6-C10/BTEX
1	MW9	2/6/23	W	X	X		
2	MW8		W	X	X		
3	SW1		W	X	X	X	
4	SW2		W	X	X	X	
5	MWR1		W	X	X		
6	MW51		W				
7	Rinsate		W	X			
8	Trip Blank		W				X
9	Trip Spike		W				X
10							
	Total Counts						

Containers Change container type & size if necessary.

500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)

Required Turnaround Time (TAT) Default will be 5 days if not ticked.

♦Surcharge will apply

- ☐ Overnight (reporting by 9am)♦
- ☐ Same day♦ ☐ 1 day♦
- ☐ 2 days♦ ☐ 3 days♦
- ☐ 5 days (Standard)
- ☐ Other( )

Sample Comments / Dangerous Goods Hazard Warning

send to ALS

Date/Time: 2/6/23 4:40pm

Chilled: (Yes) / No

Temp: 15.2°C

Correction: -1.5

Final Temp: 11.7°C

Method of Shipment							
☑ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Chloe Jones	Signature	Date	Time

Eurofins | mgt Laboratory Use Only					
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report № 996741

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

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Murarrie
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NATA# 1261 Site# 20794

Newcastle
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Mayfield West NSW 2304
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NATA# 1261
Site# 25079 & 25289

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NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd

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Auckland 1061
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IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Sample Receipt Advice

Company name:	Douglas Partners (Qld) Pty Ltd
Contact name:	- Brisbane @ DouglasPartners
Project name:	BROMELTON
Project ID:	219361.01
Turnaround time:	5 Day
Date/Time received	Jun 2, 2023 4:40 PM
Eurofins reference	996741

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

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

Zoe Flynn on phone : or by email: ZoeFlynn@eurofins.com

Results will be delivered electronically via email to - Brisbane @ DouglasPartners - Brisbane@douglaspartners.com.au.

Note: A copy of these results will also be delivered to the general Douglas Partners (Qld) Pty Ltd email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

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Auckland 1061	Christchurch 7675
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IANZ# 1327	IANZ# 1290

Company Name: Douglas Partners (Qld) Pty Ltd
Address: 439 Montague Road
West End
QLD 4101

Project Name: BROMELTON
Project ID: 219361.01

Order No.:
Report #: 996741
Phone: 07 3237 8900
Fax: 07 3237 8999

Received: Jun 2, 2023 4:40 PM
Due: Jun 9, 2023
Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Eurofins Suite B10: BTEX/TRH/PAH/OCP/OPP	BTEXN and Volatile TRH	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X		X	X
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	MW9	Jun 02, 2023		Water	B23-Jn0016349	X			X	
2	MW8	Jun 02, 2023		Water	B23-Jn0016350	X			X	
3	SW1	Jun 02, 2023		Water	B23-Jn0016351	X		X	X	
4	SW2	Jun 02, 2023		Water	B23-Jn0016352	X		X	X	
5	MWR1	Jun 02, 2023		Water	B23-Jn0016353	X			X	
6	RINSATE	Jun 02, 2023		Water	B23-Jn0016354	X				
7	TRIP BLANK	Jun 02, 2023		Trip Blank (liquid)	B23-Jn0016355		X			
8	TRIP SPIKE	Jun 02, 2023		Trip Spike (liquid)	B23-Jn0016356		X			X
Test Counts						6	2	2	5	1

Douglas Partners Pty Ltd
439 Montague Road
West End
QLD 4101

NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Rob Muller**

Report **996741-W**
Project name BROMELTON
Project ID 219361.01
Received Date Jun 02, 2023

Client Sample ID			**MW9**	**MW8**	**SW1**	**SW2**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**B23-Jn0016349**	**B23-Jn0016350**	**B23-Jn0016351**	**B23-Jn0016352**
Date Sampled			**Jun 02, 2023**	**Jun 02, 2023**	**Jun 02, 2023**	**Jun 02, 2023**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	0.11	[G01]< 0.2	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	0.28	2.7	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	1.6	6.1	0.1	0.3
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	0.4
TRH C10-C36 (Total)	0.1	mg/L	1.88	8.8	0.1	0.7
BTEX						
Comments				G01		
Benzene	0.001	mg/L	< 0.001	< 0.01	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.01	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.01	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.02	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.01	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.03	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	99	102	110	108
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	0.29	2.5	< 0.05	< 0.05
TRH C6-C10	0.02	mg/L	0.16	< 0.2	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	0.16	< 0.2	< 0.02	< 0.02
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			MW9	MW8	SW1	SW2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B23-Jn0016349	B23-Jn0016350	B23-Jn0016351	B23-Jn0016352
Date Sampled			Jun 02, 2023	Jun 02, 2023	Jun 02, 2023	Jun 02, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	75	77	76	60
p-Terphenyl-d14 (surr.)	1	%	77	126	81	80
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	77	66	63	62
Tetrachloro-m-xylene (surr.)	1	%	59	85	88	96
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002

Client Sample ID			MW9	MW8	SW1	SW2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B23-Jn0016349	B23-Jn0016350	B23-Jn0016351	B23-Jn0016352
Date Sampled			Jun 02, 2023	Jun 02, 2023	Jun 02, 2023	Jun 02, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	72	88	61	58
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	0.29	2.5	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	1.6	6.0	0.2	0.7
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	1.89	8.5	0.2	0.7
Heavy Metals						
Arsenic	0.001	mg/L	0.001	0.002	0.002	0.016
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.003	0.002	< 0.001	0.020
Copper	0.001	mg/L	0.005	0.029	0.002	0.064
Lead	0.001	mg/L	0.002	0.009	0.001	0.057
Mercury	0.0001	mg/L	0.0001	0.0003	< 0.0001	0.0001
Nickel	0.001	mg/L	0.007	0.010	0.001	0.029
Zinc	0.005	mg/L	0.015	0.043	0.008	0.13
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	103	111	64	49
13C5-PFPeA (surr.)	1	%	113	77	56	45
13C5-PFHxA (surr.)	1	%	112	86	65	57
13C4-PFHpA (surr.)	1	%	106	70	60	59

Client Sample ID			MW9	MW8	SW1	SW2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B23-Jn0016349	B23-Jn0016350	B23-Jn0016351	B23-Jn0016352
Date Sampled			Jun 02, 2023	Jun 02, 2023	Jun 02, 2023	Jun 02, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C8-PFOA (surr.)	1	%	108	64	63	56
13C5-PFNA (surr.)	1	%	96	72	63	59
13C6-PFDA (surr.)	1	%	99	69	61	58
13C2-PFUnDA (surr.)	1	%	59	73	56	56
13C2-PFDoDA (surr.)	1	%	104	59	51	49
13C2-PFTeDA (surr.)	1	%	128	48	50	44
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	111	17	87	95
D3-N-MeFOSA (surr.)	1	%	80	15	42	61
D5-N-EtFOSA (surr.)	1	%	62	11	40	64
D7-N-MeFOSE (surr.)	1	%	42	INT	55	48
D9-N-EtFOSE (surr.)	1	%	114	18	64	57
D5-N-EtFOSAA (surr.)	1	%	164	36	60	66
D3-N-MeFOSAA (surr.)	1	%	193	59	66	66
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	144	87	65	62
18O2-PFHxS (surr.)	1	%	136	67	68	61
13C8-PFOS (surr.)	1	%	104	96	78	67
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	147	INT	43	38
13C2-6:2 FTSA (surr.)	1	%	144	192	64	56
13C2-8:2 FTSA (surr.)	1	%	96	INT	73	77
13C2-10:2 FTSA (surr.)	1	%	153	INT	67	70

Client Sample ID			MW9	MW8	SW1	SW2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B23-Jn0016349	B23-Jn0016350	B23-Jn0016351	B23-Jn0016352
Date Sampled			Jun 02, 2023	Jun 02, 2023	Jun 02, 2023	Jun 02, 2023
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (as N)	0.01	mg/L	-	-	0.30	2.2
Nitrate & Nitrite (as N)	0.05	mg/L	-	-	0.06	< 0.05
Nitrate (as N)	0.02	mg/L	-	-	0.05	< 0.02
Nitrite (as N)	0.02	mg/L	-	-	< 0.02	< 0.02
Organic Nitrogen (as N)*	0.2	mg/L	-	-	1.6	7
Phosphate total (as P)	0.01	mg/L	-	-	0.06	0.70
Phosphorus reactive (as P)	0.01	mg/L	-	-	0.01	0.58
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	-	-	1.9	9.2
Total Nitrogen (as N)*	0.2	mg/L	-	-	1.96	9.2

Client Sample ID			MWR1	RINSATE	TRIP BLANK	R20 TRIP SPIKE
Sample Matrix			Water	Water	Trip Blank (liquid)	Trip Spike (liquid)
Eurofins Sample No.			B23-Jn0016353	B23-Jn0016354	B23-Jn0016355	B23-Jn0016356
Date Sampled			Jun 02, 2023	Jun 02, 2023	Jun 02, 2023	Jun 02, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	0.10	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	0.26	< 0.05	-	-
TRH C15-C28	0.1	mg/L	1.3	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C10-C36 (Total)	0.1	mg/L	1.56	< 0.1	-	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	99	106	115	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene N02	0.01	mg/L	< 0.01	< 0.01	-	-
TRH >C10-C16 less Naphthalene (F2) N01	0.05	mg/L	0.27	< 0.05	-	-
TRH C6-C10	0.02	mg/L	0.14	< 0.02	-	-
TRH C6-C10 less BTEX (F1) N04	0.02	mg/L	0.14	< 0.02	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	-	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	-	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(b&j)fluoranthene N07	0.001	mg/L	< 0.001	< 0.001	-	-

Client Sample ID			MWR1	RINSATE	TRIP BLANK	[R20]TRIP SPIKE
Sample Matrix			Water	Water	Trip Blank (liquid)	Trip Spike (liquid)
Eurofins Sample No.			B23-Jn0016353	B23-Jn0016354	B23-Jn0016355	B23-Jn0016356
Date Sampled			Jun 02, 2023	Jun 02, 2023	Jun 02, 2023	Jun 02, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	-	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	-	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	-	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	-	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	-	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	-	-
2-Fluorobiphenyl (surr.)	1	%	70	64	-	-
p-Terphenyl-d14 (surr.)	1	%	64	122	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	-	-
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	-	-
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	-	-
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	-	-
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	-	-
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	-
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	-	-
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Toxaphene	0.005	mg/L	< 0.005	< 0.005	-	-
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	-	-
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	-	-
Dibutylchlorendate (surr.)	1	%	66	91	-	-
Tetrachloro-m-xylene (surr.)	1	%	55	94	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	-	-
Bolstar	0.002	mg/L	< 0.002	< 0.002	-	-
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	-	-
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	-	-
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	-	-
Coumaphos	0.02	mg/L	< 0.02	< 0.02	-	-

Client Sample ID			MWR1	RINSATE	TRIP BLANK	[R20]TRIP SPIKE
Sample Matrix			Water	Water	Trip Blank (liquid)	Trip Spike (liquid)
Eurofins Sample No.			B23-Jn0016353	B23-Jn0016354	B23-Jn0016355	B23-Jn0016356
Date Sampled			Jun 02, 2023	Jun 02, 2023	Jun 02, 2023	Jun 02, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Demeton-S	0.002	mg/L	< 0.002	< 0.002	-	-
Demeton-O	0.002	mg/L	< 0.002	< 0.002	-	-
Diazinon	0.002	mg/L	< 0.002	< 0.002	-	-
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	-	-
Dimethoate	0.002	mg/L	< 0.002	< 0.002	-	-
Disulfoton	0.002	mg/L	< 0.002	< 0.002	-	-
EPN	0.002	mg/L	< 0.002	< 0.002	-	-
Ethion	0.002	mg/L	< 0.002	< 0.002	-	-
Ethoprop	0.002	mg/L	< 0.002	< 0.002	-	-
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	-	-
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	-	-
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	-	-
Fenthion	0.002	mg/L	< 0.002	< 0.002	-	-
Malathion	0.002	mg/L	< 0.002	< 0.002	-	-
Merphos	0.002	mg/L	< 0.002	< 0.002	-	-
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	-	-
Mevinphos	0.002	mg/L	< 0.002	< 0.002	-	-
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	-	-
Naled	0.002	mg/L	< 0.002	< 0.002	-	-
Omethoate	0.02	mg/L	< 0.02	< 0.02	-	-
Phorate	0.002	mg/L	< 0.002	< 0.002	-	-
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	-	-
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	-	-
Ronnel	0.002	mg/L	< 0.002	< 0.002	-	-
Terbufos	0.002	mg/L	< 0.002	< 0.002	-	-
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	-	-
Tokuthion	0.002	mg/L	< 0.002	< 0.002	-	-
Trichloronate	0.002	mg/L	< 0.002	< 0.002	-	-
Triphenylphosphate (surr.)	1	%	66	103	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	0.27	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	1.3	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-	-
TRH >C10-C40 (total)*	0.1	mg/L	1.57	< 0.1	-	-
Heavy Metals						
Arsenic	0.001	mg/L	< 0.001	< 0.001	-	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Chromium	0.001	mg/L	0.002	< 0.001	-	-
Copper	0.001	mg/L	0.005	0.002	-	-
Lead	0.001	mg/L	0.003	< 0.001	-	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Nickel	0.001	mg/L	0.007	< 0.001	-	-
Zinc	0.005	mg/L	0.016	< 0.005	-	-
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	-	-	-
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	-	-	-
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	-	-	-
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	-	-	-

Client Sample ID			MWR1	RINSATE	TRIP BLANK	[R20]TRIP SPIKE
Sample Matrix			Water	Water	Trip Blank (liquid)	Trip Spike (liquid)
Eurofins Sample No.			B23-Jn0016353	B23-Jn0016354	B23-Jn0016355	B23-Jn0016356
Date Sampled			Jun 02, 2023	Jun 02, 2023	Jun 02, 2023	Jun 02, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	-	-	-
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	-	-	-
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	-	-	-
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	-	-	-
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	-	-	-
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	-	-	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	-	-	-
13C4-PFBA (surr.)	1	%	78	-	-	-
13C5-PFPeA (surr.)	1	%	58	-	-	-
13C5-PFHxA (surr.)	1	%	79	-	-	-
13C4-PFHpA (surr.)	1	%	88	-	-	-
13C8-PFOA (surr.)	1	%	72	-	-	-
13C5-PFNA (surr.)	1	%	105	-	-	-
13C6-PFDA (surr.)	1	%	99	-	-	-
13C2-PFUnDA (surr.)	1	%	62	-	-	-
13C2-PFDoDA (surr.)	1	%	121	-	-	-
13C2-PFTeDA (surr.)	1	%	81	-	-	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	-	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	-	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	-	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	-	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	-	-	-
13C8-FOSA (surr.)	1	%	53	-	-	-
D3-N-MeFOSA (surr.)	1	%	59	-	-	-
D5-N-EtFOSA (surr.)	1	%	72	-	-	-
D7-N-MeFOSE (surr.)	1	%	65	-	-	-
D9-N-EtFOSE (surr.)	1	%	122	-	-	-
D5-N-EtFOSAA (surr.)	1	%	INT	-	-	-
D3-N-MeFOSAA (surr.)	1	%	INT	-	-	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	-	-	-
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	-	-	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	-	-	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	-	-	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	-	-	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	-	-	-
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	-	-	-
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	-	-	-
13C3-PFBS (surr.)	1	%	150	-	-	-
18O2-PFHxS (surr.)	1	%	142	-	-	-
13C8-PFOS (surr.)	1	%	111	-	-	-

Client Sample ID			MWR1	RINSATE	TRIP BLANK	[R20]TRIP SPIKE
Sample Matrix			Water	Water	Trip Blank (liquid)	Trip Spike (liquid)
Eurofins Sample No.			B23-Jn0016353	B23-Jn0016354	B23-Jn0016355	B23-Jn0016356
Date Sampled			Jun 02, 2023	Jun 02, 2023	Jun 02, 2023	Jun 02, 2023
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	-	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	-	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	-	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	-	-	-
13C2-4:2 FTSA (surr.)	1	%	118	-	-	-
13C2-6:2 FTSA (surr.)	1	%	137	-	-	-
13C2-8:2 FTSA (surr.)	1	%	113	-	-	-
13C2-10:2 FTSA (surr.)	1	%	175	-	-	-
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	-	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	-	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	-	-	-
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	-	-	-
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	-	-	-
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02	-
Naphthalene	1	%	-	-	-	89
TRH C6-C10	1	%	-	-	-	48
TRH C6-C9	1	%	-	-	-	48
Total Recoverable Hydrocarbons						
TRH C6-C10	0.02	mg/L	-	-	< 0.02	-
BTEX						
Benzene	1	%	-	-	-	89
Ethylbenzene	1	%	-	-	-	83
m&p-Xylenes	1	%	-	-	-	90
o-Xylene	1	%	-	-	-	77
Toluene	1	%	-	-	-	82
Xylenes - Total	1	%	-	-	-	81
4-Bromofluorobenzene (surr.)	1	%	-	-	-	103

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Brisbane	Jun 08, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Brisbane	Jun 08, 2023	14 Days
- Method: USEPA SW846 8260			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Brisbane	Jun 08, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Naphthalene	Brisbane	Jun 08, 2023	14 Days
- Method: USEPA 8260B - MGT 350A Volatile Organics by GCMS			
Total Recoverable Hydrocarbons	Brisbane	Jun 08, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jun 09, 2023	7 Days
- Method: USEPA M 8270 (LTM-ORG-2130 PAH & Phenols in Soil & Water by GC-MS)			
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jun 08, 2023	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Jun 08, 2023	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jun 08, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Brisbane	Jun 08, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Jun 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Jun 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Jun 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Jun 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Melbourne	Jun 08, 2023	28 Days
- Method: LTM-INO-4450 Determination of Nitrogen Species by Discrete Analyser			
Nitrate & Nitrite (as N)	Melbourne	Jun 08, 2023	28 Days
- Method: LTM-INO-4450 Determination of Nitrogen Species by Discrete Analyser			
Nitrate (as N)	Melbourne	Jun 08, 2023	28 Days
- Method: LTM-INO-4450 Determination of Nitrogen Species by Discrete Analyser			
Nitrite (as N)	Melbourne	Jun 08, 2023	2 Days
- Method: LTM-INO-4450 Determination of Nitrogen Species by Discrete Analyser			
Organic Nitrogen (as N)*	Melbourne	Jun 07, 2023	7 Days
- Method: APHA 4500 Organic Nitrogen (N)			
Phosphate total (as P)	Melbourne	Jun 08, 2023	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	Jun 08, 2023	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	Jun 08, 2023	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			

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Address: 439 Montague Road
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Project Name: BROMELTON
Project ID: 219361.01

Order No.:
Report #: 996741
Phone: 07 3237 8900
Fax: 07 3237 8999

Received: Jun 2, 2023 4:40 PM
Due: Jun 9, 2023
Priority: 5 Day
Contact Name: - Brisbane @ DouglasPartners

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Eurofins Suite B10: BTEX/TRH/PAH/OCP/OPP	BTEXN and Volatile TRH	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X		X		
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X		X	X
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	MW9	Jun 02, 2023		Water	B23-Jn0016349	X			X	
2	MW8	Jun 02, 2023		Water	B23-Jn0016350	X			X	
3	SW1	Jun 02, 2023		Water	B23-Jn0016351	X		X	X	
4	SW2	Jun 02, 2023		Water	B23-Jn0016352	X		X	X	
5	MWR1	Jun 02, 2023		Water	B23-Jn0016353	X			X	
6	RINSATE	Jun 02, 2023		Water	B23-Jn0016354	X				
7	TRIP BLANK	Jun 02, 2023		Trip Blank (liquid)	B23-Jn0016355		X			
8	TRIP SPIKE	Jun 02, 2023		Trip Spike (liquid)	B23-Jn0016356		X			X
Test Counts						6	2	2	5	1

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Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury	mg/L	< 0.0001			0.0001	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	95			70-130	Pass	
TRH C10-C14	%	109			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	102			70-130	Pass	
Toluene	%	98			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	103			70-130	Pass	
Xylenes - Total*	%	102			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	97			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	91			70-130	Pass	
Acenaphthylene	%	74			70-130	Pass	
Anthracene	%	77			70-130	Pass	
Benz(a)anthracene	%	119			70-130	Pass	
Benzo(a)pyrene	%	75			70-130	Pass	
Benzo(b&j)fluoranthene	%	73			70-130	Pass	
Benzo(g.h.i)perylene	%	87			70-130	Pass	
Benzo(k)fluoranthene	%	124			70-130	Pass	
Chrysene	%	117			70-130	Pass	
Dibenz(a.h)anthracene	%	71			70-130	Pass	
Fluoranthene	%	99			70-130	Pass	
Fluorene	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	79			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
Phenanthrene	%	79			70-130	Pass	
Pyrene	%	94			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	78			70-130	Pass	
4.4'-DDD	%	73			70-130	Pass	
4.4'-DDE	%	78			70-130	Pass	
4.4'-DDT	%	70			70-130	Pass	
a-HCH	%	87			70-130	Pass	
Aldrin	%	75			70-130	Pass	
b-HCH	%	102			70-130	Pass	
d-HCH	%	88			70-130	Pass	
Dieldrin	%	84			70-130	Pass	
Endosulfan I	%	86			70-130	Pass	
Endosulfan II	%	106			70-130	Pass	
Endosulfan sulphate	%	72			70-130	Pass	
Endrin	%	81			70-130	Pass	
Endrin aldehyde	%	86			70-130	Pass	
Endrin ketone	%	95			70-130	Pass	
g-HCH (Lindane)	%	80			70-130	Pass	
Heptachlor	%	88			70-130	Pass	
Heptachlor epoxide	%	85			70-130	Pass	
Hexachlorobenzene	%	83			70-130	Pass	
Methoxychlor	%	71			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	122			70-130	Pass	
Dimethoate	%	86			70-130	Pass	
Ethion	%	87			70-130	Pass	
Fenitrothion	%	77			70-130	Pass	
Methyl parathion	%	76			70-130	Pass	
Mevinphos	%	82			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	105			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	96			80-120	Pass	
Cadmium	%	94			80-120	Pass	
Chromium	%	103			80-120	Pass	
Copper	%	100			80-120	Pass	
Lead	%	105			80-120	Pass	
Mercury	%	98			80-120	Pass	
Nickel	%	101			80-120	Pass	
Zinc	%	94			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	84			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	80			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	87			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	80			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	80			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	79			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	94			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	84			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	132			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	82			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	92			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	82			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	85			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	79			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	84			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	86			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	103			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	76			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	82			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	80			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	77			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	91			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	86			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	114			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	84			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	75			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	81			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	100			50-150	Pass	
LCS - % Recovery							
Ammonia (as N)	%	119			70-130	Pass	
Nitrate & Nitrite (as N)	%	120			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nitrite (as N)			%	110			70-130	Pass	
Phosphate total (as P)			%	98			70-130	Pass	
Phosphorus reactive (as P)			%	119			70-130	Pass	
Total Kjeldahl Nitrogen (as N)			%	95			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	B23-Jn0018205	NCP	%	96			70-130	Pass	
TRH C10-C14	M23-Jn0021049	NCP	%	124			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	B23-Jn0018205	NCP	%	94			70-130	Pass	
Toluene	B23-Jn0018205	NCP	%	91			70-130	Pass	
Ethylbenzene	B23-Jn0018205	NCP	%	89			70-130	Pass	
m&p-Xylenes	B23-Jn0018205	NCP	%	93			70-130	Pass	
o-Xylene	B23-Jn0018205	NCP	%	91			70-130	Pass	
Xylenes - Total*	B23-Jn0018205	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	B23-Jn0018205	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S23-Jn0014853	NCP	%	80			70-130	Pass	
4.4'-DDD	S23-Jn0014853	NCP	%	74			70-130	Pass	
4.4'-DDE	S23-Jn0014853	NCP	%	75			70-130	Pass	
4.4'-DDT	S23-Jn0014853	NCP	%	78			70-130	Pass	
a-HCH	S23-Jn0014853	NCP	%	77			70-130	Pass	
Aldrin	M23-Jn0024183	NCP	%	108			70-130	Pass	
b-HCH	S23-Jn0014853	NCP	%	86			70-130	Pass	
d-HCH	S23-Jn0014853	NCP	%	79			70-130	Pass	
Dieldrin	S23-Jn0014853	NCP	%	72			70-130	Pass	
Endosulfan I	S23-Jn0014853	NCP	%	76			70-130	Pass	
Endosulfan II	S23-Jn0014853	NCP	%	84			70-130	Pass	
Endosulfan sulphate	S23-Jn0014853	NCP	%	78			70-130	Pass	
Endrin	S23-Jn0014853	NCP	%	94			70-130	Pass	
Endrin aldehyde	S23-Jn0014853	NCP	%	77			70-130	Pass	
Endrin ketone	S23-Jn0014853	NCP	%	74			70-130	Pass	
g-HCH (Lindane)	S23-Jn0014853	NCP	%	73			70-130	Pass	
Heptachlor	S23-Jn0014853	NCP	%	77			70-130	Pass	
Heptachlor epoxide	S23-Jn0014853	NCP	%	59			70-130	Fail	Q08
Hexachlorobenzene	S23-Jn0014853	NCP	%	88			70-130	Pass	
Methoxychlor	S23-Jn0014853	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S23-Jn0014853	NCP	%	106			70-130	Pass	
Dimethoate	S23-Jn0014853	NCP	%	89			70-130	Pass	
Ethion	S23-Jn0014853	NCP	%	83			70-130	Pass	
Fenitrothion	S23-Jn0014853	NCP	%	88			70-130	Pass	
Methyl parathion	S23-Jn0014853	NCP	%	87			70-130	Pass	
Mevinphos	S23-Jn0014853	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M23-Jn0021049	NCP	%	124			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals				Result 1					
Arsenic	B23-Jn0021073	NCP	%	124			75-125	Pass	
Cadmium	B23-Jn0021073	NCP	%	96			75-125	Pass	
Chromium	B23-Jn0021073	NCP	%	87			75-125	Pass	
Copper	B23-Jn0016191	NCP	%	99			75-125	Pass	
Lead	B23-Jn0021073	NCP	%	78			75-125	Pass	
Mercury	B23-Jn0021073	NCP	%	79			75-125	Pass	
Nickel	B23-Jn0021073	NCP	%	76			75-125	Pass	
Zinc	B23-Jn0021073	NCP	%	76			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Benz(a)anthracene	S23-Jn0014853	NCP	%	76			70-130	Pass	
Benzo(b&j)fluoranthene	S23-Jn0014853	NCP	%	101			70-130	Pass	
Benzo(g.h.i)perylene	S23-Jn0014853	NCP	%	83			70-130	Pass	
Benzo(k)fluoranthene	S23-Jn0014853	NCP	%	93			70-130	Pass	
Chrysene	S23-Jn0014853	NCP	%	84			70-130	Pass	
Dibenz(a.h)anthracene	S23-Jn0014853	NCP	%	93			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S23-Jn0014853	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	B23-Jn0016351	CP	%	98			70-130	Pass	
Acenaphthylene	B23-Jn0016351	CP	%	81			70-130	Pass	
Anthracene	B23-Jn0016351	CP	%	83			70-130	Pass	
Benzo(a)pyrene	B23-Jn0016351	CP	%	77			70-130	Pass	
Fluoranthene	B23-Jn0016351	CP	%	100			70-130	Pass	
Fluorene	B23-Jn0016351	CP	%	92			70-130	Pass	
Naphthalene	B23-Jn0016351	CP	%	95			70-130	Pass	
Phenanthrene	B23-Jn0016351	CP	%	82			70-130	Pass	
Pyrene	B23-Jn0016351	CP	%	103			70-130	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B23-Jn0016351	CP	%	83			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B23-Jn0016351	CP	%	90			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B23-Jn0016351	CP	%	75			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B23-Jn0016351	CP	%	90			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B23-Jn0016351	CP	%	88			50-150	Pass	
Perfluorononanoic acid (PFNA)	B23-Jn0016351	CP	%	110			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B23-Jn0016351	CP	%	81			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B23-Jn0016351	CP	%	87			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B23-Jn0016351	CP	%	82			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B23-Jn0016351	CP	%	84			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B23-Jn0016351	CP	%	90			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B23-Jn0016351	CP	%	92			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Jn0016351	CP	%	96			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Jn0016351	CP	%	89			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Jn0016351	CP	%	86			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Jn0016351	CP	%	87			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Jn0016351	CP	%	86			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Jn0016351	CP	%	82			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B23-Jn0016351	CP	%	73			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B23-Jn0016351	CP	%	97			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B23-Jn0016351	CP	%	66			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B23-Jn0016351	CP	%	88			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B23-Jn0016351	CP	%	87			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B23-Jn0016351	CP	%	88			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B23-Jn0016351	CP	%	93			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B23-Jn0016351	CP	%	80			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Jn0016351	CP	%	79			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Jn0016351	CP	%	79			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Jn0016351	CP	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Jn0016351	CP	%	88			50-150	Pass	
Spike - % Recovery									
				Result 1					
Phosphate total (as P)	M23-Jn0023591	NCP	%	120			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	M23-Jn0016916	NCP	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Phenanthrene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	B23-Jn0016349	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B23-Jn0019116	NCP	mg/L	0.002	0.002	<1	30%	Pass	
Cadmium	B23-Jn0019116	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	B23-Jn0019116	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	B23-Jn0019116	NCP	mg/L	0.003	0.003	1.7	30%	Pass	
Lead	B23-Jn0019116	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	B23-Jn0016190	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	B23-Jn0019116	NCP	mg/L	0.004	0.004	9.8	30%	Pass	
Zinc	B23-Jn0019116	NCP	mg/L	0.38	0.39	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B23-Jn0016350	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B23-Jn0016350	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Jn0016350	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Jn0016350	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Jn0016350	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Jn0016350	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Jn0016350	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Jn0016350	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorohexanesulfonic acid (PFHxS)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Jn0016350	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Jn0016350	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M23-Jn0021358	NCP	mg/L	0.15	0.19	20	30%	Pass	
Nitrate & Nitrite (as N)	M23-Jn0021358	NCP	mg/L	1.1	1.1	<1	30%	Pass	
Nitrite (as N)	M23-Jn0021358	NCP	mg/L	0.37	0.37	<1	30%	Pass	
Phosphate total (as P)	R23-Jn0015002	NCP	mg/L	0.02	0.02	4.1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B23-Jn0016352	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B23-Jn0016352	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Jn0016352	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Jn0016352	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Jn0016352	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Jn0016352	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Jn0016352	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Jn0016352	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Jn0016352	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Jn0016352	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Kjeldahl Nitrogen (as N)	B23-Jn0016352	CP	mg/L	9.2	10	11	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B23-Jn0016353	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B23-Jn0016353	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Jn0016353	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Jn0016353	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Jn0016353	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Jn0016353	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Jn0016353	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Jn0016353	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Jn0016353	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Jn0016353	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	B23-Jn0016354	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	B23-Jn0016354	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	B23-Jn0016354	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	B23-Jn0016354	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	B23-Jn0016354	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	B23-Jn0016354	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	B23-Jn0016354	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	B23-Jn0016354	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor epoxide	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Hexachlorobenzene	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	B23-Jn0016354	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	B23-Jn0016354	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	B23-Jn0016354	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	B23-Jn0016354	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethion	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	B23-Jn0016354	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	B23-Jn0016354	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	B23-Jn0016354	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	B23-Jn0016354	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	B23-Jn0016354	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	B23-Jn0016354	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised by:

Paige Howarth	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Jonathon Angell	Senior Analyst-Metal
Jonathon Angell	Senior Analyst-Organic
Jonathon Angell	Senior Analyst-PFAS
Jonathon Angell	Senior Analyst-Volatile
Joseph Edouard	Senior Analyst-Organic
Mary Makarios	Senior Analyst-Inorganic
Sarah McCallion	Senior Analyst-PFAS



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2176 Ph: 02 8784 8555 E:samples.sydney@alsenviro.com
☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304 Ph:02 4968 9433 E:samples.newcastle@alsenviro.com
☐ Brisbane: 32 Shand St, Stafford QLD 4053 Ph:07 3243 7222 E:samples.brisbane@alsenviro.com
☐ Townsville: 14-15 Desma Ct, Bohle QLD 4818 Ph:07 4796 0600 E: townsville.environmental@alsenviro.com
☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171 Ph:03 8549 9600 E: samples.melbourne@alsenviro.com
☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5095 Ph: 08 8359 0890 E:adelaide@alsenviro.com
☐ Perth: 10 Hod Way, Malaga WA Ph: 08 9209 7655 E: samples.perth@
☐ Launceston: 27 Wellington St, La Ph: 03 6331 2158 E: launceston@a

Environmental Division
Brisbane
Work Order Reference
EB2317397

Telephone : + 61-7-3243 7222

CLIENT:	Douglas Partners Pty Ltd	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	☐ Standard TAT (List due date):
OFFICE:	Brisbane		☐ Non Standard or urgent TAT (List due date):
PROJECT:	219361.01	ALS QUOTE NO.:	EN-222-18
ORDER NUMBER:			
PROJECT MANAGER:	Rob Muller	CONTACT PH:	(07) 3237 8900
SAMPLER:	Chloe Jones	SAMPLER MOBILE:	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to [redacted], rob.muller@douglaspartners.com.au			
Email Invoice to apinvoices@douglaspartners.com.au			

COC SEQUENCE NUMBER (Circle)
COC: 1 2 3 4 5 6 7
OF: 1 2 3 4 5 6 7

FOR LABORATORY
Custody Seal Intact?
Freeze / frozen ice bricks receipt?
Random Sample Tempera
Other comment:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	
DATE/TIME:	DATE/TIME: 8-6-23 17:61	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	W-26	W-12	PFAS						Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	MW51	2/6/23	W		6	X	X	X						
				TOTAL	0	0	0	0	0	0	0	0	0	

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.

CERTIFICATE OF ANALYSIS

Work Order	: **EB2317397**	Page	: 1 of 9
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: ROB MULLER	Contact	: John Pickering
Address	: 439 MONTAGUE ROAD WEST END QLD, AUSTRALIA 4101	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8634
Project	: 219361.01	Date Samples Received	: 08-Jun-2023 17:51
Order number	: ----	Date Analysis Commenced	: 08-Jun-2023
C-O-C number	: ----	Issue Date	: 14-Jun-2023 17:41
Sampler	: CHLOE JONES		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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
- 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*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Timothy Creagh	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

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 Contract 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.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW51	----	----	----	----
				Sampling date / time	02-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2317397-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.002**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.006**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.017**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L		<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L		<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L		<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L		<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L		<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.5	µg/L		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW51	----	----	----	----
				Sampling date / time	02-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2317397-001	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.5	µg/L		<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW51	----	----	----	----
				Sampling date / time	02-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2317397-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		**140**	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		**320**	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		**1370**	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		**110**	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		**1800**	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		**110**	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		**110**	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		**380**	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		**1400**	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		**1780**	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		**380**	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW51	----	----	----	----
				Sampling date / time	02-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2317397-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW51	----	----	----	----
				Sampling date / time	02-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2317397-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		77.7	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		87.6	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		26.6	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		67.5	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		63.1	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		64.5	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		75.4	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		66.7	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW51	----	----	----	----
				Sampling date / time	02-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2317397-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**104**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**96.9**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**101**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	----	----	----	----
13C8-PFOA	----	0.02	%		**104**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	45	139
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	45	139
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	72
2-Chlorophenol-D4	93951-73-6	27	130
2.4.6-Tribromophenol	118-79-6	19	181
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	14	146
Anthracene-d10	1719-06-8	35	137
4-Terphenyl-d14	1718-51-0	36	154
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	66	138
Toluene-D8	2037-26-5	79	120
4-Bromofluorobenzene	460-00-4	74	118
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2317397**	Page	: 1 of 11
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: ROB MULLER	Contact	: John Pickering
Address	: 439 MONTAGUE ROAD WEST END QLD, AUSTRALIA 4101	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8634
Project	: 219361.01	Date Samples Received	: 08-Jun-2023
Order number	: ----	Date Analysis Commenced	: 08-Jun-2023
C-O-C number	: ----	Issue Date	: 14-Jun-2023
Sampler	: CHLOE JONES		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Timothy Creagh	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

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.

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: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5102965)									
EB2316962-008	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.1 µg/L	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	2 µg/L	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<5 µg/L	0.006	0.0	No Limit
EB2317195-033	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.070	0.072	2.3	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.023	0.023	0.0	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 5102974)									
EB2317227-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EB2317371-009	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5102106)									
EB2317103-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EB2317105-009	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5102106)									
EB2317103-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EB2317105-009	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	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 (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 5102106)									
EB2317103-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EB2317105-009	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5103916)									
EB2317397-001	MW51	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2317371-011	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.22	<0.22	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.27	0.29	7.2	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5103916)									
EB2317397-001	MW51	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EB2317371-011	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.29	0.30	4.2	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5103916) - continued									
EB2317371-011	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.04	<0.04	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.04	<0.04	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5103916)									
EB2317397-001	MW51	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2317371-011	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5103916)									
EB2317397-001	MW51	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	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 (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5103916) - continued									
EB2317397-001	MW51	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2317371-011	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5103916)									
EB2317397-001	MW51	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EB2317371-011	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.61	0.64	4.8	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.27	0.29	7.1	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.56	0.59	5.2	0% - 20%

Method Blank (MB) and Laboratory Control Sample (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 Sample (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: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5102965)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.7	88.0	116
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	96.7	88.0	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.2	87.0	113
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.8	88.0	114
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.9	89.0	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.9	89.0	113
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.6	87.0	113
EG035F: Dissolved Mercury by FIMS (QCLot: 5102974)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	99.6	84.0	118
EP068A: Organochlorine Pesticides (OC) (QCLot: 5101604)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	74.0	60.3	131
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	67.6	45.1	126
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	75.6	63.1	128
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	74.6	60.2	130
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	74.4	58.6	120
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	67.0	53.8	118
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	65.6	53.7	120
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	67.0	57.0	122
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	66.6	56.3	121
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	66.9	56.5	123
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	67.5	55.8	122
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	66.6	55.3	124
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	67.5	52.8	122
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	76.3	48.9	131
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	72.2	50.0	121
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	69.1	46.5	123
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	73.0	42.0	122
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	67.1	49.8	130
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	72.2	39.4	134
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	68.4	51.4	129

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5101604) - continued								
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	71.5	45.7	139
EP068: Total Chlordane (sum)	----	0.5	µg/L	<0.5	----	----	----	----
EP068: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.5	µg/L	<0.5	----	----	----	----
EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5101604)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	69.0	53.2	133
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	72.3	44.2	158
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	# 1.8	10.0	32.6
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	65.9	27.6	153
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	75.9	73.0	123
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	70.2	51.6	122
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	75.2	45.2	139
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	74.6	47.5	135
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	74.0	53.4	133
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	70.9	56.3	125
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	83.6	37.1	144
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	72.9	49.8	131
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	67.4	37.0	131
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	68.5	47.3	127
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	69.4	16.0	150
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	64.1	45.5	128
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	70.6	39.1	129
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	67.8	38.4	134
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	84.6	27.5	146
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5101603)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	64.7	50.0	110
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	71.0	49.0	124
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	72.4	55.0	114
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	73.9	55.0	119
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	74.5	51.0	127
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	79.1	55.0	127
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	74.5	55.0	127
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	73.8	54.0	126

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5101603) - continued								
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	75.4	47.0	136
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	75.5	51.0	129
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	83.2	55.0	132
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	79.0	58.0	128
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	75.5	55.0	131
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	82.5	52.0	133
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	83.8	48.0	137
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	80.4	53.0	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5101605)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	1192 µg/L	95.1	51.9	126
EP071: C15 - C28 Fraction	----	100	µg/L	<100	1390 µg/L	87.5	51.4	124
EP071: C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5102106)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	180 µg/L	98.3	77.0	122
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5101605)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	1592 µg/L	92.8	51.0	133
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	932 µg/L	92.8	49.5	123
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5102106)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	225 µg/L	104	76.0	121
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080: BTEXN (QCLot: 5102106)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	102	79.8	115
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	100	78.6	116
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	102	77.3	115
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	105	82.0	118
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	109	86.0	119
EP080: Total Xylenes	----	2	µg/L	<2	----	----	----	----
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	89.3	77.8	116
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5103916)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	120	72.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5103916) - continued								
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	126	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	117	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	104	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	115	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	108	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5103916)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	117	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	114	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	115	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	110	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	108	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	119	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	124	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	124	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	125	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	125	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5103916)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	129	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	118	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	114	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	121	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	130	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	133	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	124	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5103916)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	116	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	112	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	126	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	125	64.2	133
EP231P: PFAS Sums (QCLot: 5103916)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS: Spike Recovery (%)	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 5103916) - continued								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

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: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5102965)							
EB2316840-001	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	98.8	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	96.2	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	99.2	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	97.4	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	80.2	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	95.7	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	96.8	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 5102974)							
EB2317227-002	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	90.9	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5102106)							
EB2317104-001	Anonymous	EP080: C6 - C9 Fraction	----	40 µg/L	90.8	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5102106)							
EB2317104-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	96.5	70.0	130
EP080: BTEXN (QCLot: 5102106)							
EB2317104-001	Anonymous	EP080: Benzene	71-43-2	10 µg/L	100	70.0	130
		EP080: Toluene	108-88-3	10 µg/L	97.0	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5103916)							
EB2317371-012	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	127	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	119	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	111	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	110	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.3	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	98.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5103916)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5103916) - continued							
EB2317371-012	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	115	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	116	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	114	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	108	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	90.5	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	105	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	96.4	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	95.8	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	93.2	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	103	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	102	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5103916)							
EB2317371-012	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	104	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	97.2	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	101	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	114	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	110	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	101	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	95.1	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5103916)							
EB2317371-012	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	100.0	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	124	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	101	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	97.9	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2317397**	Page	: 1 of 6
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: ROB MULLER	Telephone	: +61 7 3552 8634
Project	: 219361.01	Date Samples Received	: 08-Jun-2023
Site	: ----	Issue Date	: 14-Jun-2023
Sampler	: CHLOE JONES	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP068B: Organophosphorus Pesticides (OP)	QC-5101604-002	----	**Monocrotophos**	6923-22-4	1.8 %	10.0-32.6%	**Recovery less than lower control limit**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	0				
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	14	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	14	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
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: **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*
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
MW51	**02-Jun-2023**	**----**	----	**----**	**10-Jun-2023**	29-Nov-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
MW51	**02-Jun-2023**	**----**	----	**----**	**09-Jun-2023**	30-Jun-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
MW51	**02-Jun-2023**	**09-Jun-2023**	09-Jun-2023	✓	**09-Jun-2023**	19-Jul-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068)							
MW51	**02-Jun-2023**	**09-Jun-2023**	09-Jun-2023	✓	**09-Jun-2023**	19-Jul-2023	✓

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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
MW51	**02-Jun-2023**	**09-Jun-2023**	09-Jun-2023	✓	**10-Jun-2023**	19-Jul-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
MW51	**02-Jun-2023**	**09-Jun-2023**	09-Jun-2023	✓	**10-Jun-2023**	19-Jul-2023	✓
Clear glass VOC vial - HCl (EP080)							
MW51	**02-Jun-2023**	**09-Jun-2023**	16-Jun-2023	✓	**09-Jun-2023**	16-Jun-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
MW51	**02-Jun-2023**	**09-Jun-2023**	09-Jun-2023	✓	**10-Jun-2023**	19-Jul-2023	✓
Clear glass VOC vial - HCl (EP080)							
MW51	**02-Jun-2023**	**09-Jun-2023**	16-Jun-2023	✓	**09-Jun-2023**	16-Jun-2023	✓
EP080: BTEXN							
Clear glass VOC vial - HCl (EP080)							
MW51	**02-Jun-2023**	**09-Jun-2023**	16-Jun-2023	✓	**09-Jun-2023**	16-Jun-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
MW51	**02-Jun-2023**	**10-Jun-2023**	29-Nov-2023	✓	**14-Jun-2023**	29-Nov-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
MW51	**02-Jun-2023**	**10-Jun-2023**	29-Nov-2023	✓	**14-Jun-2023**	29-Nov-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
MW51	**02-Jun-2023**	**10-Jun-2023**	29-Nov-2023	✓	**14-Jun-2023**	29-Nov-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
MW51	**02-Jun-2023**	**10-Jun-2023**	29-Nov-2023	✓	**14-Jun-2023**	29-Nov-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
MW51	**02-Jun-2023**	**10-Jun-2023**	29-Nov-2023	✓	**14-Jun-2023**	29-Nov-2023	✓

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: **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)							
Dissolved Mercury by FIMS	EG035F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	14	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	**0.00**	**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	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	**50.00**	**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	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	**50.00**	**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	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	14	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	**0.00**	**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	20	**5.00**	**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
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. 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.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered 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).
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

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

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

Appendix K

Summary of Results

Douglas Partners
Geotechnics / Environment / Groundwater

Table K1: Summary of Laboratory Results – Metals, TRH, BTEX, PAH

			Metals								TRH						BTEX				PAH		
			Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ
		PQL	2	0.5	5	5	5	0.1	5	5	20	50	20	50	100	100	0.1	0.1	0.1	0.1	0.5	0.5	0.5
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7/0.1	0 - 0.1 m	25 May 2023	**7.3**	<0.5	**10**	**51**	**25**	<0.1	**10**	**83**	<20	<50	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
8/0.1	0 - 0.1 m	29 May 2023	**6.4**	<0.5	**8.2**	**28**	**23**	<0.1	**7.6**	**54**	<20	<50	<20	<50	**110**	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
9/0.5	0.4 - 0.5 m	24 May 2023	**6.8**	<0.5	**17**	**27**	**12**	<0.1	**15**	**54**	<20	<50	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
S1	0.4 - 0.5 m	24 May 2023	**6.4**	<0.5	**15**	**26**	**11**	<0.1	**20**	**53**	<20	<50	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
R1	0.4 - 0.5 m	24 May 2023	**6**	<1	**8**	**19**	**7**	<0.1	**16**	**33**	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
10/0.1	0 - 0.1 m	29 May 2023	**6.1**	<0.5	**7.3**	**11**	**15**	<0.1	**5.7**	**33**	<20	<50	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
11/0.1	0 - 0.1 m	29 May 2023	**7.5**	<0.5	**15**	**25**	**15**	<0.1	**14**	**95**	<20	<50	<20	<50	**300**	**150**	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
12/0.1	0 - 0.1 m	29 May 2023	**10**	<0.5	**12**	**35**	**68**	**0.1**	**9.9**	**150**	<20	<50	<20	<50	**240**	**130**	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
13/0.1	0 - 0.1 m	29 May 2023	**4.8**	<0.5	**6.9**	**14**	**13**	<0.1	**5.6**	**39**	<20	<50	<20	<50	**160**	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
14/0.1	0 - 0.1 m	31 May 2023	**3.6**	<0.5	**6**	**9**	**10**	<0.1	<5	**29**	<20	<50	<20	<50	**130**	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
15/0.1	0 - 0.1 m	30 May 2023	**5.7**	<0.5	**12**	**23**	**20**	<0.1	**8.6**	**55**	<20	<50	<20	<50	**190**	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
16/0.1	0 - 0.1 m	29 May 2023	**4.6**	<0.5	**8.8**	**10**	**12**	<0.1	**7.8**	**36**	<20	<50	<20	<50	**130**	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
17/0.1	0 - 0.1 m	30 May 2023	**10**	<0.5	**8**	**14**	**18**	<0.1	**6.9**	**46**	<20	<50	<20	<50	**120**	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
18/0.1	0 - 0.1 m	31 May 2023	**6.8**	<0.5	**7.8**	**19**	**24**	<0.1	**5.4**	**41**	<20	<50	<20	<50	**110**	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
19/0.1	0 - 0.1 m	30 May 2023	**5.8**	<0.5	**8.2**	**21**	**19**	<0.1	**7.6**	**47**	<20	<50	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
20/0.1	0 - 0.1 m	29 May 2023	**5.3**	<0.5	**9**	**19**	**17**	<0.1	**8.8**	**71**	<20	<50	<20	<50	**110**	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -
20/0.5	0.4 - 0.5 m	29 May 2023	**3.6**	<0.5	**9.3**	**18**	**16**	<0.1	**13**	**31**	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 760	240000 200	1500 1800	730 -	6000 840	400000 1100	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -

Lab result

HIL/HSL value EIL/ESL value

HIL/HSL exceedance EIL/ESL exceedance HIL/HSL and EIL/ESL exceedance ML exceedance ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab, refer to the lab report **Blue** = DC exceedance HSL 0-<1 Exceedance

Bold = Lab detections - = Not tested or No HIL/HSL/EIL/ESL (as applicable) or Not applicable NL = Non limiting AD = Asbestos detected NAD = No Asbestos detected

HIL = Health investigation level HSL = Health screening level (excluding DC) EIL = Ecological investigation level ESL = Ecological screening level ML = Management Limit DC = Direct Contact HSL

Notes:

a QA/QC replicate of sample listed directly below the primary sample

b Reported naphthalene laboratory result obtained from BTEXN suite

c Criteria applies to DDT only

Site Assessment Criteria (SAC):

Refer to the SAC section of report for information of SAC sources and rationale. Summary information as follows:

SAC based on generic land use thresholds for Commercial/ industrial D

HIL D	Commercial / Industrial (NEPC, 2013)
HSL D	Commercial / Industrial (vapour intrusion) (NEPC, 2013)
DC HSL D	Direct contact HSL D Commercial/Industrial (direct contact) (CRC CARE, 2011)
EIL/ESL C/Ind	Commercial and Industrial (NEPC, 2013)
ML C/Ind	Commercial and Industrial (NEPC, 2013)

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Table K2: Summary of Laboratory Results – OCP, OPP, PCB

			OCP												OPP	PCB							
			DDD	DDT+DDE+DDD [c]	DDE	DDT	Aldrin & Dieldrin	Endosulfan I	Endosulfan II	Endosulfan Sulphate	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Arochlor 1016	Total PCB	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260
		PQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7/0.1	0 - 0.1 m	25-May-23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
8/0.1	0 - 0.1 m	29 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
9/0.5	0.4 - 0.5 m	24 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
S1	0.4 - 0.5 m	24 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
R1	0.4 - 0.5 m	24 May 2023	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	NT	<0.1	NT	NT	NT	NT	NT	NT
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
10/0.1	0 - 0.1 m	29 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
11/0.1	0 - 0.1 m	29 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
12/0.1	0 - 0.1 m	29 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
13/0.1	0 - 0.1 m	29 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
14/0.1	0 - 0.1 m	31 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
15/0.1	0 - 0.1 m	30 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
16/0.1	0 - 0.1 m	29 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
17/0.1	0 - 0.1 m	30 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
18/0.1	0 - 0.1 m	31 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
19/0.1	0 - 0.1 m	30 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -
20/0.1	0 - 0.1 m	29 May 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			- -	3600 640	- -	- 640	45 -	- -	- -	- -	100 -	50 -	80 -	2500 -	2000 -	- -	7 -	- -	- -	- -	- -	- -	- -

Lab result

HIL/HSL value EIL/ESL value

HIL/HSL exceedance EIL/ESL exceedance HIL/HSL and EIL/ESL exceedance ML exceedance ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab, refer to the lab report **Blue** = DC exceedance HSL 0-<1 Exceedance

Bold = Lab detections - = Not tested or No HIL/HSL/EIL/ESL (as applicable) or Not applicable NL = Non limiting AD = Asbestos detected NAD = No Asbestos detected

HIL = Health investigation level HSL = Health screening level (excluding DC) EIL = Ecological investigation level ESL = Ecological screening level ML = Management Limit DC = Direct Contact HSL

Notes:

a QA/QC replicate of sample listed directly below the primary sample

b Reported naphthalene laboratory result obtained from BTEXN suite

c Criteria applies to DDT only

Site Assessment Criteria (SAC):

Refer to the SAC section of report for information of SAC sources and rationale. Summary information as follows:

SAC based on generic land use thresholds for Commercial/ industrial D

HIL D	Commercial / Industrial (NEPC, 2013)
HSL D	Commercial / Industrial (vapour intrusion) (NEPC, 2013)
DC HSL D	Direct contact HSL D Commercial/Industrial (direct contact) (CRC CARE, 2011)
EIL/ESL C/Ind	Commercial and Industrial (NEPC, 2013)
ML C/Ind	Commercial and Industrial (NEPC, 2013)

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Table K3: Summary of Laboratory Results – Phenols

			Phenols												
			Phenol	2-Chlorophenol	2-Methylphenol	3- & 4-Methylphenol	2-Nitrophenol	2.4-Dimethylphenol	2.4-Dichlorophenol	2.6-Dichlorophenol	4-Chloro-3-Methylphenol	2.4.6-Trichlorophenol	2.4.5-Trichlorophenol	Pentachlorophenol	Cresols
		LOR	0.5	0.5	0.2	0.4	1	0.5	0.5	0.5	1	1	1	1	0.5
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7/0.1	0 - 0.1 m	25 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
8/0.1	0 - 0.1 m	29 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
9/0.5	0.4 - 0.5 m	24 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
S1	0.4 - 0.5 m	24 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
R1	0.4 - 0.5 m	24 May 2023	<0.5	<0.5	<0.2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
10/0.1	0 - 0.1 m	29 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
11/0.1	0 - 0.1 m	29 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
12/0.1	0 - 0.1 m	29 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
13/0.1	0 - 0.1 m	29 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
14/0.1	0 - 0.1 m	31 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
15/0.1	0 - 0.1 m	30 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
16/0.1	0 - 0.1 m	29 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
17/0.1	0 - 0.1 m	30 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
18/0.1	0 - 0.1 m	31 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
19/0.1	0 - 0.1 m	30 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -
20/0.1	0 - 0.1 m	29 May 2023	<0.5	<0.5	<0.2	<0.4	<1	<0.5	<0.5	<0.5	<1	<1	<1	<1	<0.5
			240,000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	660 -	25,000 -

Lab result

HIL/HSL value EIL/ESL value

HIL/HSL exceedance EIL/ESL exceedance HIL/HSL and EIL/ESL exceedance ML exceedance ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab, refer to the lab report **Blue** = DC exceedance HSL 0-<1 Exceedance

Bold = Lab detections - = Not tested or No HIL/HSL/EIL/ESL (as applicable) or Not applicable NL = Non limiting AD = Asbestos detected NAD = No Asbestos detected

HIL = Health investigation level HSL = Health screening level (excluding DC) EIL = Ecological investigation level ESL = Ecological screening level ML = Management Limit DC = Direct Contact HSL

Notes:

a QA/QC replicate of sample listed directly below the primary sample

b Reported naphthalene laboratory result obtained from BTEXN suite

c Criteria applies to DDT only

Site Assessment Criteria (SAC):

Refer to the SAC section of report for information of SAC sources and rationale. Summary information as follows:

SAC based on generic land use thresholds for Commercial/ industrial D

HIL D	Commercial / Industrial (NEPC, 2013)
HSL D	Commercial / Industrial (vapour intrusion) (NEPC, 2013)
DC HSL D	Direct contact HSL D Commercial/Industrial (direct contact) (CRC CARE, 2011)
EIL/ESL C/Ind	Commercial and Industrial (NEPC, 2013)
ML C/Ind	Commercial and Industrial (NEPC, 2013)

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Table K4: Summary of Laboratory Results - PFAS (ug/kg)

			Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										
			PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA
		LOR	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Sample ID	Depth	Sample Date	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
7/0.1	0.0-0.1 m	25/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
8/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
9/0.5	0.0-0.1 m	24/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
S1	0.0-0.1 m	24/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
R1	0.0-0.1 m	24/05/2023	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5
10/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
11/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
12/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
13/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
14/0.1	0.0-0.1 m	31/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
15/0.1	0.0-0.1 m	30/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
16/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
17/0.1	0.0-0.1 m	30/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
18/0.1	0.0-0.1 m	31/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
19/0.1	0.0-0.1 m	30/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
20/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Site Assessment Criteria																			
HIL-D[4]			~	~	~	~	~	~	~	~	~	~	50,000	~	~	~	~	~	~
EGV - Ecological direct exposure[5]			~	~	~	~	1,000	~	~	~	~	~	10,000	~	~	~	~	~	~
EGV - Ecological indirect exposure[6]			~	~	~	~	3	~	~	~	~	~	3	~	~	~	~	~	~

Notes

4	NEMP (2025) Table 5: Human health investigation levels (HIL) for industrial/commercial land use.
5	NEMP (2025) Table 6: Ecological guideline value (EGV) for ecological direct exposure in all land use scenarios.
6	NEMP (2025) Table 6: Ecological guideline value (EGV) for ecological indirect exposure in all land use scenarios.
Bold	Indicates detection of an analyte
~	No guideline available at time of investigation
<LOR	Less than the laboratory's limit of reporting
Green	Analyte concentrations greater than adopted IEDEV
Yellow	Analyte concentrations greater than adopted HHSV
	This table has been produced in colour to indicate exceedences of relevant criteria. Reproduction should be carried out in colour.

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Table K4: Summary of Laboratory Results - PFAS (continued) (ug/kg)

			Perfluoroalkyl Sulfonamides							(n:2) Fluorotelomer Sulfonic Acids				PFAS Sums	
			FOSA	MeFOSA	EtFOSA	MeFOSE	EtFOSE	MeFOSAA	EtFOSAA	4:2 FTSA	6:2 FTSA	8:2 FTSA	10:2 FTSA	Sum of PFAS	Sum of PFHxS and PFOS
		LOR	5	5	5	5	5	10	10	5	10	5	5	50	5
Sample ID	Depth	Sample Date	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
7/0.1	0.0-0.1 m	25/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
8/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
9/0.5	0.0-0.1 m	24/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
S1	0.0-0.1 m	24/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
R1	0.0-0.1 m	24/05/2023	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2
10/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
11/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
12/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
13/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
14/0.1	0.0-0.1 m	31/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
15/0.1	0.0-0.1 m	30/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
16/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
17/0.1	0.0-0.1 m	30/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
18/0.1	0.0-0.1 m	31/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
19/0.1	0.0-0.1 m	30/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
20/0.1	0.0-0.1 m	29/05/2023	<5	<5	<5	<5	<5	<10	<10	<5	<10	<5	<5	<50	<5
Site Assessment Criteria															
HIL-D[4]			~	~	~	~	~	~	~	~	~	~	~	~	20,000
EGV - Ecological direct exposure[5]			~	~	~	~	~	~	~	~	~	~	~	~	~
EGV - Ecological indirect exposure[6]			~	~	~	~	~	~	~	~	~	~	~	~	~

Notes

4	NEMP (2025) Table 5: Human health investigation levels (HIL) for industrial/commercial land use.
5	NEMP (2025) Table 6: Ecological guideline value (EGV) for ecological direct exposure in all land use scenarios.
6	NEMP (2025) Table 6: Ecological guideline value (EGV) for ecological indirect exposure in all land use scenarios.
Bold	Indicates detection of an analyte
~	No guideline available at time of investigation
<LOR	Less than the laboratory's limit of reporting
Green	Analyte concentrations greater than adopted IEDEV
Yellow	Analyte concentrations greater than adopted HHSV
	This table has been produced in colour to indicate exceedences of relevant criteria. Reproduction should be carried out in colour.

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Table K5: Summary of Groundwater and Surface Water Field Parameters

Sample ID	Date Sampled	Total Bore Depth (mbGL)	SWL (mbGL)	Temp. (°C)	Field Parameters			
					pH		EC (µS/cm)	Turbidity (NTU)
					Lower Limit	Upper Limit		
MW8	2/06/2023	12.75	11.37	17	8.4		2,310	728
MW9	2/06/2023	20.03	15.36	17	6.7		4,640	50
SW1	2/06/2023	-	-	14.4	8.1		390	98
SW2	2/06/2023	-	-	18.7	8.6		690	154
Site Assessment Criteria								
DES[1]					6.5	8.0	940	7
ADWG[2]					6.5	8.5	~	5
ANZECC[3]					6.5	8	125-2200	6-50

Notes

1	DES (2022) Environmental Protection (Water and Wetland Biodiversity) Policy 2019 - Logan River Environmental \
2	ADWG (2011), v 3.8, updated 2022, Table 10.6, guideline values for physical and chemical characteristics
3	ANZECC (2000) Tables 3.3.2 and 3.3.3 Default trigger values for slightly disturbed ecosystems for south-east Aust
SWL	Standing water level
mbGL	metres below ground level
maGL	metres above ground level
N/A	Not applicable
-	Not measured
~	No guideline available at time of investigation
Purple	cells contain levels of an analyte greater than DES (2022) (or lower than lower limits)
Blue	cells contain levels of an analyte greater than ADWG (2011)
Green	cells contain levels of an analyte outside ANZECC (2000) criteria
	This table has been produced in colour to indicate exceedences of relevant criteria. Reproduction should be carrie

Table K6: Summary of Laboratory Results (Water) – Metals/Metalloids

Sample ID	Sample Date	Analyte (µg/L)							
		Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
Laboratory Limit of Reporting		*1*	*0.2*	*1*	*1*	*1*	*0.1*	*1*	*5*
MW8	2/06/2023	**2**	<0.2	**2**	**29**	**9**	**0.3**	**10**	**43**
MW9	2/06/2023	**1**	<0.2	**3**	**5**	**2**	**0.1**	**7**	**15**
MWR1	2/06/2023	<1	<0.2	**2**	**5**	**3**	<0.1	**7**	**16**
MWS1	2/06/2023	<1	<0.1	<1	**2**	<1	<0.1	**6**	**17**
SW1	2/06/2023	**2**	<0.2	<1	**2**	**1**	<0.1	**1**	**8**
SW2	2/06/2023	**16**	<0.2	**20**	**64**	**57**	**0.1**	**29**	**130**
Site Assessment Criteria									
GIL[1]		24*/ 13'	0.2	1***	1.4	3.4	0.06	11	8
ADWG[2]		10	2	50***	2000	10	1	20	~
ADWG[3]		~	~	~	1000	~	~	~	3000
ANZG 95%[4]		24*#	0.2#	1***#	1.4#	3.4#	0.6^	11#	8#

Notes/Legend

1	NEPM Schedule B1 Table 1C Groundwater Investigation Levels (GILs), Fresh waters
2	ADWG (2011), v 3.8, updated September 2022, Part 5, health considerations for drinking water
3	ADWG (2011), v 3.8, updated September 2022, Part 5, aesthetic considerations for drinking water
4	ANZG (2018) - Trigger values for freshwaters, 95% level of protection
<LOR	Less than the laboratory's limit of reporting
#	Based on pH > 6.5
*	Value for As(III)
'	Value for As(V)
**	Value relates to Cr(III)
***	Value for Cr (VI), hexavalent chromium
^	Inorganic Mercury
-	Not tested
~	No guideline available at time of investigation
#	Recommended for application for slightly to moderately disturbed ecosystems.
~	DGV may not protect key test species from chronic toxicity (this refers to experimental chronic values or geometric mean for species).
,	Chemical for which possible bioaccumulation and secondary poisoning effects should be considered.
+	To account for the bioaccumulating nature of this toxicant, it is recommended that the 99% species protection level DGV is used for slightly to moderately disturbed systems. Also see general comments.
Orange	cells contain levels of an analyte greater than GIL
Light orange	concentration was below laboratory LOR, however LOR exceeded GIL
Blue	cells contain analytes greater than ADWG (2011)
Green	cells contain levels of an analyte greater than ANZG (2018)
	This table has been produced in colour to indicate exceedences of relevant criteria. Reproduction should be carried out in colour.

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Table K7: Summary of Laboratory Results (Water) – TRH, BTEXN

Sample ID	Sample Date	Analyte (µg/L)													
		Naphthalene	F1	C_6-C_{10}	F2	$>C_{10}$-C_{16}	$>C_{16}$-C_{34}	$>C_{34}$-C_{40}	Sum $>C_{10}$-C_{40}	Benzene	Toluene	Ethyl-benzene	m&p - Xylenes	o-Xylene	Total xylenes
Laboratory Limit of Reporting		*10*	*20*	*20*	*50*	*50*	*100*	*100*	*100*	*1*	*1*	*1*	*2*	*1*	*3*
MW8	2/06/2023	<10	<200	<200	**2,500**	**2,500**	**6,000**	<100	**8,500**	<10	<10	<10	<20	<10	<30
MW9	2/06/2023	<10	**160**	**160**	**290**	**290**	**1,600**	<100	**1,890**	<1	<1	<1	<2	<1	<3
MWR1	2/06/2023	<10	**140**	**140**	**270**	**270**	**1,300**	<100	**1,570**	<1	<1	<1	<2	<1	<3
MWS1	2/06/2023	<5	**110**	**110**	**380**	**380**	**1,400**	<100	**1,780**	<1	<2	<2	<2	<2	<2
SW1	2/06/2023	<10	<20	<20	<50	<50	**200**	<100	**200**	<1	<1	<1	<2	<1	<3
SW2	2/06/2023	<10	<20	<20	<50	<50	**700**	<100	**700**	<1	<1	<1	<2	<1	<3
Site Assessment Criteria															
GIL[1]		16	~	~	~	~	~	~	~	950	~	~	200*	350	~
ADWG[2]		~	~	~	~	~	~	~	~	1	800	300	~	~	600
ADWG[3]		~	~	~	~	~	~	~	~	~	25	3	~	~	20
ANZG[4]		16#	~	~	~	~	~	~	~	950#	180#	80#	75**	350#	~
HSL-D[5] (2 m to <4 m) Sand		NL	6,000	~	6,000	~	~	~	~	5,000	NL	NL	NL	NL	NL
HSL-D[5] (4 m to <8 m) Sand		NL	6,000	~	6,000	~	~	~	~	5,000	NL	NL	NL	NL	NL
HSL-D[16] (8 m+) Sand		NL	7,000	~	NL	~	~	~	~	5,000	NL	NL	NL	NL	NL

Notes

1	NEPM Schedule B1 Table 1C Groundwater Investigation Levels (GILs), Fresh waters
2	ADWG (2011), v 3.8, updated September 2022, Part 5, health considerations for drinking water
3	ADWG (2011), v 3.8, updated September 2022, Part 5, aesthetic considerations for drinking water
4	ANZG (2018) - Trigger values for freshwaters, 95% level of protection
5	NEPM Schedule B1 Table 1A(4) Groundwater HSLs for vapour intrusion for commercial industrial premises
<LOR	Less than the laboratory's limit of reporting
-	Not tested
~	No guideline available at time of investigation
~	Figure may not protect key test species from chronic toxicity.
*	Value for p-xylene
**	Value for m-xylene
#	Recommended for application for slightly to moderately disturbed ecosystems.
Orange	cells contain levels of an analyte greater than GIL
Blue	cells contain levels of an analyte greater than ADWG (2011)
Green	cells contain levels of an analyte greater than ANZG (2018)
Pink	cells contain levels of an analyte greater than the HSL-D
	This table has been produced in colour to indicate exceedences of relevant criteria. Reproduction should be carried out in colour.

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Table K8: Summary of Laboratory Results (Water) – PAH

Sample ID	Sample Date	Analyte (µg/L)																
		Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH
Laboratory Limit of Reporting		*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
MW8	2/06/2023	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW9	2/06/2023	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MWR1	2/06/2023	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MWS1	2/06/2023	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW1	2/06/2023	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SW2	2/06/2023	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Site Assessment Criteria																		
GIL[1]		~	~	~	~	~	~	~	~	~	~	~	~	~	16	~	~	~
ADWG[2]		~	~	~	~	0.01	~	~	~	~	~	~	~	~	~	~	~	~
ADWG[3]		~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~
ANZG[4]		~	~	0.4	~	0.2	~	~	~	~	~	1.4	~	~	16	2	~	~

Notes	
1	NEPM Schedule B1 Table 1C Groundwater Investigation Levels (GILs), Fresh waters
2	ADWG (2011), v 3.8, updated September 2022, Part 5, health considerations for drinking water
3	ADWG (2011), v 3.8, updated September 2022, Part 5, health considerations for aesthetic water
4	ANZG (2018) - Trigger values for freshwaters, 95% level of protection
<LOR	Less than the laboratory's limit of reporting
-	Not tested
~	No guideline available at time of investigation
+	To account for the bioaccumulating nature of this toxicant, it is recommended that the 99% species protection level DGV is used for slightly to moderately disturbed systems. Also see General comm
Orange	cells contain levels of an analyte greater than GIL
Blue	cells contain levels of an analyte greater than ADWG (2011)
Light blue	concentration was below laboratory LOR, however LOR exceeded ADWG
Green	cells contain levels of an analyte greater than ANZG (2018)
Light green	concentration was below laboratory LOR, however LOR exceeded ANZG guideline

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Table K9: Summary of Laboratory Results (Water) – OCP

Sample ID	Sample Date	Analyte (µg/L)																					
		Aldrin	a-HCH	b-HCH	d-HCH	g-HCH	Total Chlordane (sum)	Dieldrin	Aldrin & Dieldrin (sum)	4.4`-DDE	4.4`-DDD	4.4`-DDT	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endosulfan (sum)	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor
Laboratory Limit of Reporting		*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
MW8	2/06/2023	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW9	2/06/2023	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MWR1	2/06/2023	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MWS1	2/06/2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2
SW1	2/06/2023	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SW2	2/06/2023	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Site Assessment Criteria																							
GIL[1]		~	~	~	~	~	0.03	~	~	~	~	0.006	~	~	~	0.03	0.01	~	~	0.01	~	~	~
ADWG[2]		~	~	~	~	~	2	~	3	~	~	9	~	~	~	20	~	~	~	0.3	~	~	~
ANZG[3]		~	~	~	~	~	0.08	~	~	~	~	0.01	~	~	~	0.2	0.02	~	~	0.09	~	~	~

Notes

1	NEPM Schedule B1 Table 1C Groundwater Investigation Levels (GILs), Fresh waters
2	ADWG (2011), v 3.5, updated August 2018, Part 5, health considerations for drinking water
3	ANZG (2018) - Trigger values for freshwaters, 95% level of protection
<LOR	Less than the laboratory's limit of reporting
-	Not tested
~	No guideline available at time of investigation
Orange	cells contain levels of an analyte greater than GIL
Blue	cells contain levels of an analyte greater than ADWG (2011)
Green	cells contain levels of an analyte greater than ANZG (2018)

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Table K10: Summary of Laboratory Results (Water) – OPP

Sample ID	Sample Date	Analyte (µg/L)												
		Azinphos Methyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Monocrotophos	Pirimphos-methyl
Laboratory Limit of Reporting		*2*	*20*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*20*
MW8	2/06/2023	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
MW9	2/06/2023	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
MWR1	2/06/2023	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
MWS1	2/06/2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5
SW1	2/06/2023	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
SW2	2/06/2023	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
Site Assessment Criteria														
GIL[1]		~	~	0.01	~	~	0.01	~	0.15	~	~	0.05	~	~
ADWG[2]		30	2	10	~	~	4	5	7	4	7	70	2	90
ANZG[3]		0.02	~	0.01	~	~	0.01	~	0.15	~	~	0.05	~	~

Notes

1	NEPM Schedule B1 Table 1C Groundwater Investigation Levels (GILs), Fresh waters
2	ADWG (2011), v 3.5, updated August 2018, Part 5, health considerations for drinking water
3	ANZG (2018) - Trigger values for freshwaters, 95% level of protection
<LOR	Less than the laboratory's limit of reporting
-	Not tested
~	No guideline available at time of investigation
Orange	cells contain levels of an analyte greater than GIL
Blue	cells contain levels of an analyte greater than ADWG (2011)
Green	cells contain levels of an analyte greater than ANZG (2018)

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Table K11: Summary of Laboratory Results (Water) – Nutrients

Sample ID	Date Sampled	Analyte (mg/L)							
		Ammonia (as N)	Nitrate & Nitrite (as N)	Nitrate (as N)	Nitrite (as N)	Organic Nitrogen (as N)	Total Kjeldahl Nitrogen (as N)	Total Nitrogen	Total Phosphorus
Laboratory Limit of Reporting		*0.01*	*0.05*	*0.02*	*0.02*	*0.2*	*0.2*	*0.2*	*0.01*
SW1	2/06/2023	**0.3**	**0.06**	**0.05**	**<0.02**	**1.6**	**1.9**	**1.96**	**0.06**
SW2	2/06/2023	**2.2**	<0.05	<0.02	<0.02	**7**	**9.2**	**9.2**	**0.7**
Site Assessment Criteria									
DES[1]		0.01	~	~	~	~	~	0.45	0.035

Notes

1	DES (2022) Environmental Protection (Water and Wetland Biodiversity) Policy 2019 - Lower Creeks - Logan River Basin
~	No guideline available at time of investigation
Purple	cells contain levels of an analyte greater than DES (2022)
	This table has been produced in colour to indicate exceedences of relevant criteria. Reproduction should be carried out in colour.

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Table K12: Summary of Laboratory Results (Water) - PFAS

Sample ID	Sample Date	Perfluoroalkyl Sulfonic Acids (µg/L)						Perfluoroalkyl Carboxylic Acids (µg/L)										Perfluoroalkyl Sulfonamides (µg/L)							(n:2) Fluorotelomer Sulfonic Acids (µg/L)				PFAS Sums (µg/L)	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	EtFOSA	MeFOSE	EtFOSE	MeFOSAA	EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS	Sum of PFHxS and PFOS
Laboratory Limit of Reporting		*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.05*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*	*0.01*	*0.05*	*0.01*	*0.01*	*0.1*	*0.01*
MW8	2/06/2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01
MW9	2/06/2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01
MWR1	2/06/2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01
MWS1	2/06/2023	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
SW1	2/06/2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01
SW2	2/06/2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01
Site Assessment Criteria																															
NEMP Freshwater - 95% species protection[2]		~	~	~	~	0.13	~	~	~	~	~	220	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~

Notes

2	NEMP (2025) Table 8: Ecological water quality guideline value for freshwater - 90% species protection - slightly to moderately disturbed systems
Bold	Indicates detection of an analyte
~	No guideline available at time of investigation
<LOR	Less than the laboratory's limit of reporting
Yellow	Analyte concentrations greater than adopted freshwater guideline

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Table QA1: Relative Percentage Difference Results – Intra and Inter-laboratory Replicates

			Metals								TRH						BTEX				PAH		
			Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	b Naphthalene	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
S1	0.4 - 0.5 m	24 May 2023	6.4	<0.5	15	26	11	<0.1	20	53	<20	<50	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
9/0.5	0.4 - 0.5 m	24 May 2023	6.8	<0.5	17	27	12	<0.1	15	54	<20	<50	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
		Difference	0.4	0	2	1	1	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0
		RPD	6%	0%	13%	4%	9%	0%	29%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
R1	0.4 - 0.5 m	24-May-23 20:47	6	<1	8	19	7	<0.1	16	33	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/0.5	0.4 - 0.5 m	24 May 2023	6.8	<0.5	17	27	12	<0.1	15	54	<20	<50	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5
		Difference	0.8	0	9	8	5	0	1	21	0	0	0	0	0	0	0	0	0	0	0	0	0
		RPD	12%	0%	**72%**	**35%**	**53%**	0%	6%	**48%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Key:

Exceedance of RPD acceptance criteria

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Table QA2: Relative Percentage Difference Results – Water Intra-laboratory and Inter-laboratory Replicates

		Metals								TRH							BTEX					
		Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	F1	C6-C10	F2	>C10-C16	>C16-C34	>C34-C40	Sum >C34-C40	Benzene	Toluene	Ethyl-benzene	m&p -Xylenes	o-Xylene	Total xylenes
Sample ID	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW9	2-Jun-23	1	<0.2	3	5	2	0.1	7	15	<10	160	290	290	1,600	<100	1,890	<1	<1	<1	<2	<1	<3
MWR1	2-Jun-23	<1	<0.2	2	5	3	<0.1	7	16	<10	140	270	270	1,300	<100	1,570	<1	<1	<1	<2	<1	<3
	Difference	0	0	1	0	1	0	0	1	0	20	20	20	300	0	320	0	0	0	0	0	0
	RPD	0%	0%	40%	0%	40%	0%	0%	6%	0%	13%	7%	7%	21%	0%	18%	0%	0%	0%	0%	0%	0%
MW9	2-Jun-23	1	<0.2	3	5	2	0.1	7	15	<10	160	290	290	1,600	<100	1,890	<1	<1	<1	<2	<1	<3
MWS1	2-Jun-23	<1	<0.1	<1	2	<1	<0.1	6	17	<10	110	380	380	1,400	<100	1,780	<1	<2	<2	<2	<2	<2
	Difference	0	0	2	3	1	0	1	2	0	50	90	90	200	0	110	0	0	0	0	0	0
	RPD	0%	0%	67%	86%	50%	0%	15%	13%	0%	37%	27%	27%	13%	0%	6%	0%	0%	0%	0%	0%	0%

Key:

Exceedance of RPD acceptance criteria