ENVIRONMENTAL SITE SUITABILITY REPORT

BLOCK 42, SECTION 65 BELCONNEN AUSTRALIAN CAPITAL TERRITORY

Prepared for:	University of Canberra
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AGON DOCUMENT CONTROL

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Environmental Site Suitability Report Block 42 Section 65, Belconnen	JC1815
Written	**Approved**
Mitchell Cunningham Environmental Scientist	 John O'Brien Principal Environmental Scientist/ ACT Manager

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01	Draft	19/05/2025	MC	JO

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EXECUTIVE SUMMARY

Agon Environmental Pty Ltd ('Agon') was engaged by University of Canberra to prepare an Environmental Site Suitability Report ('ESSR') for Block 42 Section 65 Belconnen, ACT ('the site'). Agon understands that the proponent is seeking to rezone the site to CZ2 - Business Zone from its current CF - Community Facility zoning.

In summary, the site remained undeveloped until the early 1970s whereby four buildings were built on the site. In the early 2020s these buildings were demolished, and the site has remained vacant up until the present. The surrounding area has likewise undergone significant development with the construction of residential dwellings, a high school and Lake Ginninderra much to the current extent of Belconnen occurring since the 1970s. Two PCAs were identified being the former heating oil UST and the presence of fill, these PCAs were assessed by Lanterra Consulting in 2020. Agon have since compiled the Lanterra assessment data and evaluated the PCAs via a CSM which confirmed there to be no contaminant source pathway receptor linkages. On this basis Agon conclude the site suitable for the proposed CZ2 Business Zone which permits the following:

- Ancillary use
- Bulky good retailing
- Business agency
- Café
- Car park
- Civic administration
- Club
- Co-housing
- Commercial accommodation use
- Communications facility
- Community activity centre
- Community housing
- Community theatre
- Complementary use
- Cultural facility
- Consolidation
- Craft workshop
- Demolition
- Drink establishment
- Early childhood education and care
- Educational establishment
- Emergency services facility
- Financial establishment
- Guest house
- Health facility
- Home business
- Hotel / motel
- Hospital
- Indoor entertainment facility
- Indoor recreation facility
- Light rail
- Minor road
- Minor use
- Multi-unit housing
- Office
- Outdoor recreation facility
- Parkland
- Pedestrian plaza
- Personal service
- Place of assembly
- Public agency
- Recyclable materials collection
- Religious associated use
- Residential care accommodation
- Restaurant
- Retail plant nursery
- Retirement village
- Secondary residence
- Shop
- Sign
- Single dwelling housing
- Subdivision
- Supermarket
- Supportive housing
- Take-away food shop
- Temporary use
- Tourist facility
- Tourist resort
- Transport facility
- Varying a lease
- Veterinary clinic

This conclusion is subject to the following recommendations:

- Any intrusive excavation works undertaken at the site are to be supported by an Unexpected Finds Protocol (UFP), the UFP must consider the findings of this report.
- Any soils proposed to be removed from the site must be assessed in accordance with the ACT EPA (2022) Information Sheet 4 'Requirements for the Reuse and Disposal of Contaminated Soil in the ACT' or the equivalent prevailing regulatory requirements. No soil is to be removed from the site without EPA approval.

1.0 INTRODUCTION

1.1 Background

Agon Environmental Pty Ltd ('Agon') was engaged by University of Canberra to prepare an Environmental Site Suitability Report ('ESSR') for Block 42 Section 65 Belconnen, ACT ('the site'). Agon understands that the proponent is seeking to rezone the site to CZ2 - Business Zone from its current CF - Community Facility zoning.

There have been two previous environmental assessment reports completed for the site, the findings of these reports has been contemporised in this ESSR to align with the proposed rezoning and to comply with the ACT EPA (2017) Contaminated Sites Environment Protection Policy (CSEPP) which states "A site assessment would normally be required where there is a change to the lease purpose or land use where the past use of the land may have caused contamination".

The location of the site is presented in Figure 1 below:

Figure 1: Site Location

Source: ACTmapi (2024)

1.2 Objective

The objective of this ESSR is to identify potentially contaminating activities (PCAs) which may have occurred at the site, provide an initial assessment of potential risks to human health/environment and provide a conclusion as to the suitability of the site for the land use planned under the current Territory Plan terminology and the proposed lease variation.

1.3 Scope of Work

The scope of work for this investigation comprised:

- A review of property details and a description of the features of this site.

- A review of current zoning and land use on and surrounding the site.
- A review of regional geology and hydrogeology.
- An inspection of the site.
- A review of historical aerial photographs of the site and surrounding area.
- A review of historical land titles ownership.
- A review of publicly available information.
- A search of the Contaminated Sites Database and Geographic Information System maintained by the ACT EPA.
- A search of the Dangerous Substances Register, Dangerous Goods Database and the Manifest Quantity Notifications maintained by Work safe ACT.
- Review of the previous environmental assessment reports for the site.
- Compilation of this information presented in this ESSR report.

1.4 Legislative Framework

The PSI has been prepared in general accordance with the guidelines endorsed by the ACT EPA (2017) CSEPP, including but not limited to:

- National Environment Management (Assessment of Site Contamination) Measure 1999 (amended 2013) (the NEPM).
- ACT EPA Information Sheet 7 - Guidance for undertaking preliminary contamination investigations for development/lease variation purposes.
- ACT EPA Information Sheet 11 – Environment Protection Authority Report Submission Requirements.

1.5 Previous Environmental Assessment Reports

The following previous environmental assessment reports have been completed for the site:

- Lanterra (2020a) Tank Validation Report. Block 42 Section 65 Belconnen.
- Lanterra (2020b) Preliminary Site Investigation Report. Block 42 Section 65 Belconnen.

2.0 SITE DETAILS

2.1 Site Identification

Table 1: Site Identification

Site Identification	Details
Site Address	35 Aikman Drive, Belconnen ACT 2617 (former Arscott House)
Allotment Description	Block 42 Section 65, Belconnen
Volume/Folio	N/A
Land Zoning	CF: Community Facilities
Proposed Land Zoning	CZ2: Business Zone
Current Land Use	Vacant (former University student accommodation)
Proposed Land Use	CZ2: Business Zone (Commercial Zoning)
Total Area	10,378 m^2

2.2 Physical Setting

The site is situated in Belconnen, and is bordered by Aikman Drive to the east, Lake Ginninderra College to the south/ west and basketball courts to the north. The site is currently vacant with a grassed surface coverage with no evidence usages. The site in its current setting is presented below in *Figure 2*:

Figure 2: Current Site Setting

Source: NearMaps (2025)

2.3 Site Zoning

The site is proposed to be re-zoned to the "CZ2: Business Zone". The policy outcomes of CZ2 zoning are as follows:

1. *Provide for office and business sites that are accessible to public transport and convenience retailing and services.*
2. *Provide a diverse range of accommodation sizes and locations for offices close to the retail core.*
3. *Encourage provision of convenient outlets for goods, services and facilities to meet the needs of the workforce. Encourage higher density residential development in locations with convenient access to transport corridors, and commercial and employment centres.*
4. *Create vibrant lively pedestrian routes and public spaces.*
5. *Ensure a high-quality urban environment through the use of sustainable design and materials, and maintain a high level of amenity for employees and the public.*
6. *Provide a high-quality public space by facilitating active uses on ground floor level that connect with the wider open space, pedestrian and cycle networks to promote active travel and living.*
7. *Encourage an attractive, safe, well-lit and connected pedestrian environment with convenient access to public transport.*

2.4 Surrounding Land Use

The immediate surrounding land uses to the site are summarised below in Table 2:

Table 2: Surrounding Land Use

Direction	Land Use
North	Adjacent to the north of the site is 'John Knight Memorial Park Basketball Courts' and 'John Knight Memorial Park' used for recreational purposes.
East	The site is bordered by Aikman Drive, followed by the University of Canberra student housing district.
South	The south of the site is bordered by a Senior High School (lake Ginninderra). Further south is a Ten Pin Bowling establishment and a McDonalds fast food outlet.
West	The west of the site is bordered by the same Senior High School as the south. Further west past the high school is Lake Ginninderra.

No surrounding land usages identified are anticipated to have resulted in adverse environmental conditions on the site.

2.5 Site Geology

The Canberra 1:100,000 Geological Map indicates that natural soil in the vicinity of the site is likely to comprise Palaeozoic (Late Silurian) Aged Minor Granitoid stocks.

2.6 Site Hydrology and Hydrogeology

Surface water in the vicinity of the site is expected to infiltrate into the local soils, pool in localised low-lying areas or drain to local stormwater infrastructure along Aikman Drive. Stormwater is expected to be dispersed to the nearest surface water body, Lake Ginninderra (located about 120 m to the west of the site). Given the man-made nature of Lake Ginninderra it is considered highly disturbed and is not considered to warrant further environmental considerations for this investigation.

Review of the 1:100,000 Hydrology of the Australian Capital Territory and Environs (Evans 1984) indicates that the groundwater beneath the site is present in fractured rock aquifers, and that wells in the area typically yield less than to 0.5 L/s. The quality of groundwater abstracted from these wells range between 500 mg/L and 1000 mg/L Total Dissolved Solids (TDS) indicating good to moderate water quality. No ACT Government groundwater monitoring bores are located within 500 m of the site.

2.7 Site Inspection

An inspection of the site was undertaken by Agon on 24 March 2025 with a photolog presented in Appendix A. Key observations are as follows:

- The site was vacant (free of any buildings) with a grass and tree surface coverage. All site vegetation appeared to be in good health with no notable dead patches of vegetation. All exposed surface topsoils were not observed to have any staining or odours and did not contain anthropogenic inclusions. (see Photographs 1 -2)
- The site was mostly flat with minor elevated areas and corresponding low-lying areas throughout it. (see Photograph 3)
- No former building infrastructure nor any building debris were identified within the site.

3.0 HISTORICAL INFORMATION

3.1 Historical Aerial Imagery

Aerial photographs were reviewed from 1952 to 2024 to investigate the former land uses at the site. Selected aerial extracts are provided in Appendix B, with approximate site locations outlined in Blue.

Table 3: Historical Aerial Imagery

Year	Description
1951	Site: The site is undeveloped and appears to be used for agricultural purposed such as animal husbandry or broadacre cropping. Surrounds: The surrounding area is part of the same agricultural setting as the site.
1961	Site: No significant changes. Surrounds: No significant changes.
1972	Site: The site has been cleared of vegetation and appears to be being prepared for development. Surrounds: The surrounding area has been cleared of vegetation and is being prepared for development. Evident by the disturbed soils and the construction of roads in the vicinity of the site.
1982	Site: Four buildings have been constructed on the site. Three of which run along the northern boundary and one in the southern section of the site. Surrounds: Development of buildings, roads and Lake Ginninderra has occurred. Multiple dwellings have been constructed to the east of the site and the south and west of the site are undergoing construction. The north of the site has been cleared of vegetation but has no evidence of construction activities.
1992	Site: Areas of the site have been asphalted and are now being used as a carpark. Surrounds: A school has been constructed to the south and west of the site. No significant changes to the north and east.
2023	Site: The site has been cleared of all buildings and has a grass and tree surface coverage. Surrounds: Basketball courts have been built to the north of the site. No other changes.

In summary, the site remained undeveloped until the early 1970s whereby four buildings were built on the site. In the early 2020s these buildings were demolished, and the site has remained vacant up until the present. The surrounding area has likewise undergone significant development with the construction of residential dwellings, a high school and Lake Ginninderra much to the current extent of Belconnen occurring since the 1970s.

3.2 Historical Ownership

A search of historical titles was undertaken using the Australian Capital Territory Land Information System (ACTLIS) under the original title of Volume 2012 Folio 38. Historical titles are available from 1995 to 2023 and show a single lease to the University of Canberra in 1996, all other listings are applications for registering crown leases at the property. Details of these transactions are recorded in the Historical Titles search provided in Appendix C.

3.3 Public Records

National Library of Australia records (NLA) accessed via https://trove.nla.gov.au/ were reviewed by Agon as supplementary site history information. No information could be found for the site.

3.4 ACT EPA Contaminated Land Search

A search of the Register of Contaminated Sites maintained by the ACT EPA (under the Environment Protection Act 1997) was undertaken to identify any site contamination notifications or reports. In summary, the site is recorded on the Register of Contaminated Sites. A summary of the search is as follows:

> *The block is recorded on the EPA's contaminated sites management database and geographic information system.*
>
> *The site was occupied by community complexes. Community complexes, prior to the introduction of natural gas to the ACT in the 1980's, utilised boiler heating or similar systems. These systems were generally fuelled by diesel or heating oil which was mainly stored in underground fuel storage tanks.*
>
> *EPA records indicate that a 10,000 litre underground fuel storage tank (UST) was removed from Block 42 Section 65 Belconnen. It is assumed that the UST was used for the storage of heating oil or diesel for heating purposes in the buildings. The EPA required the whole site and any off-site impacted areas (including groundwater, if necessary) be assessed and remediated (if required). Records indicate the site assessment is ongoing.*
>
> *Aerial photographs also indicate that part of the site is occupied by a car park. Whilst there is no recorded information on potential site contamination, car parks have been associated with potential site contamination due to the placement of uncontrolled fill during the establishment of the site.*
>
> *The ACT EPA Contaminated Sites Environment Protection Policy 2017 lists fuel storage and landfilling as activities associated with land contamination which may pose a risk to human health and the environment.*
>
> *Other potentially contaminating activities may have also been undertaken at the site associated with current and past uses.*
>
> *The EPA has not issued any orders of assessment or remediation under sections 91C (1) or 91D (1) respectively, environment protection orders under sections 125 (2) or (3), requested an audit under section 76 (2) or received an audit notification under section 76A (1) of the Environment Protection Act 1997 (the Act) over the site and as a result the site is not recorded on the Register of contaminated sites under section 21A of the Act.*
>
> *The information detailed above only relates to records held by the EPA and may not represent the actual condition of the site.*
>
> *At present the EPA has no information on contamination of the above block(s) other than as detailed above. However, this does not absolutely rule out the possibility of contamination and should not be interpreted as a warranty that there is no contamination.*
>
> *I appreciate that this does not absolutely rule out the existence of contamination of the soils. If you or your clients wish to be completely sure you, or they, should arrange to conduct independent tests..*

A copy of the EPA's response to this request, is included as Appendix D.

3.5 Office of Regulatory Services – Dangerous Goods Search

The Dangerous Substances Register, Dangerous Goods Database and the Manifest Quantity Notifications search has been removed from the Worksafe ACT website.

3.6 Historical Building Plans and Heating Method

No historical building plans were made available to Agon for the purpose of this investigation. However, given that all site infrastructure has been removed from the site this is not considered to affect the outcome of this investigation.

3.7 Leaseholder Interview

Agon have spoken to the leaseholder Mr Hamish Wise, to his knowledge the site has always been utilised for student accommodation prior to the demolition of the site buildings.

3.8 Previous Environmental Investigation Report

3.8.1 Lanterra (2020a) Tank Validation Report

This report details the validation sampling following the removal of a single 10,000L Underground Fuel Storage Tank (UST) from the site. Key findings were as follows:

- The report details the scope of work, UST removal, waste disposal and presented the results of the validation sampling of the UST excavation.
- Validation sampling comprises:
  - Collection of wall validation samples (V1, V2, V3, V4, V6 and V7).
  - Collection of base samples (V5 and V8).
  - Collection of 6 stockpile samples.
- Tank pit excavation observations were as follows:
  - *The dimensions of the final tank excavation were 8 m long, 3.5 m wide and approximately 3.3 m in depth at the deepest point. The excavation was rectangular in shape and located in the central portion of the site.*
  - *The walls and base of the excavation comprised of a highly weathered volcanic gravelly sandy clay, orange/red/brown, moist and firm from a depth of 1.5 m to 2.0 m. The backfill sand comprised was a pale brown moist and soft sand.*
  - *There was a weak hydrocarbon odour from one of the validation samples, V4, collected from the west wall of the excavation.*
- All validation results were less than the adopted assessment criteria. Lanterra concluded:
  - *Based on the results of the excavation validation, the soil remaining in the walls and base of the tank excavation is considered suitable for the permissible land uses under the Community Facilities zoning. The results of this investigation, however, have only assessed the soil in the vicinity of the former UST and does not assess the suitability of the entire site for future land uses permitted under the Community Facilities Zone.*

Agon understand this report was reviewed and endorsed by the ACT EPA.

3.8.2 Lanterra (2020b) PSI

Further to the Tank Validation Report Lanterra were engaged to undertake further in-situ soil assessment of the site to determine its suitability for the land uses permitted under the CF: Community Facilities zone. Key features of the PSI were as follows:

- The scope of works were:
  - *Perform a site visit to characterise the property setting, including inspection of the site surface for obvious and visible signs of potential contamination and / or contaminant sources.*
  - *A visual evaluation of surrounding land uses to identify any neighbouring activities which may have affected or present a potential risk to the environmental quality of the site.*
  - *An evaluation of aerial photographs to assist in assessing historical land uses and conditions on and adjacent to the site.*
  - *Review the results of an ACT EPA contaminated sites register and database search to assess whether there are any known contaminating activities either on the site or on neighbouring properties.*
  - *A review of the environmental setting with regards to geology, topography, hydrology, and hydrogeology.*
  - *Drilling of ten (10) boreholes across the site for soil sampling.*
  - *Undertake soil analysis at National Associated of Testing Authorities (NATA) accredited laboratory for the analyses of contaminants of potential concern (COPC).*
  - *Assess laboratory results obtained from the investigation against the applicable land use criteria in the National Environment Protection Council 'National Environment Protection (Assessment of Site Contamination) Measure 1999' as amended in 2013 (ASC NEPM 2013).*
  - *Preparation of this Preliminary Site Investigation (PSI) report in general accordance with the*
  - *requirements of ACT EPA endorsed guidelines for submission to the Client.*
- The site details and history are consistent with the findings of Agon as presented in Section 2 and Section 3 of this ESSR.
- Two Areas of Environmental Concern (AECs) were identified as being:
  - *AEC 1: Former Carpark Area - The site has been subjected to earthwork activities since the 70s, with potential material imported to the site during its development. In particular, the carpark area poses a contamination risk since its material could have come from a contaminated site and/or may be affected by leaks and spills of fuel and oil from parked vehicles.*
  - *AEC2: Former Building Facilities - It is assumed that earthworks activities were undertaken for the construction of the accommodation facilities which were observed built in an aerial image from 1978. In addition, the demolition of these facilities and the previous presence of a UST in this area, introduces further contamination risks to the site.*
- The following contaminants of concern were identified:
  - Total Recoverable Hydrocarbons (TRH)
  - Benzene, toluene, ethylbenzene xylenes (BTEX)
  - Polycyclic Aromatic Hydrocarbons (PAH)

- Organochlorine pesticides (OCP)
- Organophosphorous pesticides (OPP)
- Polychlorinated biphenyls (PCB)
- Phenols
- Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc)
- Asbestos.

- Findings of the in-situ assessment were as follows:
  - Fill material was observed across the site ranging in depths between 0.3m (in the eastern portion of the site) to depths of 2m (in the western portion of the site). The fill was logged as gravelly clayey-sandy silt, orange to brown, moist, and soft to hard and was underlain by sandy clays and weathered bedrock.
  - All soil analysis results were less than the adopted assessment criteria.
- Lanterra concluded the site to be suitable for land uses permitted under the CF: Community Facilities Zone.

It is unknown if this PSI report was submitted to the ACT EPA for review and endorsement.

3.8.3 Adequacy of Lanterra (2020a) and Lanterra (2020b)

Agon have reviewed the Lanterra reports and consider the assessment data as suitable for inclusion in preparation of this ESSR report on the following basis:

- The Lanterra appraisal of the site details and history is consistent with Agons own findings (refer Section 2 and Section 3) in this ESSR.
- The scope of work was sufficient to:
  - Validate the successful removal of the former heating oil UST and that residual soils were suitable for the proposed land uses under Community Facilities Zoning.
    - Collectively 2 base (at a rate of 1 per 5 m^2) and 6 wall (at a rate of 5 m per wall) samples were collected. Agon consider this consistent with industry standards.
  - Adequately assess the contamination status of fill across the site with no exceedances of the adopted land use report.
    - Collectively 10 boreholes were advanced across the site, whilst this is slightly less than 21 outlined in Table 2 NSW (2022) Sampling Design Part 1 – Application it is considered appropriate by Agon to verify the contamination status of fill.
- Both the Lanterra assessments compared the soil analysis data against a residential (HIL A) land use setting. This allows for a number of land uses to be evaluated under the proposed TPV to CZ2 - Business Zone from its current CF - Community Facility zoning.
- Lanterra adopted industry standard QA/QC for both reports (Lanterra 2020a and Lanterra 2020b). Agon have reviewed the QA/QC and consider it adequate to rely upon Lanterra's results for the purpose of determining land use suitability.

Agon have represented the Lanterra dataset against the identified PCAs via the revised CSM in Section 4 of this report.

4.0 REVISED CSM

4.1 PCAs and Previous Assessment Details.

The following PCAs have been identified in this ESSR:

- PCA01 – Former Heating Oil UST – this was removed from the site in 2020 and validated by Lanterra as summarised in Lanterra 2020a. Sample locations and soil analysis results are presented in Appendix E.
- PCA02 – Fill – fill is present at the site and was assessed by Lanterra as summarised in Lanterra 2020b. Sample locations and soil analysis results are presented in Appendix E.

4.2 CSM

A Conceptual Site Model (CSM) provides the framework for evaluating contaminant source-pathway-receptor linkages as a result of PCAs which may have occurred at the site. Any linkages may be presented as complete or incomplete thereby establishing a potential exposure pathway that may, depending on the nature of the proposed land use, warrant further assessment. The CSM process is iterative and must be refined throughout the site assessment process based on any available environmental or site historical or field information.

On the basis of the site history and previous environmental investigations Agon have compiled the identified PCAs through a CSM to determine if there are any complete contaminant source-pathway-receptor linkages.

Table 4: PCAs and CSM

PCA	Source/CoCs	Receptor	Pathway
PCA01 Former Heating Oil UST	TRH BTEX	Soil Groundwater Workers	Migration and Exposure Pathway incomplete. Pathway negated by: • This PCA was adequately assessed in Lanterra (refer Section 3.8) to the satisfaction of the ACT EPA. • All soil analysis results were less than the adopted HIL A criterion for a low-density residential land use setting.
PCA02 Fill	TRH BTEX Metals PAHs Pesticides PCB Asbestos	Soil Groundwater Workers	Migration and Exposure Pathway incomplete. Pathway negated by: • This PCA was adequately assessed in Lanterra (refer Section 3.8). • All soil analysis results were less than the adopted HIL A criterion for a low-density residential land use setting.

In summary, the PCAs at the site have been adequately assessed with no contaminant source pathway receptor linkages identified

5.0 CONCLUSION

In summary, the site remained undeveloped until the early 1970s whereby four buildings were built on the site. In the early 2020s these buildings were demolished, and the site has remained vacant up until the present. The surrounding area has likewise undergone significant development with the construction of residential dwellings, a high school and Lake Ginninderra much to the current extent of Belconnen. Two PCAs were identified being the former heating oil UST and the presence of fill, these PCAs were assessed by Lanterra (refer Section 3.8). Agon have since compiled the Lanterra assessment data and evaluated the PCAs via a CSM which confirmed there to be no contaminant source pathway receptor linkages. On this basis Agon conclude the site suitable for the proposed CZ2 Business Zone which permits the following:

ancillary use
Bulky good retailing
Business agency
Café
Car park
Civic administration
Club
Co-housing
Commercial accommodation use
Communications facility
Community activity centre
Community housing
Community theatre
Complementary use
Cultural facility
Consolidation
Craft workshop
Demolition
Drink establishment
Early childhood education and care
Educational establishment
Emergency services facility
Financial establishment
Guest house
Health facility
Home business
Hotel / motel
Hospital
Indoor entertainment facility
Indoor recreation facility
Light rail
Minor road
Minor use
Multi-unit housing
Office
Outdoor recreation facility
Parkland
Pedestrian plaza
Personal service
Place of assembly
Public agency
Recyclable materials collection
Religious associated use
Residential care accommodation
Restaurant
Retail plant nursery
Retirement village
Secondary residence
Shop
Sign
Single dwelling housing
Subdivision
Supermarket
Supportive housing
Take-away food shop
Temporary use
Tourist facility
Tourist resort
Transport facility
Varying a lease
Veterinary clinic

This conclusion is subject to the following recommendations:

- Any intrusive excavation works undertaken at the site are to be supported by an Unexpected Finds Protocol (UFP), the UFP must consider the findings of this report.

- Any soils proposed to be removed from the site must be assessed in accordance with the ACT EPA (2022) Information Sheet 4 *'Requirements for the Reuse and Disposal of Contaminated Soil in the ACT'* or the equivalent prevailing regulatory requirements. No soil is to be removed from the site without EPA approval.

6.0 REFERENCES

ACT EPA. (2020). Information Sheet 7 - Guidance for undertaking preliminary contamination investigations for development/lease variation purposes.

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7.0 LIMITATIONS OF THIS REPORT

All and any Services proposed by Agon to the Client were subject to the Terms and Conditions listed in Agon's QFB-008 Consultancy Agreement (accessible at https://agonenviro.com.au/documents/). Unless otherwise expressly agreed to in writing and signed by Agon, Agon does not agree to any alternative terms or variation of these terms if subsequently proposed by the Client. The Services were carried out in accordance with the current and relevant industry standards of testing, interpretation and analysis. The Services were carried out in accordance with Commonwealth, State, Territory or Government legislation, regulations and/or guidelines. The Client was deemed to have accepted these Terms when the Client signed the Proposal (where indicated) or when the Company commenced the Services at the request (written or otherwise) of the Client.

The Services were carried out for the Specific Purpose, outlined in the body of the Proposal. To the fullest extent permitted by law, Agon, its related bodies corporate, its officers, consultants, employees and agents assume no liability, and will not be liable to any person, or in relation to, any losses, damages, costs or expenses, and whether arising in contract, tort including negligence, under statute, in equity or otherwise, arising out of, or in connection with, any matter outside the Specific Purpose.

The Client acknowledged and agreed that proposed investigations were to rely on information provided to Agon by the Client or other third parties. Agon made no representation or warranty regarding the completeness or accuracy of any descriptions or conclusions based on information supplied to it by the Client, its employees or other third parties during provision of the Services. Under no circumstances shall Agon have any liability for, or in relation to, any work, reports, information, plans, designs, or specifications supplied or prepared by any third party, including any third party recommended by Agon. The Client releases and indemnifies Agon from and against all Claims arising from errors, omissions or inaccuracies in documents or other information provided to Agon by the Client, its employees or other third parties.

The Client was to ensure that Agon had access to all information, sites and buildings as required by or necessary for Agon to undertake the Services. Notwithstanding any other provision in these Terms, Agon will have no liability to the Client or any third party to the extent that the performance of the Services was not able to be undertaken (in whole or in part) due to access to any relevant sites or buildings being prevented or delayed due to the Client or their respective employees or contractors expressing safety or health concerns associated with such access.

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The conclusions, or data referred to in this Report/Document/Deliverable, should not be used as part of a specification for a project without review and written agreement by Agon. This Report/Document/Deliverable has been written as advice and opinion, rather than with the purpose of specifying instructions for design or redevelopment. Agon does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise in relation to the site(s) it investigated or general managememnt plan it proposed.

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APPENDIX A: SITE INSPECTION

Photograph 1: Southern portion of the site area facing east.

Photograph 2: Southeast portion of site area facing east.

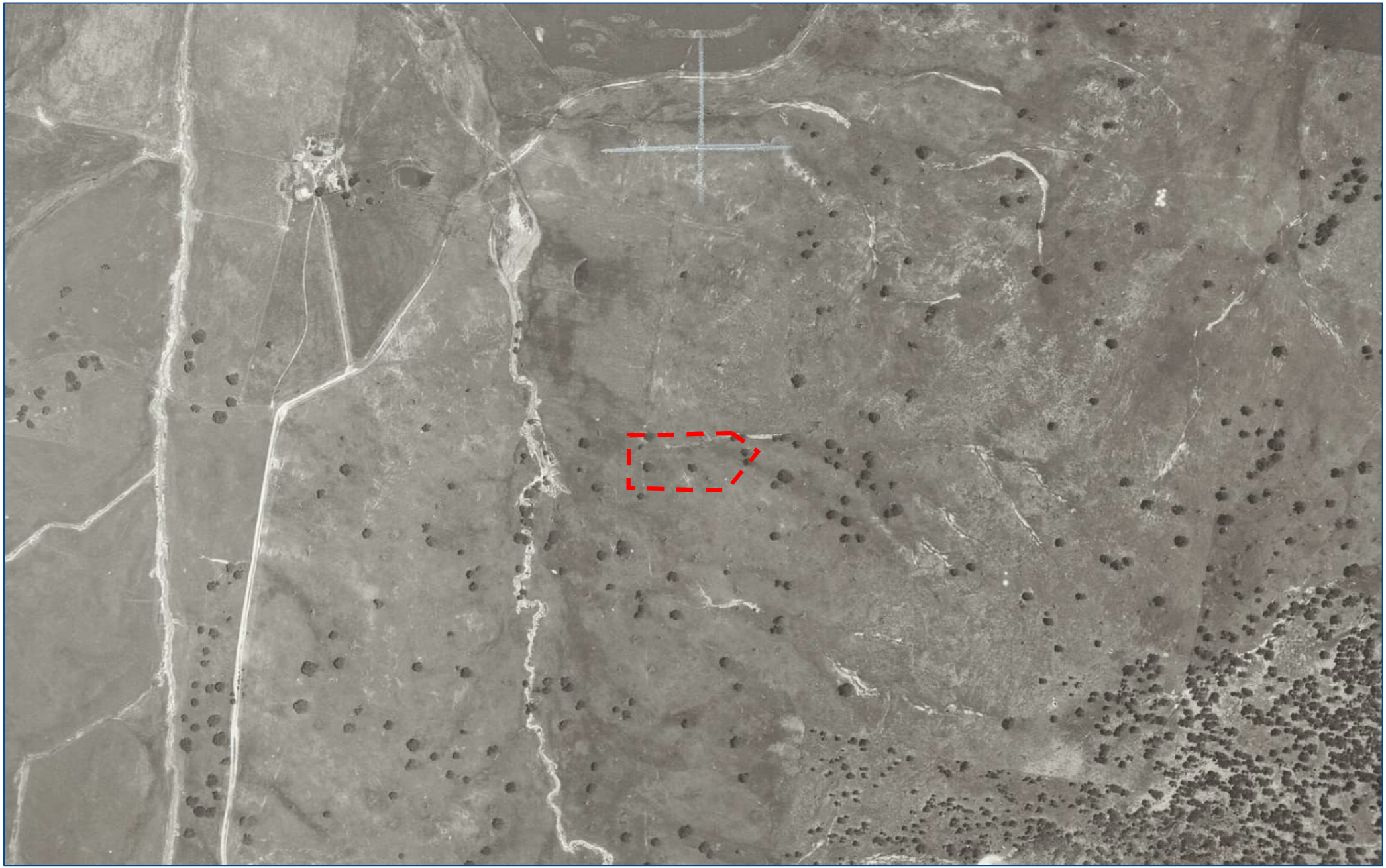
Photograph 3: Central portion of site facing west.

Photograph 4: Southwest portion of site area facing west.

Photograph 5: Small asphalt stockpile in central portion of site area facing southeast

Photograph 6: Northern portion of site area facing east.

APPENDIX B: HISTORICAL AERIAL IMAGERY



Aerial Image: 1951

Legend:

Approximate Site Location

Client:	University of Canberra
Site:	Block 42, Section 65, Belconnen
Ref:	JC1815_PSI.01
Rev:	A
Drafter:	MC
Date:	02/04/2025
Source:	ACT Mapi, 2025

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Aerial Image: 1961

Legend:

Approximate Site Location

Client:	University of Canberra
Site:	Block 42, Section 65, Belconnen
Ref:	JC1815_PSI.01
Rev:	A
Drafter:	MC
Date:	02/04/2025
Source:	ACT Mapi, 2025

agon ENVIRONMENTAL

Agon Environmental Pty Ltd
Unit 6/95 Northbourne Ave, Turner ACT 2612
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Aerial Image: 1972

Legend:

Approximate Site Location

Client:	University of Canberra
Site:	Block 42, Section 65, Belconnen
Ref:	JC1815_PSI.01
Rev:	A
Drafter:	MC
Date:	02/04/2025
Source:	ACT Mapi, 2025

agon ENVIRONMENTAL

Agon Environmental Pty Ltd
Unit 6/95 Northbourne Ave, Turner ACT 2612
www.agonenviro.com.au

Aerial Image: 1982

Legend:

Approximate Site Location

Client:	University of Canberra
Site:	Block 42, Section 65, Belconnen
Ref:	JC1815_PSI.01
Rev:	A
Drafter:	MC
Date:	02/04/2025
Source:	ACT Mapi, 2025

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Aerial Image: 1992

Legend:

Approximate Site Location

Client:	University of Canberra
Site:	Block 42, Section 65, Belconnen
Ref:	JC1815_PSI.01
Rev:	A
Drafter:	MC
Date:	02/04/2025
Source:	ACT Mapi, 2025

agon ENVIRONMENTAL

Agon Environmental Pty Ltd
Unit 6/95 Northbourne Ave, Turner ACT 2612
www.agonenviro.com.au

Aerial Image: 2023

Legend:

Approximate Site Location

Client:	University of Canberra
Site:	Block 42, Section 65, Belconnen
Ref:	JC1815_PSI.01
Rev:	A
Drafter:	MC
Date:	02/04/2025
Source:	ACT Mapi, 2025

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APPENDIX C: HISTORICAL TITLES

Product	Historical Search
Date/Time	20/03/2025 03:51PM
Customer Reference	JC1815
Order ID	20250320001482
Cost	$34.00

Volume 2012 **Folio** 38 **Edition** All

AUSTRALIAN CAPITAL TERRITORY

HISTORICAL TITLE SEARCH

LAND

Belconnen Section 65 Block 42 on Deposited Plan 8835

Area is 10370 square metres or thereabouts

Original title is **Volume** 2012 **Folio** 38

Registered Date	Dealing Number	Description
25/10/1995	971401	Application for Deposited Plan - lodged on 19/10/1995
23/02/1996	985165	Application to register a Crown Lease - lodged on 16/02/1996
23/02/1996	985166	Lease to UNIVERSITY OF CANBERRA of Whole of land Exp 30/01/2021 continued by S.91A/91B/91C Land Titles Act 1925 - lodged on 16/02/1996
17/01/2012	1781414	Determination of Crown Lease by Surrender - lodged on 12/01/2012
19/01/2012	1781415	Application to Register a Crown Lease (DCL1781414) - lodged on 17/01/2012
21/02/2023	3227619	Registrar-Generals Dealing for Removal 985166 - lodged on 17/02/2023

End of interests

ADMINISTRATIVE INTERESTS

Administrative interests information is **not** guaranteed by the Registrar-General, and the Registrar-General nor an authorised entity incurs liability for any omission, misstatement or inaccuracy in the information.

Territory Planning Authority - For further information concerning the following administrative interests, please refer to decided development application information available at https://www.planning.act.gov.au/ or on the DA Finder App, available for download on iOS and Android mobile devices. Alternatively, please contact Access Canberra Land, Planning and Building Services at ACEPDcustomerservices@act.gov.au or 6207 1923. The Territory Planning Authority's administrative interest information has been provided to the Registrar-General since 1 February 2010.

Reference Number	Type	Lodgement Date	Assessment Track	Status	Status Date
201935285	Development Application	15/03/2019	MERIT TRACK - MAJOR NOTIFICATION	APPROVAL CONDITIONAL	23/09/2019

Description
PROPOSAL FOR DEMOLITION - proposed demolition of buildings and car parking areas, The removal of 26 trees, cut and fill earthworks across the site and associated works.

APPENDIX D: CONTAMINATED LAND SEARCH

Mitchell Cunningham

From: Contaminated Sites <ContaminatedSites@act.gov.au>
Sent: Friday, March 28, 2025 9:40 AM
To: Kurt Lockwood
Subject: Contaminated Land Search - Reference: JNFGDW8M - Block 42 Section 65 Belconnen, Belconnen

OFFICIAL

Dear Lockwood,

RE: Contaminated Land Search - Reference: JNFGDW8M

Thank you for your search form request of 20/03/2025 enquiring about: **Block 42 Section 65 Belconnen, Belconnen**

Records held by the Environment Protection Authority (EPA) for the above block(s) indicate the following:

The block is recorded on the EPA's contaminated sites management database and geographic information system.

The site was occupied by community complexes. Community complexes, prior to the introduction of natural gas to the ACT in the 1980's, utilised boiler heating or similar systems. These systems were generally fuelled by diesel or heating oil which was mainly stored in underground fuel storage tanks.

EPA records indicate that a 10,000 litre underground fuel storage tank (UST) was removed from Block 42 Section 65 Belconnen. It is assumed that the UST was used for the storage of heating oil or diesel for heating purposes in the buildings. The EPA required the whole site and any off-site impacted areas (including groundwater, if necessary) be assessed and remediated (if required). Records indicate the site assessment is ongoing.

Aerial photographs also indicate that part of the site is occupied by a car park. Whilst there is no recorded information on potential site contamination, car parks have been associated with potential site contamination due to the placement of uncontrolled fill during the establishment of the site.

The ACT EPA Contaminated Sites Environment Protection Policy 2017 lists fuel storage and landfilling as activities associated with land contamination which may pose a risk to human health and the environment.

Other potentially contaminating activities may have also been undertaken at the site associated with current and past uses.

The EPA has not issued any orders of assessment or remediation under sections 91C (1) or 91D (1) respectively, environment protection orders under sections 125 (2) or (3), requested an audit under section 76 (2) or received an audit notification under section 76A (1) of the Environment Protection Act

1997 (the Act) over the site and as a result the site is not recorded on the Register of contaminated sites under section 21A of the Act.

The information detailed above only relates to records held by the EPA and may not represent the actual condition of the site.

At present the EPA has no information on contamination of the above block(s) other than as detailed above. However, this does not absolutely rule out the possibility of contamination and should not be interpreted as a warranty that there is no contamination.

I appreciate that this does not absolutely rule out the existence of contamination of the soils. If you or your clients wish to be completely sure you, or they, should arrange to conduct independent tests.

Best regards,

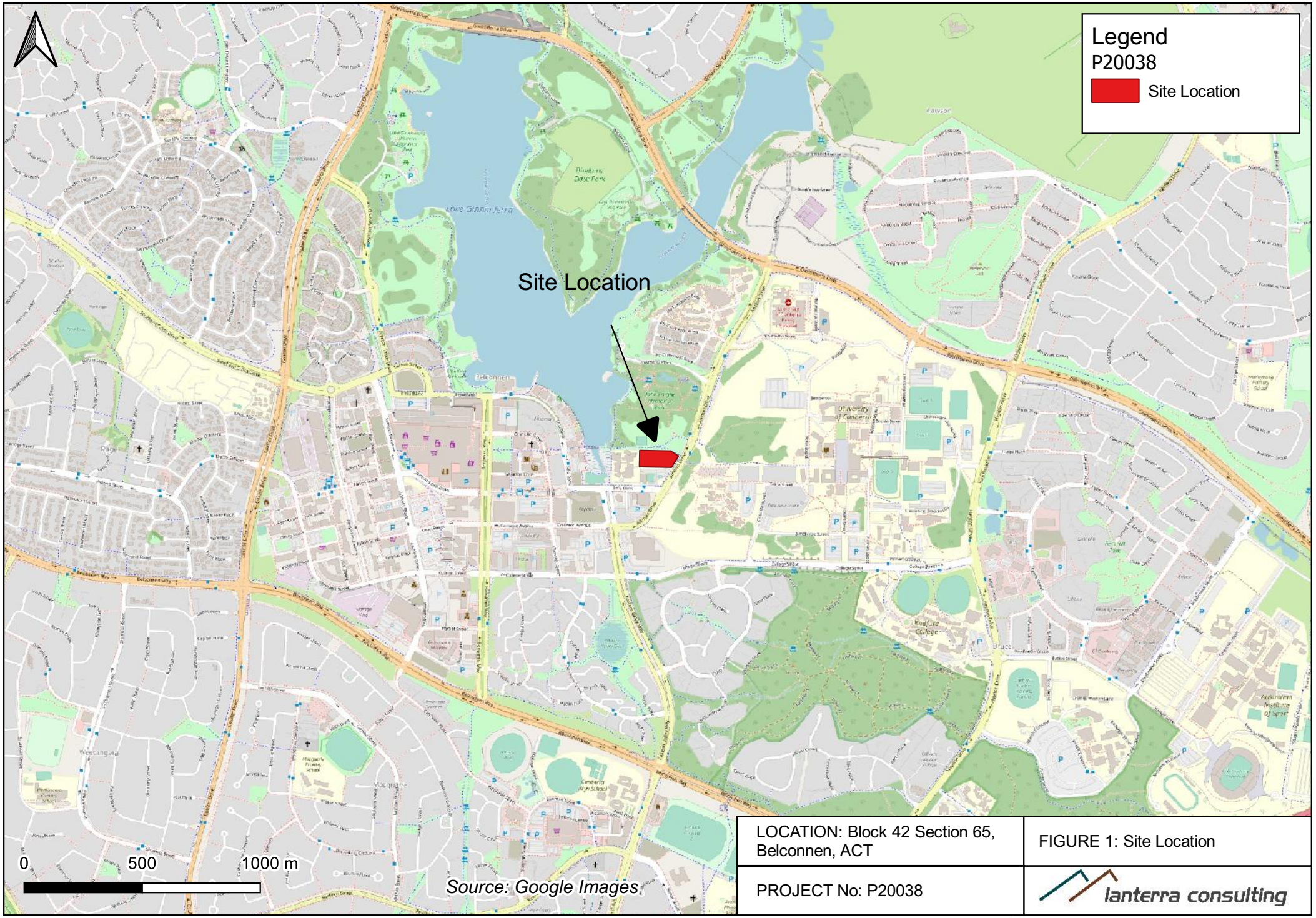
Arif Mirza | Environment Protection Officer | Office of the Environment Protection Authority
Phone: 02 6207 2157 | Email: arif.mirza@act.gov.au

Access Canberra | Chief Minister, Treasury and Economic Development Directorate | ACT Government
GPO Box 158, Canberra City, ACT 2601 | www.act.gov.au/accessCBR

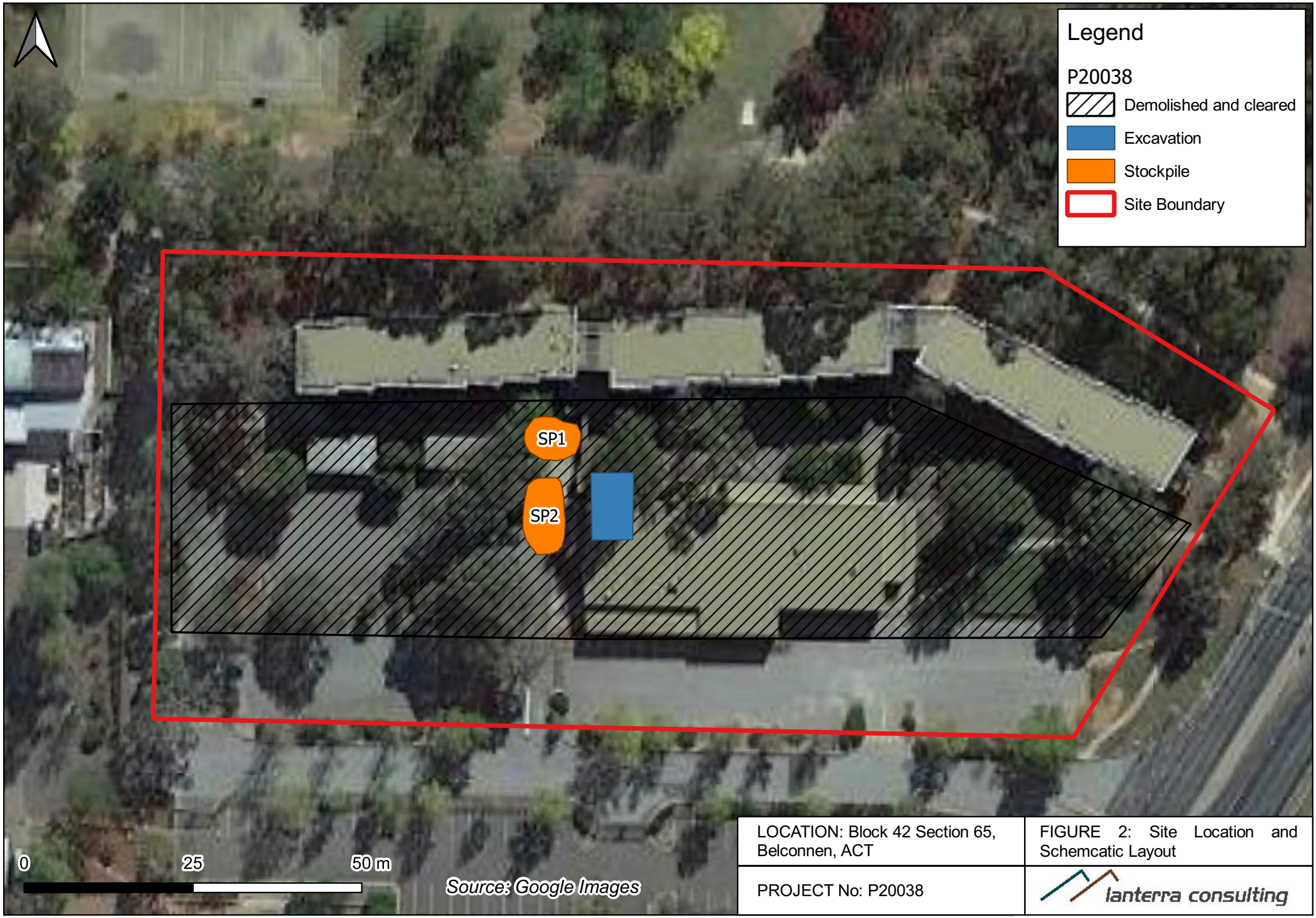
We acknowledge the traditional custodians of the ACT, the Ngunnawal people. We acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

Please consider the environment before printing this email.

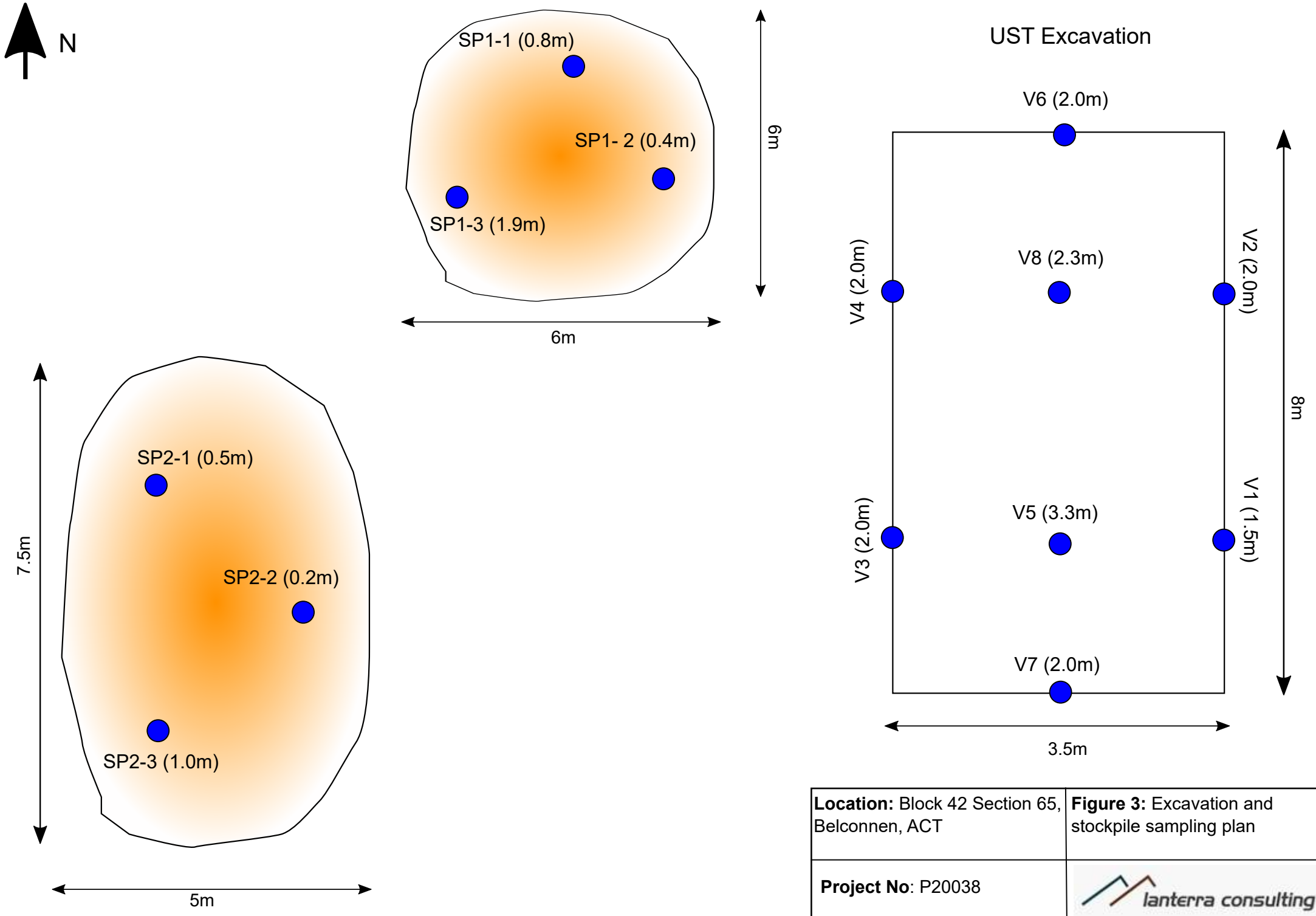
APPENDIX E: HISTORICAL DATA



LOCATION: Block 42 Section 65, Belconnen, ACT	FIGURE 1: Site Location
PROJECT No: P20038	lanterra consulting



LOCATION: Block 42 Section 65, Belconnen, ACT	FIGURE 2: Site Location and Schemcatic Layout
PROJECT No: P20038	lanterra consulting



Location: Block 42 Section 65, Belconnen, ACT	**Figure 3:** Excavation and stockpile sampling plan
Project No: P20038	lanterra consulting

Appendix B

Laboratory Data Summary Table

lanterra consulting

P20038 - Tank Excavation Assessment, Block 42 Section 65, Belconnen, ACT

Table 1: Analytical Results

							Field_ID	V1	V2	V3	V4	V5	V6	V7	V8	SP1-1	SP1-2	SP1-3	SP2-1	SP2-2	SP2-3	QC1
							Depth m	0.0-0.1														
							Sampled-date	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020
							Fill/Natural															
				ACT EPA Information Sheet 4	ASC NEPM (2013) EIL/ESL Urban Residential and Public Open Space	ASC NEPM (2013) HSL A (mg/kg) 0.0-1.0m/1.0-2.0m/2.0-4.0m	ASC NEPM (2013) HIL A																
Method_Type	**ChemName**	**Units**	**EQL**																			
Metals in soil	Arsenic, As	mg/kg	1	20	100		100	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**1**	**1**	**2**	**2**	**3**	**1**
	Cadmium, Cd	mg/kg	0.3	3			20	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
	Chromium, Cr	mg/kg	0.3	50	320		100	**28**	**25**	**22**	**22**	**21**	**23**	**8.2**	**30**	**11**	**11**	**14**	**22**	**24**	**24**	**9.5**
	Copper, Cu	mg/kg	0.5	100	110		6000	**23**	**2**	<0.5	**0.6**	**0.7**	<0.5	**1**	**0.8**	**2.1**	**1.2**	**1.5**	**2.2**	**3.9**	**2.5**	**1.3**
	Lead, Pb	mg/kg	1	100	1100		300	**5**	**7**	**2**	**3**	**3**	**1**	**4**	**2**	**7**	**4**	**4**	**8**	**5**	**5**	**4**
	Nickel, Ni	mg/kg	0.5	60	35		400	**14**	**13**	**14**	**13**	**11**	**12**	**4.3**	**15**	**5.9**	**5**	**6**	**8.8**	**13**	**9.8**	**4.6**
	Zinc, Zn	mg/kg	2	200	310		7400	**27**	**18**	**37**	**32**	**25**	**24**	**12**	**28**	**15**	**12**	**14**	**21**	**22**	**18**	**11**
	Mercury	mg/kg	0.05	1			40	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PAHs in Soil	Naphthalene	mg/kg	0.1	3	170	4/NL/NL		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1					<0.1	<0.1	<0.1	**0.1**	**0.3**	<0.1	**0.3**	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1					<0.1	<0.1	<0.1	**0.1**	**0.3**	<0.1	**0.3**	<0.1	**1.1**	**0.2**	**0.5**	<0.1	<0.1	<0.1	**0.1**
	Acenaphthylene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Acenaphthene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.4**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Fluorene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.4**	<0.1	**0.2**	<0.1	**0.6**	**0.2**	**0.2**	<0.1	<0.1	<0.1	**0.1**
	Phenanthrene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.8**	<0.1	**0.2**	<0.1	**0.9**	**0.2**	**0.3**	<0.1	<0.1	<0.1	**0.2**
	Anthracene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.2**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Fluoranthene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.7**	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Pyrene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.6**	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.3**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Chrysene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.3**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Benzo(b&j)fluoranthene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.2**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Benzo(k)fluoranthene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	0.2	0.7			<0.1	<0.1	<0.1	<0.1	**0.2**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2				3	<0.2	<0.2	<0.2	<0.2	**0.3**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3				3	<0.3	<0.3	<0.3	<0.3	**0.4**	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
	Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2				3	<0.2	<0.2	<0.2	<0.2	**0.4**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Total PAH (18)	mg/kg	0.8	20			300	<0.8	<0.8	<0.8	<0.8	**5**	<0.8	**1**	<0.8	**2.8**	<0.8	**1.2**	<0.8	<0.8	<0.8	<0.8
TRH Soil C10-C40 NEPM	TRH C10-C14	mg/kg	20					<20	<20	<20	**27**	**41**	<20	**63**	<20	**200**	**51**	**66**	<20	<20	<20	**48**
	TRH C15-C28	mg/kg	45					<45	<45	<45	**71**	**120**	<45	**160**	<45	**460**	**120**	**170**	<45	<45	<45	**130**
	TRH C29-C36	mg/kg	45					<45	<45	<45	<45	<45	<45	<45	<45	<45	<45	<45	<45	<45	<45	<45
	TRH C37-C40	mg/kg	100					<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	TRH >C10-C16	mg/kg	25					<25	<25	<25	**48**	**74**	<25	**110**	<25	**350**	**90**	**120**	<25	<25	<25	**87**
	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25		120	280/NL/NL		<25	<25	<25	**48**	**74**	<25	**110**	<25	**350**	**90**	**120**	<25	<25	<25	**87**
	TRH >C16-C34 (F3)	mg/kg	90		1300			<90	<90	<90	<90	**91**	<90	**120**	<90	**310**	<90	**120**	<90	<90	<90	<90
	TRH >C34-C40 (F4)	mg/kg	120		5600			<120	<120	<120	<120	<120	<120	<120	<120	<120	<120	<120	<120	<120	<120	<120
	TRH C10-C36 Total	mg/kg	110	1000				<110	<110	<110	<110	**160**	<110	**230**	<110	**660**	**170**	**240**	<110	<110	<110	**180**
	TRH C10-C40 Total (F bands)	mg/kg	210					<210	<210	<210	<210	<210	<210	**230**	<210	**660**	<210	**240**	<210	<210	<210	<210

lanterra consulting

P20038 - Tank Excavation Assessment, Block 42 Section 65, Belconnen, ACT

Table 1: Analytical Results

							Field_ID	V1	V2	V3	V4	V5	V6	V7	V8	SP1-1	SP1-2	SP1-3	SP2-1	SP2-2	SP2-3	QC1
							Depth m	0.0-0.1														
							Sampled-date	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020	8/05/2020
							Fill/Natural															
				ACT EPA Information Sheet 4	ASC NEPM (2013) EIL/ESL Urban Residential and Public Open Space	ASC NEPM (2013) HSL A (mg/kg) 0.0-1.0m/1.0-2.0m/2.0-4.0m	ASC NEPM (2013) HIL A															
Method_Type	**ChemName**	**Units**	**EQL**																			
BTEX + VOC	Benzene	mg/kg	0.1	1	65	0.7/1.0/2.0		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Toluene	mg/kg	0.1	1	105	480/NL/NL/NL		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Ethylbenzene	mg/kg	0.1	3	125	NL/NL/NL		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	m/p-xylene	mg/kg	0.2					<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	o-xylene	mg/kg	0.1					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Total Xylenes	mg/kg	0.3	14	45	110/310/NL		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
	Total BTEX	mg/kg	0.6					<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
	Benzene (F0)	mg/kg	20	65		0.7/1.0/2.0		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	TRH C6-C9	mg/kg	0.1					<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	TRH C6-C10	mg/kg	25					<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
	TRH C6-C10 minus BTEX (F1)	mg/kg	25		180	50/90/150		<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25

Appendix C

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Chris Gunton	Manager	Huong Crawford
Client	LANTERRA CONSULTING PTY LTD	Laboratory	SGS Alexandria Environmental
Address	PO BOX 3626 WESTON ACT 2611	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	(Not specified)	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	Chris.Gunton@lanterra.com.au	Email	au.environmental.sydney@sgs.com
Project	**P20038-DECC, UC, Belconnen**	SGS Reference	**SE206136 R0**
Order Number	**P20038**	Date Received	12 May 2020
Samples	15	Date Reported	13 May 2020

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
Organic Section Head

Parameter	Units	LOR	Sample Number: SE206136.001 Sample Matrix: Soil Sample Date: 08 May 2020 Sample Name: V1	SE206136.002 Soil 08 May 2020 V2	SE206136.003 Soil 08 May 2020 V3	SE206136.004 Soil 08 May 2020 V4
VOC's in Soil Method: AN433 Tested: 12/5/2020						
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**81**	**85**	**100**	**96**
d8-toluene (Surrogate)	%	-	**82**	**83**	**104**	**100**
Bromofluorobenzene (Surrogate)	%	-	**67**	**71**	**80**	**77**
Totals						
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 12/5/2020						
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**81**	**85**	**100**	**96**
d8-toluene (Surrogate)	%	-	**82**	**83**	**104**	**100**
Bromofluorobenzene (Surrogate)	%	-	**67**	**71**	**80**	**77**
VPH F Bands						
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE206136.001 Soil 08 May 2020 V1	SE206136.002 Soil 08 May 2020 V2	SE206136.003 Soil 08 May 2020 V3	SE206136.004 Soil 08 May 2020 V4
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 12/5/2020							
TRH C10-C14	mg/kg	20		<20	<20	<20	**27**
TRH C15-C28	mg/kg	45		<45	<45	<45	**71**
TRH C29-C36	mg/kg	45		<45	<45	<45	<45
TRH C37-C40	mg/kg	100		<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110		<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210		<210	<210	<210	<210
TRH F Bands							
TRH >C10-C16	mg/kg	25		<25	<25	<25	**48**
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25		<25	<25	<25	**48**
TRH >C16-C34 (F3)	mg/kg	90		<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120		<120	<120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 12/5/2020							
Naphthalene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1		<0.1	<0.1	<0.1	**0.1**
1-methylnaphthalene	mg/kg	0.1		<0.1	<0.1	<0.1	**0.1**
Acenaphthylene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2		<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3		<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2		<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8		<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8		<0.8	<0.8	<0.8	<0.8
Surrogates							
d5-nitrobenzene (Surrogate)	%	-		**89**	**87**	**81**	**77**
2-fluorobiphenyl (Surrogate)	%	-		**96**	**88**	**83**	**90**
d14-p-terphenyl (Surrogate)	%	-		**93**	**88**	**83**	**82**
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 12/5/2020							
Arsenic, As	mg/kg	1		**2**	**2**	**2**	**2**
Cadmium, Cd	mg/kg	0.3		<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5		**28**	**25**	**22**	**22**
Copper, Cu	mg/kg	0.5		**23**	**2.0**	<0.5	**0.6**
Nickel, Ni	mg/kg	0.5		**14**	**13**	**14**	**13**
Lead, Pb	mg/kg	1		**5**	**7**	**2**	**3**
Zinc, Zn	mg/kg	2		**27**	**18**	**37**	**32**
Mercury in Soil Method: AN312 Tested: 12/5/2020							
Mercury	mg/kg	0.05		<0.05	<0.05	<0.05	<0.05

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE206136.001 Soil 08 May 2020 V1	SE206136.002 Soil 08 May 2020 V2	SE206136.003 Soil 08 May 2020 V3	SE206136.004 Soil 08 May 2020 V4
Moisture Content Method: AN002 Tested: 12/5/2020							
% Moisture	%w/w	1		**15.4**	**14.2**	**7.5**	**13.3**

Parameter	Units	LOR	Sample Number: SE206136.005 Sample Matrix: Soil Sample Date: 08 May 2020 Sample Name: V5	SE206136.006 Soil 08 May 2020 V6	SE206136.007 Soil 08 May 2020 V7	SE206136.008 Soil 08 May 2020 V8
VOC's in Soil Method: AN433 Tested: 12/5/2020						
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**98**	**88**	**97**	**87**
d8-toluene (Surrogate)	%	-	**103**	**90**	**101**	**90**
Bromofluorobenzene (Surrogate)	%	-	**79**	**71**	**80**	**72**
Totals						
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 12/5/2020						
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**98**	**88**	**97**	**87**
d8-toluene (Surrogate)	%	-	**103**	**90**	**101**	**90**
Bromofluorobenzene (Surrogate)	%	-	**79**	**71**	**80**	**72**
VPH F Bands						
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE206136.005 Soil 08 May 2020 V5	SE206136.006 Soil 08 May 2020 V6	SE206136.007 Soil 08 May 2020 V7	SE206136.008 Soil 08 May 2020 V8
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 12/5/2020							
TRH C10-C14	mg/kg	20		**41**	<20	**63**	<20
TRH C15-C28	mg/kg	45		**120**	<45	**160**	<45
TRH C29-C36	mg/kg	45		<45	<45	<45	<45
TRH C37-C40	mg/kg	100		<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110		**160**	<110	**230**	<110
TRH >C10-C40 Total (F bands)	mg/kg	210		<210	<210	**230**	<210
TRH F Bands							
TRH >C10-C16	mg/kg	25		**74**	<25	**110**	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25		**74**	<25	**110**	<25
TRH >C16-C34 (F3)	mg/kg	90		**91**	<90	**120**	<90
TRH >C34-C40 (F4)	mg/kg	120		<120	<120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 12/5/2020							
Naphthalene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1		**0.3**	<0.1	**0.3**	<0.1
1-methylnaphthalene	mg/kg	0.1		**0.3**	<0.1	**0.3**	<0.1
Acenaphthylene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1		**0.4**	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1		**0.4**	<0.1	**0.2**	<0.1
Phenanthrene	mg/kg	0.1		**0.8**	<0.1	**0.2**	<0.1
Anthracene	mg/kg	0.1		**0.2**	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1		**0.7**	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1		**0.6**	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1		**0.3**	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1		**0.3**	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1		**0.2**	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1		**0.1**	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1		**0.2**	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		**0.1**	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2		**0.3**	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3		**0.4**	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2		**0.4**	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8		**5.0**	<0.8	**1.0**	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8		**4.5**	<0.8	<0.8	<0.8
Surrogates							
d5-nitrobenzene (Surrogate)	%	-		**76**	**77**	**79**	**90**
2-fluorobiphenyl (Surrogate)	%	-		**89**	**89**	**96**	**99**
d14-p-terphenyl (Surrogate)	%	-		**83**	**83**	**90**	**96**
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 12/5/2020							
Arsenic, As	mg/kg	1		**2**	**2**	**2**	**2**
Cadmium, Cd	mg/kg	0.3		<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5		**21**	**23**	**8.2**	**30**
Copper, Cu	mg/kg	0.5		**0.7**	<0.5	**1.0**	**0.8**
Nickel, Ni	mg/kg	0.5		**11**	**12**	**4.3**	**15**
Lead, Pb	mg/kg	1		**3**	**1**	**4**	**2**
Zinc, Zn	mg/kg	2		**25**	**24**	**12**	**28**
Mercury in Soil Method: AN312 Tested: 12/5/2020							
Mercury	mg/kg	0.05		<0.05	<0.05	<0.05	<0.05

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE206136.005 Soil 08 May 2020 V5	SE206136.006 Soil 08 May 2020 V6	SE206136.007 Soil 08 May 2020 V7	SE206136.008 Soil 08 May 2020 V8
Moisture Content Method: AN002 Tested: 12/5/2020							
% Moisture	%w/w	1		**8.7**	**8.4**	**4.3**	**8.9**

Parameter	Units	LOR	Sample Number: SE206136.009 Sample Matrix: Soil Sample Date: 08 May 2020 Sample Name: SP1-1	SE206136.010 Soil 08 May 2020 SP1-2	SE206136.011 Soil 08 May 2020 SP1-3	SE206136.012 Soil 08 May 2020 SP2-1
VOC's in Soil Method: AN433 Tested: 12/5/2020						
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**87**	**82**	**91**	**89**
d8-toluene (Surrogate)	%	-	**92**	**85**	**96**	**93**
Bromofluorobenzene (Surrogate)	%	-	**74**	**75**	**75**	**74**
Totals						
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 12/5/2020						
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Surrogates						
d4-1,2-dichloroethane (Surrogate)	%	-	**87**	**82**	**91**	**89**
d8-toluene (Surrogate)	%	-	**92**	**85**	**96**	**93**
Bromofluorobenzene (Surrogate)	%	-	**74**	**75**	**75**	**74**
VPH F Bands						
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE206136.009 Soil 08 May 2020 SP1-1	SE206136.010 Soil 08 May 2020 SP1-2	SE206136.011 Soil 08 May 2020 SP1-3	SE206136.012 Soil 08 May 2020 SP2-1
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 12/5/2020						
TRH C10-C14	mg/kg	20	**200**	**51**	**66**	<20
TRH C15-C28	mg/kg	45	**460**	**120**	**170**	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110	**660**	**170**	**240**	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	**660**	<210	**240**	<210
TRH F Bands						
TRH >C10-C16	mg/kg	25	**350**	**90**	**120**	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	**350**	**90**	**120**	<25
TRH >C16-C34 (F3)	mg/kg	90	**310**	<90	**120**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 12/5/2020						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	**0.1**	<0.1
1-methylnaphthalene	mg/kg	0.1	**1.1**	**0.2**	**0.5**	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	**0.6**	**0.2**	**0.2**	<0.1
Phenanthrene	mg/kg	0.1	**0.9**	**0.2**	**0.3**	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	**0.1**	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	**0.1**	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	**2.8**	<0.8	**1.2**	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	**1.7**	<0.8	<0.8	<0.8
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	**86**	**79**	**81**	**89**
2-fluorobiphenyl (Surrogate)	%	-	**102**	**94**	**96**	**92**
d14-p-terphenyl (Surrogate)	%	-	**89**	**82**	**86**	**94**
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 12/5/2020						
Arsenic, As	mg/kg	1	**1**	**1**	**1**	**2**
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	**11**	**11**	**14**	**22**
Copper, Cu	mg/kg	0.5	**2.1**	**1.2**	**1.5**	**2.2**
Nickel, Ni	mg/kg	0.5	**5.9**	**5.0**	**6.0**	**8.8**
Lead, Pb	mg/kg	1	**7**	**4**	**4**	**8**
Zinc, Zn	mg/kg	2	**15**	**12**	**14**	**21**
Mercury in Soil Method: AN312 Tested: 12/5/2020						
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE206136.009 Soil 08 May 2020 SP1-1	SE206136.010 Soil 08 May 2020 SP1-2	SE206136.011 Soil 08 May 2020 SP1-3	SE206136.012 Soil 08 May 2020 SP2-1
Moisture Content Method: AN002 Tested: 12/5/2020							
% Moisture	%w/w	1		**8.9**	**9.8**	**8.3**	**9.8**

Parameter	Units	LOR	Sample Number: SE206136.013 Sample Matrix: Soil Sample Date: 08 May 2020 Sample Name: SP2-2	SE206136.014 Soil 08 May 2020 SP2-3	SE206136.015 Soil 08 May 2020 QC1
VOC's in Soil Method: AN433 Tested: 12/5/2020					
Monocyclic Aromatic Hydrocarbons					
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1
Polycyclic VOCs					
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
Surrogates					
d4-1,2-dichloroethane (Surrogate)	%	-	**95**	**86**	**96**
d8-toluene (Surrogate)	%	-	**101**	**91**	**100**
Bromofluorobenzene (Surrogate)	%	-	**78**	**71**	**79**
Totals					
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 12/5/2020					
TRH C6-C10	mg/kg	25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20
Surrogates					
d4-1,2-dichloroethane (Surrogate)	%	-	**95**	**86**	**96**
d8-toluene (Surrogate)	%	-	**101**	**91**	**100**
Bromofluorobenzene (Surrogate)	%	-	**78**	**71**	**79**
VPH F Bands					
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE206136.013 Soil 08 May 2020 SP2-2	SE206136.014 Soil 08 May 2020 SP2-3	SE206136.015 Soil 08 May 2020 QC1
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 12/5/2020						
TRH C10-C14	mg/kg	20		<20	<20	**48**
TRH C15-C28	mg/kg	45		<45	<45	**130**
TRH C29-C36	mg/kg	45		<45	<45	<45
TRH C37-C40	mg/kg	100		<100	<100	<100
TRH C10-C36 Total	mg/kg	110		<110	<110	**180**
TRH >C10-C40 Total (F bands)	mg/kg	210		<210	<210	<210
TRH F Bands						
TRH >C10-C16	mg/kg	25		<25	<25	**87**
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25		<25	<25	**87**
TRH >C16-C34 (F3)	mg/kg	90		<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120		<120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 12/5/2020						
Naphthalene	mg/kg	0.1		<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1		<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1		<0.1	<0.1	**0.1**
Acenaphthylene	mg/kg	0.1		<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1		<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1		<0.1	<0.1	**0.1**
Phenanthrene	mg/kg	0.1		<0.1	<0.1	**0.2**
Anthracene	mg/kg	0.1		<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1		<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1		<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1		<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1		<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1		<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1		<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1		<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1		<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1		<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2		<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3		<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2		<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8		<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8		<0.8	<0.8	<0.8
Surrogates						
d5-nitrobenzene (Surrogate)	%	-		**83**	**86**	**97**
2-fluorobiphenyl (Surrogate)	%	-		**85**	**86**	**107**
d14-p-terphenyl (Surrogate)	%	-		**87**	**89**	**89**
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 12/5/2020						
Arsenic, As	mg/kg	1		**2**	**3**	**1**
Cadmium, Cd	mg/kg	0.3		<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5		**24**	**24**	**9.5**
Copper, Cu	mg/kg	0.5		**3.9**	**2.5**	**1.3**
Nickel, Ni	mg/kg	0.5		**13**	**9.8**	**4.6**
Lead, Pb	mg/kg	1		**5**	**5**	**4**
Zinc, Zn	mg/kg	2		**22**	**18**	**11**

Parameter	Units	LOR	Sample Number: SE206136.013 Sample Matrix: Soil Sample Date: 08 May 2020 Sample Name: SP2-2	SE206136.014 Soil 08 May 2020 SP2-3	SE206136.015 Soil 08 May 2020 QC1
Mercury in Soil Method: AN312 Tested: 12/5/2020					
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05
Moisture Content Method: AN002 Tested: 12/5/2020					
% Moisture	%w/w	1	**8.1**	**12.6**	**9.2**

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Mercury in Soil **Method: ME-(AU)-[ENV]AN312**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB199304	mg/kg	0.05	<0.05	0%	96%	99%

Moisture Content **Method: ME-(AU)-[ENV]AN002**

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB199298	%w/w	1	7 - 14%

PAH (Polynuclear Aromatic Hydrocarbons) in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB199297	mg/kg	0.1	<0.1	0%	118%	120%
2-methylnaphthalene	LB199297	mg/kg	0.1	<0.1	42%	NA	NA
1-methylnaphthalene	LB199297	mg/kg	0.1	<0.1	47%	NA	NA
Acenaphthylene	LB199297	mg/kg	0.1	<0.1	0%	118%	124%
Acenaphthene	LB199297	mg/kg	0.1	<0.1	127%	123%	126%
Fluorene	LB199297	mg/kg	0.1	<0.1	113%	NA	NA
Phenanthrene	LB199297	mg/kg	0.1	<0.1	153%	121%	127%
Anthracene	LB199297	mg/kg	0.1	<0.1	59%	113%	124%
Fluoranthene	LB199297	mg/kg	0.1	<0.1	151%	114%	123%
Pyrene	LB199297	mg/kg	0.1	<0.1	139%	122%	129%
Benzo(a)anthracene	LB199297	mg/kg	0.1	<0.1	108%	NA	NA
Chrysene	LB199297	mg/kg	0.1	<0.1	109%	NA	NA
Benzo(b&j)fluoranthene	LB199297	mg/kg	0.1	<0.1	76%	NA	NA
Benzo(k)fluoranthene	LB199297	mg/kg	0.1	<0.1	37%	NA	NA
Benzo(a)pyrene	LB199297	mg/kg	0.1	<0.1	80%	130%	135%
Indeno(1,2,3-cd)pyrene	LB199297	mg/kg	0.1	<0.1	6%	NA	NA
Dibenzo(ah)anthracene	LB199297	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(ghi)perylene	LB199297	mg/kg	0.1	<0.1	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=0	LB199297	TEQ (mg/kg)	0.2	<0.2	46%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR	LB199297	TEQ (mg/kg)	0.3	<0.3	33%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	LB199297	TEQ (mg/kg)	0.2	<0.2	59%	NA	NA
Total PAH (18)	LB199297	mg/kg	0.8	<0.8	145%	NA	NA
Total PAH (NEPM/WHO 16)	LB199297	mg/kg	0.8	<0.8			

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d5-nitrobenzene (Surrogate)	LB199297	%	-	83%	6%	80%	84%
2-fluorobiphenyl (Surrogate)	LB199297	%	-	87%	7%	93%	90%
d14-p-terphenyl (Surrogate)	LB199297	%	-	80%	2%	79%	84%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES **Method: ME-(AU)-[ENV]AN040/AN320**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB199303	mg/kg	1	<1	2 - 6%	100%	82%
Cadmium, Cd	LB199303	mg/kg	0.3	<0.3	0%	92%	77%
Chromium, Cr	LB199303	mg/kg	0.5	<0.5	14%	101%	80%
Copper, Cu	LB199303	mg/kg	0.5	<0.5	15 - 22%	102%	79%
Nickel, Ni	LB199303	mg/kg	0.5	<0.5	23 - 26%	99%	77%
Lead, Pb	LB199303	mg/kg	1	<1	10 - 35%	102%	90%
Zinc, Zn	LB199303	mg/kg	2	<2.0	17 - 31%	99%	74%

TRH (Total Recoverable Hydrocarbons) in Soil **Method: ME-(AU)-[ENV]AN403**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C10-C14	LB199297	mg/kg	20	<20	33%	95%	93%
TRH C15-C28	LB199297	mg/kg	45	<45	32%	83%	80%
TRH C29-C36	LB199297	mg/kg	45	<45	0%	80%	75%
TRH C37-C40	LB199297	mg/kg	100	<100	0%	NA	NA
TRH C10-C36 Total	LB199297	mg/kg	110	<110	32%	NA	NA
TRH >C10-C40 Total (F bands)	LB199297	mg/kg	210	<210	0%	NA	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH >C10-C16	LB199297	mg/kg	25	<25	33%	95%	93%
TRH >C10-C16 - Naphthalene (F2)	LB199297	mg/kg	25	<25	33%	NA	NA
TRH >C16-C34 (F3)	LB199297	mg/kg	90	<90	1%	80%	75%
TRH >C34-C40 (F4)	LB199297	mg/kg	120	<120	0%	75%	NA

VOC's in Soil **Method: ME-(AU)-[ENV]AN433**

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB199296	mg/kg	0.1	<0.1	0%	85%	62%
Toluene	LB199296	mg/kg	0.1	<0.1	0%	86%	71%
Ethylbenzene	LB199296	mg/kg	0.1	<0.1	0%	89%	69%
m/p-xylene	LB199296	mg/kg	0.2	<0.2	0%	88%	71%
o-xylene	LB199296	mg/kg	0.1	<0.1	0%	87%	70%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB199296	mg/kg	0.1	<0.1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB199296	%	-	110%	3%	105%	109%
d8-toluene (Surrogate)	LB199296	%	-	116%	1%	109%	89%
Bromofluorobenzene (Surrogate)	LB199296	%	-	80%	1%	75%	85%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Xylenes	LB199296	mg/kg	0.3	<0.3	0%	NA	NA
Total BTEX	LB199296	mg/kg	0.6	<0.6	0%	NA	NA

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Volatile Petroleum Hydrocarbons in Soil **Method: ME-(AU)-[ENV]AN433**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C10	LB199296	mg/kg	25	<25	0%	115%	73%
TRH C6-C9	LB199296	mg/kg	20	<20	0%	116%	69%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB199296	%	-	110%	3 - 14%	105%	109%
d8-toluene (Surrogate)	LB199296	%	-	116%	1 - 5%	109%	89%
Bromofluorobenzene (Surrogate)	LB199296	%	-	80%	1 - 3%	75%	85%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene (F0)	LB199296	mg/kg	0.1	<0.1	0%	NA	NA
TRH C6-C10 minus BTEX (F1)	LB199296	mg/kg	25	<25	0%	129%	74%

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	Carcinogenic PAHs may be expressed as Benzo(a)pyrene equivalents by applying the BaP toxicity equivalence factor (NEPM 1999, June 2013, B7). These can be reported as the individual PAHs and as a sum of carcinogenic PAHs. The sum is reported three ways, the first assuming all <LOR results are zero, the second assuming all < LOR results are half the LOR and the third assuming all <LOR results are the LOR.
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
		NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

SAMPLE RECEIPT ADVICE

SE206136

CLIENT DETAILS

Contact	Chris Gunton
Client	LANTERRA CONSULTING PTY LTD
Address	PO BOX 3626 WESTON ACT 2611
Telephone	(Not specified)
Facsimile	(Not specified)
Email	Chris.Gunton@lanterra.com.au
Project	**P20038-DECC, UC, Belconnen**
Order Number	**P20038**
Samples	15

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Tue 12/5/2020
Report Due	Wed 13/5/2020
SGS Reference	**SE206136**

SUBMISSION DETAILS

This is to confirm that 15 samples were received on Tuesday 12/5/2020. Results are expected to be ready by COB Wednesday 13/5/2020.
Please quote SGS reference SE206136 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	15 Soil
Date documentation received	12/5/2020	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	10.4°C	Sufficient sample for analysis	Yes
Turnaround time requested	Next Day		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

SAMPLE RECEIPT ADVICE

SE206136

CLIENT DETAILS

Client LANTERRA CONSULTING PTY LTD

Project P20038-DECC, UC, Belconnen

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	V1	1	26	7	10	11	7
002	V2	1	26	7	10	11	7
003	V3	1	26	7	10	11	7
004	V4	1	26	7	10	11	7
005	V5	1	26	7	10	11	7
006	V6	1	26	7	10	11	7
007	V7	1	26	7	10	11	7
008	V8	1	26	7	10	11	7
009	SP1-1	1	26	7	10	11	7
010	SP1-2	1	26	7	10	11	7
011	SP1-3	1	26	7	10	11	7
012	SP2-1	1	26	7	10	11	7
013	SP2-2	1	26	7	10	11	7
014	SP2-3	1	26	7	10	11	7
015	QC1	1	26	7	10	11	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE206136

CLIENT DETAILS

Client LANTERRA CONSULTING PTY LTD

Project P20038-DECC, UC, Belconnen

SUMMARY OF ANALYSIS

No.	Sample ID	Moisture Content
001	V1	1
002	V2	1
003	V3	1
004	V4	1
005	V5	1
006	V6	1
007	V7	1
008	V8	1
009	SP1-1	1
010	SP1-2	1
011	SP1-3	1
012	SP2-1	1
013	SP2-2	1
014	SP2-3	1
015	QC1	1

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

STATEMENT OF QA/QC PERFORMANCE

SE206136 R0

CLIENT DETAILS

Contact	Chris Gunton
Client	LANTERRA CONSULTING PTY LTD
Address	PO BOX 3626 WESTON ACT 2611
Telephone	(Not specified)
Facsimile	(Not specified)
Email	Chris.Gunton@lanterra.com.au
Project	**P20038-DECC, UC, Belconnen**
Order Number	**P20038**
Samples	15

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE206136 R0**
Date Received	12 May 2020
Date Reported	13 May 2020

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	8 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	15 Soil
Date documentation received	12/5/2020	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	10.4°C	Sufficient sample for analysis	Yes
Turnaround time requested	Next Day		

HOLDING TIME SUMMARY

SE206136 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
V1	SE206136.001	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
V2	SE206136.002	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
V3	SE206136.003	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
V4	SE206136.004	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
V5	SE206136.005	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
V6	SE206136.006	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
V7	SE206136.007	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
V8	SE206136.008	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
SP1-1	SE206136.009	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
SP1-2	SE206136.010	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
SP1-3	SE206136.011	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
SP2-1	SE206136.012	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
SP2-2	SE206136.013	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
SP2-3	SE206136.014	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020
QC1	SE206136.015	LB199304	08 May 2020	12 May 2020	05 Jun 2020	12 May 2020	05 Jun 2020	13 May 2020

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
V1	SE206136.001	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
V2	SE206136.002	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
V3	SE206136.003	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
V4	SE206136.004	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
V5	SE206136.005	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
V6	SE206136.006	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
V7	SE206136.007	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
V8	SE206136.008	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
SP1-1	SE206136.009	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
SP1-2	SE206136.010	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
SP1-3	SE206136.011	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
SP2-1	SE206136.012	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
SP2-2	SE206136.013	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
SP2-3	SE206136.014	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020
QC1	SE206136.015	LB199298	08 May 2020	12 May 2020	22 May 2020	12 May 2020	17 May 2020	13 May 2020

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
V1	SE206136.001	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V2	SE206136.002	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V3	SE206136.003	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V4	SE206136.004	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V5	SE206136.005	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V6	SE206136.006	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V7	SE206136.007	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V8	SE206136.008	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-1	SE206136.009	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-2	SE206136.010	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-3	SE206136.011	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-1	SE206136.012	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-2	SE206136.013	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-3	SE206136.014	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
QC1	SE206136.015	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
V1	SE206136.001	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
V2	SE206136.002	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
V3	SE206136.003	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
V4	SE206136.004	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
V5	SE206136.005	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
V6	SE206136.006	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
V7	SE206136.007	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020

HOLDING TIME SUMMARY

SE206136 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
V8	SE206136.008	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
SP1-1	SE206136.009	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
SP1-2	SE206136.010	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
SP1-3	SE206136.011	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
SP2-1	SE206136.012	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
SP2-2	SE206136.013	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
SP2-3	SE206136.014	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020
QC1	SE206136.015	LB199303	08 May 2020	12 May 2020	04 Nov 2020	12 May 2020	04 Nov 2020	13 May 2020

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
V1	SE206136.001	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V2	SE206136.002	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V3	SE206136.003	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V4	SE206136.004	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V5	SE206136.005	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V6	SE206136.006	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V7	SE206136.007	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V8	SE206136.008	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-1	SE206136.009	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-2	SE206136.010	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-3	SE206136.011	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-1	SE206136.012	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-2	SE206136.013	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-3	SE206136.014	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
QC1	SE206136.015	LB199297	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
V1	SE206136.001	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V2	SE206136.002	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V3	SE206136.003	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V4	SE206136.004	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V5	SE206136.005	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V6	SE206136.006	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V7	SE206136.007	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V8	SE206136.008	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-1	SE206136.009	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-2	SE206136.010	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-3	SE206136.011	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-1	SE206136.012	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-2	SE206136.013	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-3	SE206136.014	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
QC1	SE206136.015	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
V1	SE206136.001	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V2	SE206136.002	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V3	SE206136.003	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V4	SE206136.004	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V5	SE206136.005	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V6	SE206136.006	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V7	SE206136.007	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
V8	SE206136.008	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-1	SE206136.009	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-2	SE206136.010	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP1-3	SE206136.011	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-1	SE206136.012	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-2	SE206136.013	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020
SP2-3	SE206136.014	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020

HOLDING TIME SUMMARY

SE206136 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QC1	SE206136.015	LB199296	08 May 2020	12 May 2020	22 May 2020	12 May 2020	21 Jun 2020	13 May 2020

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	V1	SE206136.001	%	70 - 130%	96
	V2	SE206136.002	%	70 - 130%	88
	V3	SE206136.003	%	70 - 130%	83
	V4	SE206136.004	%	70 - 130%	90
	V5	SE206136.005	%	70 - 130%	89
	V6	SE206136.006	%	70 - 130%	89
	V7	SE206136.007	%	70 - 130%	96
	V8	SE206136.008	%	70 - 130%	99
	SP1-1	SE206136.009	%	70 - 130%	102
	SP1-2	SE206136.010	%	70 - 130%	94
	SP1-3	SE206136.011	%	70 - 130%	96
	SP2-1	SE206136.012	%	70 - 130%	92
	SP2-2	SE206136.013	%	70 - 130%	85
	SP2-3	SE206136.014	%	70 - 130%	86
	QC1	SE206136.015	%	70 - 130%	107
d14-p-terphenyl (Surrogate)	V1	SE206136.001	%	70 - 130%	93
	V2	SE206136.002	%	70 - 130%	88
	V3	SE206136.003	%	70 - 130%	83
	V4	SE206136.004	%	70 - 130%	82
	V5	SE206136.005	%	70 - 130%	83
	V6	SE206136.006	%	70 - 130%	83
	V7	SE206136.007	%	70 - 130%	90
	V8	SE206136.008	%	70 - 130%	96
	SP1-1	SE206136.009	%	70 - 130%	89
	SP1-2	SE206136.010	%	70 - 130%	82
	SP1-3	SE206136.011	%	70 - 130%	86
	SP2-1	SE206136.012	%	70 - 130%	94
	SP2-2	SE206136.013	%	70 - 130%	87
	SP2-3	SE206136.014	%	70 - 130%	89
	QC1	SE206136.015	%	70 - 130%	89
d5-nitrobenzene (Surrogate)	V1	SE206136.001	%	70 - 130%	89
	V2	SE206136.002	%	70 - 130%	87
	V3	SE206136.003	%	70 - 130%	81
	V4	SE206136.004	%	70 - 130%	77
	V5	SE206136.005	%	70 - 130%	76
	V6	SE206136.006	%	70 - 130%	77
	V7	SE206136.007	%	70 - 130%	79
	V8	SE206136.008	%	70 - 130%	90
	SP1-1	SE206136.009	%	70 - 130%	86
	SP1-2	SE206136.010	%	70 - 130%	79
	SP1-3	SE206136.011	%	70 - 130%	81
	SP2-1	SE206136.012	%	70 - 130%	89
	SP2-2	SE206136.013	%	70 - 130%	83
	SP2-3	SE206136.014	%	70 - 130%	86
	QC1	SE206136.015	%	70 - 130%	97

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	V1	SE206136.001	%	60 - 130%	67
	V2	SE206136.002	%	60 - 130%	71
	V3	SE206136.003	%	60 - 130%	80
	V4	SE206136.004	%	60 - 130%	77
	V5	SE206136.005	%	60 - 130%	79
	V6	SE206136.006	%	60 - 130%	71
	V7	SE206136.007	%	60 - 130%	80
	V8	SE206136.008	%	60 - 130%	72
	SP1-1	SE206136.009	%	60 - 130%	74
	SP1-2	SE206136.010	%	60 - 130%	75
	SP1-3	SE206136.011	%	60 - 130%	75
	SP2-1	SE206136.012	%	60 - 130%	74
	SP2-2	SE206136.013	%	60 - 130%	78

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	SP2-3	SE206136.014	%	60 - 130%	71
	QC1	SE206136.015	%	60 - 130%	79
d4-1,2-dichloroethane (Surrogate)	V1	SE206136.001	%	60 - 130%	81
	V2	SE206136.002	%	60 - 130%	85
	V3	SE206136.003	%	60 - 130%	100
	V4	SE206136.004	%	60 - 130%	96
	V5	SE206136.005	%	60 - 130%	98
	V6	SE206136.006	%	60 - 130%	88
	V7	SE206136.007	%	60 - 130%	97
	V8	SE206136.008	%	60 - 130%	87
	SP1-1	SE206136.009	%	60 - 130%	87
	SP1-2	SE206136.010	%	60 - 130%	82
	SP1-3	SE206136.011	%	60 - 130%	91
	SP2-1	SE206136.012	%	60 - 130%	89
	SP2-2	SE206136.013	%	60 - 130%	95
	SP2-3	SE206136.014	%	60 - 130%	86
	QC1	SE206136.015	%	60 - 130%	96
d8-toluene (Surrogate)	V1	SE206136.001	%	60 - 130%	82
	V2	SE206136.002	%	60 - 130%	83
	V3	SE206136.003	%	60 - 130%	104
	V4	SE206136.004	%	60 - 130%	100
	V5	SE206136.005	%	60 - 130%	103
	V6	SE206136.006	%	60 - 130%	90
	V7	SE206136.007	%	60 - 130%	101
	V8	SE206136.008	%	60 - 130%	90
	SP1-1	SE206136.009	%	60 - 130%	92
	SP1-2	SE206136.010	%	60 - 130%	85
	SP1-3	SE206136.011	%	60 - 130%	96
	SP2-1	SE206136.012	%	60 - 130%	93
	SP2-2	SE206136.013	%	60 - 130%	101
	SP2-3	SE206136.014	%	60 - 130%	91
	QC1	SE206136.015	%	60 - 130%	100

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	V1	SE206136.001	%	60 - 130%	67
	V2	SE206136.002	%	60 - 130%	71
	V3	SE206136.003	%	60 - 130%	80
	V4	SE206136.004	%	60 - 130%	77
	V5	SE206136.005	%	60 - 130%	79
	V6	SE206136.006	%	60 - 130%	71
	V7	SE206136.007	%	60 - 130%	80
	V8	SE206136.008	%	60 - 130%	72
	SP1-1	SE206136.009	%	60 - 130%	74
	SP1-2	SE206136.010	%	60 - 130%	75
	SP1-3	SE206136.011	%	60 - 130%	75
	SP2-1	SE206136.012	%	60 - 130%	74
	SP2-2	SE206136.013	%	60 - 130%	78
	SP2-3	SE206136.014	%	60 - 130%	71
	QC1	SE206136.015	%	60 - 130%	79
d4-1,2-dichloroethane (Surrogate)	V1	SE206136.001	%	60 - 130%	81
	V2	SE206136.002	%	60 - 130%	85
	V3	SE206136.003	%	60 - 130%	100
	V4	SE206136.004	%	60 - 130%	96
	V5	SE206136.005	%	60 - 130%	98
	V6	SE206136.006	%	60 - 130%	88
	V7	SE206136.007	%	60 - 130%	97
	V8	SE206136.008	%	60 - 130%	87
	SP1-1	SE206136.009	%	60 - 130%	87
	SP1-2	SE206136.010	%	60 - 130%	82
	SP1-3	SE206136.011	%	60 - 130%	91

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	SP2-1	SE206136.012	%	60 - 130%	89
	SP2-2	SE206136.013	%	60 - 130%	95
	SP2-3	SE206136.014	%	60 - 130%	86
	QC1	SE206136.015	%	60 - 130%	96
d8-toluene (Surrogate)	V1	SE206136.001	%	60 - 130%	82
	V2	SE206136.002	%	60 - 130%	83
	V3	SE206136.003	%	60 - 130%	104
	V4	SE206136.004	%	60 - 130%	100
	V5	SE206136.005	%	60 - 130%	103
	V6	SE206136.006	%	60 - 130%	90
	V7	SE206136.007	%	60 - 130%	101
	V8	SE206136.008	%	60 - 130%	90
	SP1-1	SE206136.009	%	60 - 130%	92
	SP1-2	SE206136.010	%	60 - 130%	85
	SP1-3	SE206136.011	%	60 - 130%	96
	SP2-1	SE206136.012	%	60 - 130%	93
	SP2-2	SE206136.013	%	60 - 130%	101
	SP2-3	SE206136.014	%	60 - 130%	91
	QC1	SE206136.015	%	60 - 130%	100

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB199304.001	Mercury	mg/kg	0.05	<0.05

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB199297.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	83
		2-fluorobiphenyl (Surrogate)	%	-	87
		d14-p-terphenyl (Surrogate)	%	-	80

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB199303.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB199297.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB199296.001	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	110
		d8-toluene (Surrogate)	%	-	116
		Bromofluorobenzene (Surrogate)	%	-	80
	Totals	Total BTEX	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB199296.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	110

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE206136.010	LB199304.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE206143.003	LB199304.023	Mercury	mg/kg	0.05	<0.05	<0.05	143	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE206085.002	LB199298.022	% Moisture	%w/w	1	11.1	11.8	39	7
SE206136.010	LB199298.011	% Moisture	%w/w	1	9.8	8.6	41	14

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE206136.005	LB199297.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	0.3	0.2	75	42
			1-methylnaphthalene	mg/kg	0.1	0.3	0.2	72	47
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	0.4	<0.1	71	127 ⑨
			Fluorene	mg/kg	0.1	0.4	<0.1	76	113 ⑨
			Phenanthrene	mg/kg	0.1	0.8	0.1	52	153 ⑨
			Anthracene	mg/kg	0.1	0.2	<0.1	139	59
			Fluoranthene	mg/kg	0.1	0.7	<0.1	57	151 ⑨
			Pyrene	mg/kg	0.1	0.6	<0.1	65	139 ⑨
			Benzo(a)anthracene	mg/kg	0.1	0.3	<0.1	88	108 ⑨
			Chrysene	mg/kg	0.1	0.3	<0.1	87	109 ⑨
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.2	<0.1	120	76
			Benzo(k)fluoranthene	mg/kg	0.1	0.1	<0.1	168	37
			Benzo(a)pyrene	mg/kg	0.1	0.2	<0.1	116	80
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.1	<0.1	200	6
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	0.3	<0.2	136	46
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	0.4	<0.3	101	33
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	0.4	<0.2	92	59
			Total PAH (18)	mg/kg	0.8	5.0	<0.8	59	145 ⑨
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	6
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	7
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE206136.010	LB199303.014	Arsenic, As	mg/kg	1	1	1	117	6
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	11	12	34	14
		Copper, Cu	mg/kg	0.5	1.2	1.0	76	22
		Nickel, Ni	mg/kg	0.5	5.0	6.4	39	26
		Lead, Pb	mg/kg	1	4	4	57	10
		Zinc, Zn	mg/kg	2	12	17	44	31
SE206143.003	LB199303.023	Arsenic, As	mg/kg	1	4	4	57	2
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	12	11	34	14
		Copper, Cu	mg/kg	0.5	18	16	33	15
		Nickel, Ni	mg/kg	0.5	7.7	6.1	37	23
		Lead, Pb	mg/kg	1	38	26	33	35 ②
		Zinc, Zn	mg/kg	2	53	45	34	17

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE206136.005	LB199297.014	TRH C10-C14	mg/kg	20	41	29	88	33
		TRH C15-C28	mg/kg	45	120	88	73	32
		TRH C29-C36	mg/kg	45	<45	<45	200	0
		TRH C37-C40	mg/kg	100	<100	<100	200	0
		TRH C10-C36 Total	mg/kg	110	160	120	109	32

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE206136.005	LB199297.014		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	74	53	69	33
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	74	53	69	33
			TRH >C16-C34 (F3)	mg/kg	90	91	<90	145	1
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE206136.010	LB199296.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	167	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.2	8.5	50	3
			d8-toluene (Surrogate)	mg/kg	-	8.5	8.6	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.5	7.4	50	1
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE206101.001	LB199296.024		TRH C6-C10	mg/kg	25	3.388448784	73.1014008719	200	0
			TRH C6-C9	mg/kg	20	3.372023823	63.0451171435	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.245296131	16.0481121425	30	14
			d8-toluene (Surrogate)	mg/kg	-	6.543879896	46.8890512805	30	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.390009622	25.5616512839	30	3
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0.004078762	00.0044150180	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	3.388448784	73.1014008719	200	0
SE206136.010	LB199296.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.2	8.5	30	3
			d8-toluene (Surrogate)	mg/kg	-	8.5	8.6	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.5	7.4	30	1
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB199304.002	Mercury	mg/kg	0.05	0.19	0.2	70 - 130	96

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB199297.002		Naphthalene	mg/kg	0.1	4.7	4	60 - 140	118
		Acenaphthylene	mg/kg	0.1	4.7	4	60 - 140	118
		Acenaphthene	mg/kg	0.1	4.9	4	60 - 140	123
		Phenanthrene	mg/kg	0.1	4.8	4	60 - 140	121
		Anthracene	mg/kg	0.1	4.5	4	60 - 140	113
		Fluoranthene	mg/kg	0.1	4.6	4	60 - 140	114
		Pyrene	mg/kg	0.1	4.9	4	60 - 140	122
		Benzo(a)pyrene	mg/kg	0.1	5.2	4	60 - 140	130
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	80
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	93
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	79

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB199303.002	Arsenic, As	mg/kg	1	320	318.22	80 - 120	100
	Cadmium, Cd	mg/kg	0.3	5.0	5.41	80 - 120	92
	Chromium, Cr	mg/kg	0.5	39	38.31	80 - 120	101
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	102
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	99
	Lead, Pb	mg/kg	1	91	89.9	80 - 120	102
	Zinc, Zn	mg/kg	2	270	273	80 - 120	99

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB199297.002		TRH C10-C14	mg/kg	20	38	40	60 - 140	95
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	83
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	80
	TRH F Bands	TRH >C10-C16	mg/kg	25	38	40	60 - 140	95
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	80
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	75

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB199296.002	Monocyclic	Benzene	mg/kg	0.1	4.3	5	60 - 140	85
	Aromatic	Toluene	mg/kg	0.1	4.3	5	60 - 140	86
		Ethylbenzene	mg/kg	0.1	4.4	5	60 - 140	89
		m/p-xylene	mg/kg	0.2	8.8	10	60 - 140	88
		o-xylene	mg/kg	0.1	4.3	5	60 - 140	87
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.5	10	70 - 130	105
		d8-toluene (Surrogate)	mg/kg	-	10.9	10	70 - 130	109
		Bromofluorobenzene (Surrogate)	mg/kg	-	7.5	10	70 - 130	75

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB199296.002		TRH C6-C10	mg/kg	25	110	92.5	60 - 140	115
		TRH C6-C9	mg/kg	20	92	80	60 - 140	116
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.5	10	70 - 130	105
		Bromofluorobenzene (Surrogate)	mg/kg	-	7.5	10	70 - 130	75
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	80	62.5	60 - 140	129

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE206136.001	LB199304.004	Mercury	mg/kg	0.05	0.21	<0.05	0.2	99

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE206136.001	LB199297.034		Naphthalene	mg/kg	0.1	4.8	<0.1	4	120
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	5.0	<0.1	4	124
			Acenaphthene	mg/kg	0.1	5.0	<0.1	4	126
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	5.1	<0.1	4	127
			Anthracene	mg/kg	0.1	5.0	<0.1	4	124
			Fluoranthene	mg/kg	0.1	4.9	<0.1	4	123
			Pyrene	mg/kg	0.1	5.1	<0.1	4	129
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	5.4	<0.1	4	135
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	5.4	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	5.5	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	5.5	<0.2	-	-
			Total PAH (18)	mg/kg	0.8	40	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	-	84
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	90
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	84

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE206136.001	LB199303.004	Arsenic, As	mg/kg	1	43	2	50	82
		Cadmium, Cd	mg/kg	0.3	38	<0.3	50	77
		Chromium, Cr	mg/kg	0.5	68	28	50	80
		Copper, Cu	mg/kg	0.5	63	23	50	79
		Nickel, Ni	mg/kg	0.5	52	14	50	77
		Lead, Pb	mg/kg	1	50	5	50	90
		Zinc, Zn	mg/kg	2	64	27	50	74

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE206136.001	LB199297.034		TRH C10-C14	mg/kg	20	37	<20	40	93
			TRH C15-C28	mg/kg	45	<45	<45	40	80
			TRH C29-C36	mg/kg	45	<45	<45	40	75
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	37	<25	40	93
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	32	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	75
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE206136.001	LB199296.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	3.1	<0.1	5	62
			Toluene	mg/kg	0.1	3.7	<0.1	5	71
			Ethylbenzene	mg/kg	0.1	3.5	<0.1	5	69
			m/p-xylene	mg/kg	0.2	7.2	<0.2	10	71
			o-xylene	mg/kg	0.1	3.5	<0.1	5	70

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE206136.001	LB199296.004	Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.9	8.1	10	109
			d8-toluene (Surrogate)	mg/kg	-	8.9	8.2	10	89
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.5	6.7	10	85
		Totals	Total Xylenes	mg/kg	0.3	11	<0.3	-	-
			Total BTEX	mg/kg	0.6	21	<0.6	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE206136.001	LB199296.004		TRH C6-C10	mg/kg	25	70	<25	92.5	73
			TRH C6-C9	mg/kg	20	58	<20	80	69
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.9	8.1	10	109
			d8-toluene (Surrogate)	mg/kg	-	8.9	8.2	10	89
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.5	6.7	-	85
		VPH F	Benzene (F0)	mg/kg	0.1	3.1	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	49	<25	62.5	74

MATRIX SPIKE DUPLICATES

SE206136 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: https://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

SGS

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page ____ of ____

SGS Environmental Services
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email:
au.samplereceipt.sydney@sgs.com

Company Name:	Lanterra Consulting Pty Ltd	Project Name/No:	P20038 – DECC, UC, Belconnen
Address:	Unit 4, 19 Trenerry Street	Purchase Order No:	
	Weston, ACT, 2611	Results Required By:	**1 Day TAT**
		Telephone:	0432 324 348
Contact Name:	Chris Gunton	Facsimile:	
		Email Results:	Chris.gunton@lanterra.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL10 – TRH, BTEX, PAH, 8 Metals
V1	8/05/20	1		X		1	X
V2	8/05/20	2		X		1	X
V3	8/05/20	3		X		1	X
V4	8/05/20	4		X		1	X
V5	8/05/20	5		X		1	X
V6	8/05/20	6		X		1	X
V7	8/05/20	7		X		1	X
V8	8/05/20	8		X		1	X
SP1-1	8/05/20	9		X		1	X
SP1-2	8/05/20	10		X		1	X

SGS EHS Sydney COC
SE206136

Relinquished By:	Date/Time: 11/5/20	Received By:	Date/Time 12/05/20 @ 12:15
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: Yes/ No	Temperature: Ambient / Chilled	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No: Lante MPP140
	Comments:		

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page ____ of ____

SGS Environmental Services
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email:
au.samplereceipt.sydney@sgs.com

Company Name:	Lanterra Consulting Pty Ltd	Project Name/No:	P20038 – DECC, UC, Belconnen
Address:	Unit 4, 19 Trenerry Street	Purchase Order No:	
	Weston, ACT, 2611	Results Required By:	**1 Day TAT**
		Telephone:	0432 324 348
Contact Name:	Chris Gunton	Facsimile:	
		Email Results:	Chris.gunton@lanterra.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL10 – TRH, BTEX, PAH, 8 Metals	TRH, BTEX, PAH, 8 Metals												
SP1-3	8/05/20	11		X		2	X													
SP2-1	8/05/20	12		X		1	X													
SP2-2	8/05/20	13		X		1	X													
SP2-3	8/05/20	14		X		1	X													
QC1	8/05/20	15		X		1	X													
QC2	8/05/20			X		1		X												**Please Forward to Envirolab**

Relinquished By:	Date/Time: 11/5/20	Received By: B. Buhay	Date/Time 12/05/20 @ 12.15
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: (Yes) / No	Temperature: Ambient / (Chilled)	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No: Lante MPP140
	Comments:		