

John Holland Group Ltd Pty

Detailed Site Investigation

M4 Off Ramp, Eastern Creek NSW

2171

Prepared for:

John Holland Group Pty Ltd

Document Date:

4 December 2024

Reference:

S-05667.DSI.M7.024_M4 Ramp

Author Name William Xu

Mobile 0452 316 267

Email William.xu@edp-au.com

Website www.edp-au.com

DOCUMENT CONTROL

Project Details:	
Report Name:	Detailed Site Investigation – M4 Off Ramp along 99 Wallgrove Road, Eastern Creek NSW 2766
Client Name:	John Holland Group Pty Ltd
Reference:	S-05667.DSI.M7.024_M4 Ramp
Prepared by:	William Xu
Reviewed by:	Jonathon Hilliard

Revision No.:	Revision Date:	Reason for Issue:	Authorised:	
			Name and Position:	Signature:
Draft	4/12/2024	First draft to client	Jonathon Hilliard – Principal Environmental Scientist	 

EXECUTIVE SUMMARY

EDP Consultants Pty Ltd (EDP) was engaged by John Holland Pty Ltd (John Holland) to conduct a Detailed Site Investigation (DSI) ahead of planned excavation works for the M4 Off Ramp (the site).

The site comprises of the west embankment, near existing commercial developments and a shared path/cycleway, and median strip situated along the M7 Motorway, along 99 Old Wallgrove Road, Eastern Creek NSW 2766, which is situated south of where the M7 Motorway intersects the M4 Motorway.

The site is approximately 4,000 m² and extends approximately 300 m between chainage kilometre (km) 18,850 – 19,150. The subject area of this assessment is to be affected by excavation works and construction of the M4 Off Ramp as part of the M7-M12 Integration Project.

This DSI will form part of a broader contamination soil assessment within the M7 Widening and has been prepared to satisfy the NSW M7 Condition of Approval (NSW M7 CoA) (SSI -663-Mod-6), Revised Environmental Management Measures (REMMS) and developed in accordance with Transport for NSW (TfNSW) Specification D&C G36 Environmental Protection.

The objectives of the DSI were to comply with SSI 663 M7 CoA D67 and REMM C2, which requires the preparation of a report in accordance with the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended in April 2013)* (NEPM 2013) to characterise the extent of contamination within the site. The desired outcomes of the investigation were to determine whether concentrations of contaminants would preclude assessed soils for use/re-use within the M7-M12 Integration project and whether the land is suitable (for the intended final land use) or can be made suitable through remediation.

This intrusive assessment involved excavating eleven boreholes and test pits on the west embankment and median strip of the M7 Motorway. The excavation was conducted using a drill rig and excavator, with soil samples collected across the investigation area down to identified natural material. A Tier I Qualitative review of the data set was compared against the adopted human health and ecological criteria for the site, in accordance with NEPM 2013 and other applicable guidelines.

Chemical analytical results presented no exceedances against the adopted human health risk criteria for workers during construction or visitors during ongoing usage of the roadway.

Based on the review of the site history, desktop assessment, site inspections, intrusive investigation and analytical results and review forming this DSI, EDP makes the following conclusions:

- A Tier I Qualitative review of the analytical dataset has identified no risks to the development from a human health nor an ecological perspective with all results below the respective criteria for ongoing commercial/industrial land usage;
- Physical characteristics of soils across the site, specifically regarding acid sulfate potential have not shown evidence of PASS/AASS;
- Soils presented salinity ranging from 'non-saline' and 'slight saline' across the site; and
- Soils within the investigation extent of the site are considered low risk and acceptable for reuse during the construction of the M7-M12 Integration Project and for the final intended land use subject to the implementation of an unexpected finds protocol. Based on the findings of this report, areas previously identified as moderate risk in the CIA (AECOM 2022) conducted for the site under Condition 1A of Schedule 1, have been confirmed as low risk.

Based on the findings of this DSI, EDP requires that the following recommendations are implemented to ensure the low risk for commercial/industrial land use conclusion is upheld or can be confirmed. This includes the following:

- Although no asbestos fragment on soil was identified, any future unknown instances of contamination discovered during the course of the construction works would be appropriately managed under the site's unexpected finds procedure and asbestos management plan as referenced below:

- M7-M12 Integration project Construction Environmental Management Plan - Appendix B4: Construction Soil and Water Management Sub-plan – Appendix M: Unexpected Contaminated Land Finds Procedure (M7M12 UDC-JHGRP-M7A-EN-PLN-000076_CSWMP_RevH_AppM).
- M7-M12 Integration project Construction Environmental Management Plan – Appendix B5: Construction Contamination Land Management Sub-plan – Appendix B: Asbestos Management Plan (M7I2UDC-JHGRP-M7A-EN-PLN-000077_CCLMP_RevE_AppB).
- If the future use of the site is proposed to change to a more sensitive land use, a review of the results with a comparison against human health and ecological criteria for the proposed new land use must be undertaken.

The preparation of this DSI is deemed to satisfy the NSW M7 CoA D67, Revised Environmental Management Measure C2.

Contents

EXECUTIVE SUMMARY.....	2
1. Introduction.....	3
2. Purpose & Objectives.....	3
3. Background.....	4
4. Compliance with Environmental Requirements.....	5
4.1 Technical Framework.....	5
4.2 Ministers Conditions of Approval.....	6
4.3 TfNSW Requirements.....	7
5. Scope of Works.....	8
6. Previous Investigations.....	9
6.1 TfNSW Westlink M7 Widening Modification Report (AECOM, 2022) – Chapter 7.1.1a and 7.1.1b (App L1, L2 and L3) Contamination Impact Assessment.....	9
6.2 EDP Detailed Site Investigation M7 Widening - Zone C – Sydney NSW (EDP 2024).....	9
7. Site Information.....	10
7.1 Site Identification Summary.....	10
7.2 Historical Aerial Photograph Review.....	11
7.3 Environmental Settings.....	12
7.4 Public Records and Potentially Contaminated Areas.....	13
8. Preliminary Conceptual Site Model.....	14
9. Data Quality Objectives.....	16
9.1 Data Quality Indicators.....	18
10. Methodology.....	19
10.1 Site Mobilisation and Sampling.....	19
10.1.1 Asbestos Field Screening.....	20
10.1.2 Asbestos in Soil Sampling.....	20
11. Laboratory Analysis.....	20
12. Adopted Soil Assessment Criteria.....	21
12.1 Framework.....	21
12.2 Soil Assessment Criteria.....	21
12.3 Asbestos in Soil.....	23
12.4 Salinity.....	23
12.5 Aesthetics.....	24
13. Results.....	24
13.1 Field Observations and Data.....	24
13.1.1 Site Observations.....	24
13.1.2 Subsurface Profile.....	24

13.1.3 Salinity.....	25
13.2 Chemical Analysis.....	26
13.2.1 Soil Chemical Analytical Results	26
14. Quality Assurance and Quality Control	26
15. Conceptual Site Model.....	27
16. Constraints to the Assessment.....	29
17. Discussion & Conclusion	29
18. Recommendations.....	29
STATEMENT OF LIMITATIONS	30
Appendix A: Figures.....	31
Appendix B: Historical Aerial Photographs	32
Appendix C: Land Insight Report.....	33
Appendix D: Photolog.....	34
Appendix E: Borehole and Test Pit Logs	35
Appendix F: NATA Accredited Laboratory Reports	36
Appendix G: Table of Results	37
Appendix H: Quality Assurance / Quality Control.....	38
QUALITY ASSURANCE / QUALITY CONTROL	39

1. INTRODUCTION

EDP Consultants Pty Ltd (EDP) was engaged by John Holland Pty Ltd (John Holland) to conduct a Detailed Site Investigation (DSI) ahead of planned excavation works for the M4 Off Ramp (the site). The site is situated on the west embankment and median strip located south of the M7 Motorway intersects the M4 Motorway, along 99 Wallgrove Road, Eastern Creek NSW 2766. The site area is to be affected by excavation works, and construction works planned for the area consist of the construction M4 Off Ramp as part of the M7-M12 Integration Project.

The Project has Commonwealth approval by the Federal Minister for the Environment under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act, EPBC 2018/8286) and the NSW Minister for Planning under the Environment Protection and Planning Act (EP&A Act, SSI 9364 and SSI-663-Mod-6). The Project is being delivered by the Western Sydney Orbital Company (WSO Co) and John Holland.

This DSI will form part of a broader contamination soil assessment within the M7 Widening and has been prepared to satisfy the NSW M7 Conditions of Approval (NSW M7 CoA) (SSI-663-Mod-6, Revised Environmental Management Measures (REMMS) and has been developed in accordance with Transport for NSW (TfNSW) Specification D&C G36 Environmental Protection.

The subject area of this assessment consists of the west embankment and median strip of M7 Motorway, between existing residences and shared path/cycleway, extending approximately 300 m between chainage kilometre (km) 18,850 – 19,150.

The site encompasses a total area of approximately 4,000 m². The site is specified by the relative Lot 4 Deposited Plan (DP) 1041745.

The site location and boundaries of the area subject to this assessment are provided in **Figures 1 and 2** in **Appendix A**.

2. PURPOSE & OBJECTIVES

As mentioned, this DSI has been prepared to satisfy requirements of the NSW M7 CoA (SSI 663-Mod-6), conditions D67 and M7 REMM C2 presented in **Section 4** of this report. The objectives of the DSI were to:

- Assess the nature and extent of contamination at the site based on historical site usage by performing a desktop analysis and site history review and collecting and analysing sufficient and representative data from all relevant media (soil);
- Preparation of this DSI report that documents the findings of the investigation, the data quality and limitations in general accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended in April 2013) (NEPM 2013); and
- Within the DSI, assess the potential risks to human health and the environment posed by any identified contamination, considering the current and proposed land uses and realistic linkages between exposure pathways and receptors to determine whether concentrations of contaminants would preclude the intended final land use, or whether the site can be made suitable for the proposed land use through remediation or management.

3. BACKGROUND

The M7-M12 Integration project includes the M12 East package and the widening of the M7 Motorway (Mod 6 Widening).

The main features of the M7 Widening involve:

- Widening the M7 Motorway into the existing median for a length of approximately 26 km along the Westlink M7, from about 140 metres (m) south of the Kurrajong Road overhead bridge at Prestons (southern end) extending to Richmond Road interchange in Oakhurst/Glendenning (northern end), excluding the section between M4 Motorway/ Westlink M7 (Light Horse) Interchange; and
- Widening of 43 existing northbound and southbound bridges on the Westlink M7 at 23 locations within the centre median and on the outside of the bridges on the approach to the M4 Motorway from Old Wallgrove Road.

The M7 Widening project has been the subject of a Contamination Impact Assessment (CIA) report developed by AECOM (2022) to address the relevant Secretary's Environmental Assessment Requirements (SEARs) issued for the proposed modification.

The CIA report has been prepared to assess the potential contamination impacts of construction and operation of the proposed modification on human and ecological receptors; identify potential acid sulfate soil and soil salinity impacts; assess the impacts on soil and land resources (particularly soil erosion and sediment transport); and to identify appropriate mitigation and management measures to address the impacts identified.

Potential existing areas of contamination were identified within the study area which could potentially have an adverse impact on human or ecological health if disturbed during construction or remains during the operation of the proposed roadway. The sources of contamination include the demolition of former buildings that comprised hazardous building materials (lead-based paint and asbestos-containing materials [ACM]), illegal waste dumping, fill material of unknown origin and quality, and neighbouring commercial/industrial land uses. No potentially contaminating land uses were identified within 100 meters of the study area. The former Hoxton Park Airport, contamination located 200 m east of the subject area, is a potential historical site for Per- and Polyfluoroalkyl Substances (PFAS).

The assessment performed by AECOM and reviewed in detail by EDP concluded that the area that encompasses the site poses a moderate likelihood for risk of contamination due to the historical use of the land and its surrounding areas.

EDP was engaged by John Holland to conduct four individual DSIs within the median strip of the M7 Widening, excluding under bridges, the existing bridge structures and embankments. The Site is situated within construction Zone C; the EDP report produced and submitted that encompassed this zone is entitled 'Detailed Site Investigation M7 Widening – Zone C – Sydney NSW', report S-05667.DSI.M7_Zone C_Final, dated 25 January 2023 (EDP 2023).

Greater details on the findings of the AECOM assessment and additional investigation reports pertaining to the site are provided in **Section 6**.

4. COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

4.1 Technical Framework

The assessment was undertaken in accordance with the following:

- Australian Standard (AS 4482.1-2005) Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds I;
- Australian Standard (AS 4482.2-1999) Guide to the sampling and investigation of potentially contaminated soils – Volatile substances I;
- Australian Standard (AS 4964-2004) Method for the qualitative identification of asbestos in bulk samples;
- Cooperative Research Centre for Contamination Assessment and Remediation of the Environment: Technical Report No. 10, Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater Part 1: Technical development document, 2011 (CRC Care, 2011);
- Cooperative Research Centre for Contamination Assessment and Remediation of the Environment: Technical Report No. 39 Risk-based management and remediation guidance for benzo(a)pyrene 2017 (CRC Care, 2017);
- Department of Land and Water Conservation: Site Investigations for Urban Salinity (DLWC, 2002);
- Environmental Procedure Management of Wastes on Transport for New South Wales Services Land (Roads & Maritime, 2014);
- Managing asbestos in or on soil (SafeWork NSW, 2014);
- National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual (Water Quality Australia, 2018);
- National Acid Sulfate Soils Guidance: National acid sulfate soils sampling and identification methods manual (Water Quality Australia, 2018);
- NSW Department of Infrastructure, Planning and Natural Resources (DIPNR) 'Site Investigations for Urban Salinity 2002' (DIPNR, 2002);
- NSW Department of Infrastructure, Planning and Natural Resources (DIPNR): Western Sydney Regional Organisation of Councils Ltd (WSROC) 'Western Sydney Salinity Code of Practice, 2003' (WSROC, 2003);
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (as revised 2013) (NEPM, 2013);
- Other guidelines made or approved under section 105 of the Contaminated Land Management Act 1997;
- PFAS - National Environmental Management Plan Version 2.0 (HEPA, January 2020);
- Roads and Maritime Guideline for the Management of Contamination (September 2013);
- Roads & Maritime Services Environmental Incident Classification and Reporting Procedure (2017);
- Soil and Landscape Issues in Environmental Impact Assessment (Gray, 2000);
- State Environmental Planning Policy (resilience and hazards) 2021;
- TfNSW draft Asbestos in Soils Management Procedure (2020);
- TfNSW Environmental Incident Procedure (EMF-13-PC-0001) (2021);
- The NSW EPA (2017) Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd Edition) (updated from NSW EPA 2006 version);
- The NSW EPA (2020) Consultants Reporting on Contaminated Land;
- The NSW EPA (2017) Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997;
- The NSW EPA (2022) Sampling Design Part 1 – application;
- The NSW Government: Managing asbestos in or on soil 2014;
- Urban and regional salinity guidance given in the Local Government Salinity Initiative booklets, which includes Site Investigations for Urban Salinity (DLWC, 2002);
- How to manage and control asbestos in the workplace – Code of Practice (Safe Work Australia, July 2020);
- How to safely remove asbestos – Code of Practice (Safe Work Australia, July 2020);
- National Environment Protection (Assessment of Site Contamination) Measure (1999) Amendment 2013 (NEPM 2013); and

¹ As 4482.1-2005 and AS 4482.2-199 are currently under revision. These standards have been referenced for completeness.

- WA Department of Health Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia 2009 (DOH, 2009).

4.2 Ministers Conditions of Approval

This contamination assessment has been prepared to satisfy the NSW M7 CoA (SSI 663-Mod-6) and M7 Revised Environmental Management Measure (REMMs).

NSW M7 CoA D67

“Detailed Site Investigations to confirm moderate and high risk contaminated sites identified in Preliminary Site Investigation in Condition 1A of Schedule 1 must be prepared, or reviewed and approved by a Contaminated Land Consultant certified under either the Environment Institute of Australia or New Zealand’s “Certified Environmental Practitioner” (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia “Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.

The Detailed Site Investigations must be undertaken before ground disturbance in areas identified in the documents under Condition 1A of Schedule 1 as moderate to high-risk contamination”.

NSW M7 CoA D69

“A Detailed Site Investigation Report must be prepared and submitted to the Planning Secretary for information following the completion of Detailed Site Investigations required by Condition D67 and:

(a) be prepared (or reviewed and approved) by a Contaminated Land Consultant certified under either the Environment Institute of Australia or New Zealand’s “Certified Environmental Practitioner” (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia “Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme;

(b) be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the Contaminated Land Management Act 1997 (NSW); and

(c) be reviewed by a NSW EPA-accredited Site Auditor (if a Detailed Site Investigation identifies moderate or high-risk contamination). The Site Auditor must issue interim audit advice stating whether the Detailed Site Investigations appropriately categorises risk, the appropriateness of the Report and any proposed management measures. The Detailed Site Investigation Report and interim audit advice must be submitted to the Planning Secretary for information.

Nothing in this condition prevents the Proponent from preparing individual Site Contamination Reports for separate sites”.

M7 REMMs C2

“A Sampling, Analysis and Quality Plan will be prepared ahead of detailed site investigations, focusing on potential source areas of potential contamination where the likelihood risk of contamination is moderate to high, and additional areas to give further understanding of potential contamination impacts.

The results from the site investigations will be assessed against criteria contained within the National Environment Protection (Assessment of Site Contamination) Measure (2013) and other applicable NSW statutory guidelines to assess whether remediation is required or other management measures during construction”.

M7 REMMs C3

“Remediation will be undertaken where assessed as required based on the outcome of DSIs. Works will be performed in accordance with the hierarchy of preferred strategies in the Guidelines for the NSW Site A Remediation will be undertaken where assessed as required based on the outcome of DSIs. Works will be performed in accordance with the hierarchy of preferred strategies in the Guidelines for the NSW Site Auditor Scheme (NSW EPA, 2017c) and CRC CARE Pty Ltd (CRC, CARE, 2020) National Remediation Framework. Where practical, remediation works will be integrated with excavation and development works performed during construction and address requirements of SEPP 55 Auditor Scheme (NSW EPA, 2017c) and CRC CARE Pty Ltd (CRC,

CARE, 2020) National Remediation Framework. Where practical, remediation works will be integrated with excavation and development works performed during construction and address requirements of SEPP 55”.

M7 REMMs C4

“Contamination within the Westlink M7 lease area will be managed in accordance with the existing or updated Operational Environmental Management Plan (OEMP).

Pre-construction contamination condition surveys will be undertaken on all sites intended to be used as construction ancillary facilities. Post-construction contamination condition surveys will be undertaken on all ancillary facilities and any contamination caused by the use of the site as a construction ancillary facility remediated to a standard suitable for the identified land use. Remediation will be undertaken by the construction contractor prior to operation of the modification”.

M7 REMMs C5

“Prior to ground disturbance in areas of potential inland acid sulfate soil occurrence, testing will be carried out to determine the actual presence of acid sulfate soils. This measure is especially applicable to areas on waterbodies where disturbance of sediments and surrounding soil is to occur. If acid sulfate soils are encountered, they will be managed in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998) and Guidelines for the Management of Acid Sulfate Materials: Acid Sulfate Soils, Acid Sulfate Rock and Monosulfidic Black Ooze (NSW Roads & Traffic Authority, 2005b)”.

M7 REMMs C6

“Prior to ground disturbance in high probability salinity areas, testing will be carried out to determine the presence of saline soils. If salinity is encountered, excavated soils will not be reused and will be managed in accordance with Book 4, Dryland Salinity: Productive Use of Saline Land and Water (NSW DECC, 2008c). Erosion controls will be implemented in accordance with the Managing Urban Stormwater: Soils and Construction Volume 1 (DPIE, 2004)”.

4.3 TfNSW Requirements

This DSI has been developed in accordance with Transport for NSW (TfNSW) Specification D&C G36 Environmental Protection.

Clause 4.2

“Engage a consultant certified under either the Environment Institute of Australia and New Zealand’s certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) to carry out a Stage 2 Site Contamination Assessment in accordance with the Planning Approval, the findings and recommendations of the Stage 1 Site Contamination Assessment carried out as part of the Environmental Assessment Documentation and detailed design contamination investigation reports and in accordance with the Contaminated Land Management Act Guidelines.”

The Stage 2 Site Contamination Assessment must be completed seven days prior to works that would result in the disturbance of potentially contaminated or contaminated soils, materials, groundwater or sediments and submitted to TfNSW and the Principal.

The Stage 2 Site Contamination Assessment Report must provide details on:

- (a) primary sources of contamination, for example potentially contaminating activities, infrastructure (such as underground storage tanks, fuel line, sumps or sewer lines) or site practices;
- (b) contaminant dispersal in air, hazardous ground gases, surface water, groundwater, soil vapour, separate phase contaminants, sediments, infrastructure (e.g. concrete), biota, soil and dust;
- (c) contaminant characterisation and behaviour (volatility, leachability, speciation, degradation products and physical and chemical conditions on-site which may affect how contaminants behave);

- (d) potential effects of contaminants on human health, including the health of occupants of built structures (for example arising from risks to service lines from hydrocarbons in groundwater, or risks to concrete from acid sulphate soils) and the environment;
- (e) potential and actual contaminant migration routes including potential preferential pathways;
- (f) the adequacy and completeness of all information available for use in the assessment of risk and for making decisions on management requirements, including an assessment of uncertainty;
- (g) the review and update of the conceptual site model from the preliminary and detailed site investigations;
- (h) nature and extent of any existing remediation (such as impervious surface cappings); and/or
- (i) whether the land is suitable (for the intended final land use) or can be made suitable through remediation”.

Annexure B (B1) - Contaminated Materials – If Encountered

Information documents provided at tender do not suggest the presence of contaminants on the site. Where encountered, the provisions under this clause would be enacted.

Notwithstanding anything to the contrary, you are to determine the nature and extent of all contaminated materials (including asbestos) and their associated treatments.

Part of the Site may contain contaminated materials (refer to Clause 4.2). Your Occupational Hygienist or suitably qualified Geotechnical Design Representative (refer to TfNSW D&C R44 Clause 1.8) must undertake inspections and any required tests of all suspected contaminated materials and assess the nature and extent of the contamination and provide suitable directions for the management/ treatment of all suspected contaminated materials”.

Annexure B (B2) - Topsoil

Your Geotechnical Design Representative (refer to TfNSW D&C R44 Clause 1.8) and Occupational Hygienist must undertake any required investigations/ inspections of all areas where you propose to remove topsoil. Invite the Principal to witness all such investigations/ inspections”.

5. SCOPE OF WORKS

To fulfil the objectives described in **Section 2**, the following was proposed as part of the DSI:

- Review of the existing and historical environmental reports for the M7 and subject site area;
- Review of site history and historical aerial photographs of the site area;
- Review of environmental data source report (Enviro-Screen Reports - Land Insight and Resources (LIR), ref- LI-3925) and available online environmental data;
- Excavation of eleven boreholes and test pits along the investigation area up to proposed target depth of excavation works or into natural material as identified by the field consultant;
- Collection of soil samples at depths as deemed appropriate by the field consultant;
- Submission of all samples to a NATA-accredited laboratory in chilled conditions under standard chain of custody (CoC) documentation for the analysis required;
- Completion of a Tier 1 Qualitative review of the soil analytical results against the adopted human health and ecological criteria for the site, in accordance with NEPM 2013;
- Development of an updated Conceptual Site Model (CSM) for the site area to address and rectify data gaps that require additional environmental information; and
- Preparation of this DSI report presenting the findings of the investigation in accordance with relevant guidelines for contaminated lands assessment and in accordance with M7 NSW CoA D67 detailing practices, contaminant dispersal, contaminant characterisation and behaviour, potential effects of contaminants on human health, including the health of occupants of built structures, potential and actual contaminant migration routes, including potential preferential pathways, the adequacy and completeness of all information available for use in the assessment of risk and for making decisions on management requirements, the review and update of the conceptual site model from the preliminary and detailed site investigations; nature and extent of any existing remediation and/or whether the land is suitable (for the intended final land use) or can be made suitable through remediation.

6. PREVIOUS INVESTIGATIONS

The following previous environmental investigation reports provided to EDP were reviewed in detail as part of this assessment.

6.1 TfNSW Westlink M7 Widening Modification Report (AECOM, 2022) – Chapter 7.1.1a and 7.1.1b (App L1, L2 and L3) Contamination Impact Assessment

The CIA was undertaken to identify the potential for contamination to be present within areas to be impacted by the construction and operation of the M7 widening project. The study area for the assessment comprised a 100 metres (m) buffer of the construction footprint and the ancillary compounds located outside the Westlink M7 lease boundary.

The study was prepared to assess the potential contamination impacts of construction and operation of the proposed modification on the identified human and ecological receptors, as well as to identify potential acid sulfate soil and soil salinity impacts; assess the impacts on soil and land resources (particularly soil erosion and sediment transport), and to identify appropriate mitigation and management measures to address the impacts identified.

Potential existing areas of contamination were identified within the study area, including the area that comprehends the site, which could potentially have an adverse impact on human or ecological health if disturbed during construction or remains during the operation of the proposed roadway. The sources of contamination include the demolition of former buildings that comprised hazardous building materials (lead-based paint and asbestos-containing materials [ACM]), illegal waste dumping, fill material of unknown origin and quality, and neighbouring commercial/industrial land uses. No potentially contaminating land uses were identified within 100 m of study area. The former Hoxton Park Airport, located 200 m east of the subject area, has potentially historically been impacted by PFAS contaminating landuses.

The study provided a 'likelihood risk of contamination assessment' for each potentially contaminating activity identified within or proximal to the study boundary as moderate risk.

6.2 EDP Detailed Site Investigation M7 Widening - Zone C – Sydney NSW (EDP 2024)

EDP was engaged by John Holland to conduct a DSI of the M7 Widening project, the DSI has been divided into four separate construction areas, labelled Zones A to D. The Site is situated within construction zone C, the EDP report which captures the investigation work undertaken within this zone is entitled 'Detailed Site Investigation M7 Widening – Zone C – Sydney NSW', report S-05667.DSI.M7_Zone C_Final, dated 25 January 2024 (EDP 2024).

The primary objective of the DSI was to characterise the extent of contamination within the site to determine whether concentrations of contaminants would preclude the assessed soils for use/re-use within the M7-M12 Integration project and determine as to whether the land is suitable (for the intended final land use) or could be made suitable through remediation.

This intrusive assessment involved the excavation of 67 boreholes across Zone C and soil sampling across the investigation area to a maximum depth of 1.5 mbgl. A Tier 1 Qualitative review of the dataset was undertaken against the criteria for the protection of human health and the environment specified within the site specific SAQP, referencing and in accordance with the NEPM 2013, the HEPA PFAS National Environmental Management Plan V2 2020 (NEMP 2020), and other applicable guidelines.

Chemical analytical results presented no exceedances of the adopted health investigation levels (HILs) nor the health screening levels (HSLs) for continued commercial and industrial land use.

Based on the findings of the report, areas previously identified as moderate and/or high risk in the Contamination Impact Assessment (CIA) (AECOM 2022) conducted for the site under Condition 1A of Schedule 1, soils within the investigation extent of the Zone C median strip were considered low risk and acceptable for re-use during the construction of the M7-M12 Integration project and suitable for the final intended land use.

7. SITE INFORMATION

7.1 Site Identification Summary

Site identification details are summarised in **Table I**, and the location of the site is shown in **Figure 1** and **Figure 2**, provided in **Appendix A**.

Table I - Site Identification

Site Identification	
Site Address:	Situated in the west batter and median strip of the M7 Motorway parallel to 99 Wallgrove Road, Eastern Creek NSW 2766
Local Government Area:	Blacktown City Council
Lot and DP number:	Lot 4 DP 1041745
Current Zoning:	Infrastructure (SP2)
Current Site Description:	The site comprises of the west embankment and median strip of the M7 Motorway, situated between the motorway and commercial developments and shared path/cycleway, extending approximately 300 m. The west embankment consisted of unlevel terrain, and was vegetated at the base of the embankment, towards the eastern and south eastern portion of the embankment. The top of the embankment was exposed soil and appears to have underwent some form of excavation for site levelling purposes. The median strip consisted mainly of grassed area with a drainage depression that transects from the north to south along the centre of the median strip. The central portion of the median strip underwent filling works to allow access of vehicles, drill rig and excavator for road work purposes.
Former Land Use:	The proposed construction footprint was formerly used as military facilities (likely sleeping quarters) as part of Wallgrove Army Base since the 1940s until 1978. The site appears to be a vacant grassed area since 1978 since the demolition of the Army Base, until the construction of the M7 Motorway, which began in 2004 and was completed in 2013. The most notable land use changes as part of these works included clearing and urbanisation, identified through an increased density of commercial/industrial developments to the west of the site following the development of the roadway.
Current and Surrounding Land Use:	An overview of the surrounding land use is as follows: The site sits within the suburb of Elizabeth Hills, NSW, and is bound to the: ▪ North by M7 and M4 Motorway; ▪ East by M7 Motorway; ▪ West by a shared cycling/footpath, followed by Wallgrove Road and commercial developments; and ▪ South by M7 Motorway, followed by commercial developments.

7.2 Historical Aerial Photograph Review

Historical aerial images surrounding the site are provided in **Appendix B** and are described in **Table 2**.

Table 2: Historical Land Use

Year	Description of Site	Surrounding Development
1947	The site was likely used as sleeping quarters as part of military facilities (potentially former Wallgrove Army Base).	Site surrounds generally consist of Wallgrove Army Base in all directions, sporadic and sparse bushland to the south and south east, Reedy Creek to the east, and Wallgrove Road observed to the west of the site.
1965	No significant changes to the site.	Increase in military facilities observed to the east and south west of the site. Unsealed tracks observed to the south west of the site.
1975	No significant changes to the site.	Further increase in military facilities to the west, south west and northeast of the site. Earthworks, which appears to be for road construction, observed to the far east of the site.
1978	Chicken sheds were demolished.	Military facilities surrounding the site, particularly to the north west, were demolished.
1984	No significant changes to the site.	Most former military facilities (as part of Wallgrove Army Base) were demolished surrounding the site.
1986	No significant changes to the site.	Commercial/industrial developments and a carpark observed to the north west and west of the site, respectively. Present day Wonderland Drive constructed to the south west of the site.
1991	No significant changes to the site.	Increase in commercial/industrial developments to the west of the site. Dam constructed to the west of the site.
1998	No significant changes to the site.	No significant changes to the site.
2004	Significant disturbance was present, including earthworks, clearing and/or filling associated with the development of the Westlink M7 Motorway.	Significant disturbance was present, including earthworks, clearing and/or filling associated with the development of the Westlink M7 Motorway. Further earthworks, that does not appear to be part of the M7 Motorway construction, observed to the west of the site.
2005	The majority of the M7 construction has been completed, including the construction of the shared path-cycleway over the site.	Majority of the M7 construction has been completed. Continued development is observed to the north and east of the site. Former commercial/industrial developments were demolished to the west and north west of the site, and earthworks observed at these locations. Present day commercial/industrial developments constructed to the west and south west of the site.
2013	The Westlink M7 is completed. No significant changes to the site.	Increase in commercial/industrial developments constructed to west and south west of the site.

		Former dam was filled to the north west of the site.
2024	The site, in its current conditions, can be observed.	No significant changes to the site surrounds.

Associated potential contamination issues identified during the historical aerial photography review include the following:

- Former land use as a military facility;
- Importation of fill material from unknown and unverified sources; and
- Degradation and demolition of structures containing hazardous building materials.

7.3 Environmental Settings

Site information was gathered from previous reports, available online environmental data and the LIR (LIR, 2023) report in **Appendix C**. Environmental setting details are summarised in **Table 3**.

Table 3 - Environmental Setting

Environmental Settings	Description
Topography:	A review of the NSW Government National Map online database (http://www.nationalmap.gov.au/) indicated that the site was located at an elevation of approximately 54-56 m Australian Height Datum (AHD). At the time of the assessment, the site consisted of the west embankment with sharp decline leading to the east, and a median strip that had a depression along the centre.
Surface water and Groundwater:	Based on project geological conditions, project groundwater investigations and registered groundwater works, two main groundwater system types exist in the study area as follows: • Unconfined to semi confined alluvial groundwater systems associated with Reedy Creek; and • Semi confined groundwater systems within the bedrock (Wianamatta Group Shale and Hawkesbury Sandstone). The bedrock groundwater systems are characterised as semi-confined dual porosity systems (granular flow and fracture flow). The upper major hydrostratigraphic unit comprises the Wianamatta Shale which overlies a lower major hydrostratigraphic unit consisting of the Hawkesbury Sandstone. The Wianamatta Group shales are characterised by saline groundwater which is not considered to be a viable groundwater source. Two aquifer systems, shallow and deep, form part of the Wianamatta Shales. The upper 'regolith' aquifer system. A review of LIR did not indicate any registered groundwater well within 500 m of the site. The closest surface water body is Reedy Creek (approximately 430 metres south east of the site), a tributary to Eastern Creek. Groundwater flow directions are anticipated to be similar to a subdued version of the topographic surface, towards the east. EDP notes that groundwater was not encountered at boreholes advanced across the site to a maximum depth of 4.5 mgb.
Regional Geology:	Most of the construction footprint within Bringelly Shale bedrock (Triassic aged and part of the Wianamatta Shale Group) is described as shale and carbonaceous claystone. Other areas of the project include quaternary-aged and recent alluvial

Environmental Settings	Description
	deposits. The alluvial deposits are reported as being relatively thin, occurring between about 2.5 metres below ground level (mbgl) to 7.0 mbgl.
Sensitive Receptors:	The identified sensitive receptor within a buffer of 200 m of the study area is: • Reedy Creek; • Water courses, lakes, dams and waterholes; and • Shared pathway-cycleway
Acid Sulfate Soils:	The Atlas of Australian Acid Sulfate Soils (ASRIS) database presented in LIR (2023) indicated an extremely low probability of acid sulfate soils occurring beneath the site - high probability of occurrence within upper 1 m in wet and riparian areas
Salinity:	Based upon available mapping there is a moderate salinity hazard associated with hydrogeological landscapes and Australian drylands ecosystems are present onsite. Hawkesbury Sandstone groundwater salinity decreases to 1,000 mg/L to 3,000 mg/L, where greater than 1,200 mg/L is considered unpalatable to humans, and greater than 2,000 mg/L is considered unpalatable for most livestock (SAEPA, 2019). Salinity potential is defined as moderate, defined as where Wianamatta Group Shales or tertiary alluvial terraces are present.

7.4 Public Records and Potentially Contaminated Areas

Public Records and Potentially Contaminated Areas are summarised in **Table 4**

Table 4 - Public Records and Potentially Contaminated Areas

Resource	Description
Per- and Polyfluoroalkyl Substances (PFAS):	A review of the NSW EPA Per-and Polyfluoroalkyl Substances (PFAS) Investigation Program did not identify any site located within a 2,000 m radius as an area of study.
NSW EPA Contaminated Land Public Records Register:	The NSW EPA Contaminated Land Record of Notices indicated no current or former notices under Section 58 of the CLM Act 1997 in a 1,000 m buffer of the study area.
NSW EPA List of Notified Sites:	The NSW EPA record of licenced sites reported identified with no current or historical licenced operations under the POEO Act within or adjoining the study area, apart for the Eastern Creek Waste Management Centre, located approximately 1,200 m south west of the site.

8. PRELIMINARY CONCEPTUAL SITE MODEL

Table 5 – Preliminary Conceptual Site Model

Location	Activity	Contaminants of Concern	Potential Exposure Pathways	Potential Human and Environmental Receptors	Assessment of Risk
Within the construction footprint, various locations and adjoining study area	- Demolition or removal of former building structures - Areas of disturbed terrain - Potential illegal dumping - Unknown fill in embankment and median strip - Historical land use: Former military facility	Heavy metals, TRH, PAH, BTEX, PCBs, OCP/OPP, PFAS ² and Asbestos (non-friable and friable)	- Downward migration and leaching of contaminants via infiltration of rainwater through the soil - Lateral migration via groundwater to surface water and off-site - Overland flow of surface water to off-site soils and surface water - Absorption or adsorption to fauna and vegetation through contact and diffusion in soil - Dispersion of airborne particulates due to wind - Inhalation, ingestion, dermal contact	<u>Human receptors:</u> - Current site maintenance workers and visitors - Future construction and maintenance workers, site users and visitors - Current and future site users on neighbouring properties <u>Environmental Receptors:</u> - Transient fauna or macroinvertebrates - Vegetation - Groundwater - Surface waters such as Creeks and tributaries within the Reedy Creek Catchment.	<u>Health:</u> Moderate – SPR linkages potentially complete <u>Environment:</u> Moderate – SPR linkage potentially complete for surface water and groundwater. Low risk to ecology and sensitive ecology not envisaged in the motorway embankment.
Excavation and Stockpiling of Actual and/or Potential Acid Sulfate Soils or soils with high salinity hazard	Stockpiling during M7 Westlink construction	- Actual Acid Sulfate and Potential Acid Sulfate (AASS/PASS) - Saline and sodic soils	- Migration of acidic or saline leachate/runoff to surface water or infiltration to groundwater - Rill and gully erosion, salinisation and scarring of the landscape	<u>Environmental Receptors:</u> - Surface-dependant floral and faunal ecosystems, including transient and macroinvertebrate species - Groundwater - Surface waters such as Creeks and tributaries	<u>Health:</u> Low – Unlikely impact of AASS/PASS or saline soils on human health <u>Environment:</u> Moderate – SPR linkages potentially complete for surface water, groundwater and ecology

² List of Acronyms: Total Recoverable Hydrocarbons (TRH), Polycyclic Aromatic Hydrocarbons (PAH), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), Polychlorinated Biphenyls (PCBs), Organochlorine Pesticides / Organophosphorus Pesticides (OCP/OPP), Per- and Poly-fluoroalkyl Substances (PFAS), Actual Acid Sulfate Soils (AASS), Potential Acid Sulfate Soils (PASS)

Location	Activity	Contaminants of Concern	Potential Exposure Pathways	Potential Human and Environmental Receptors	Assessment of Risk
				within the Reedy Creek Catchment.	
Installation of piles in AASS/PASS or soils with high salinity hazard	Construction of piles and working platforms (temporary and permanent structures)	• AASS/PASS • Saline and sodic soils	• Infiltration of acidic or saline leachate into groundwater • Wicking of saline water into bridge structure • Acid corrosion of bridge structure	<u>Human Receptors:</u> • Site maintenance workers or visitors coming into contact with impacted bridge structures • Weakening of bridge structures affecting bridge users <u>Environmental Receptors:</u> • Groundwater	<u>Health:</u> Low – The area will not be readily accessible on foot by the general public, with site maintenance workers to follow site WHS plans and documentation. <u>Environment:</u> Low – risk to be managed in design of piles and installation method.

9. DATA QUALITY OBJECTIVES

Systematic planning and verification are critical to successful implementation of an environmental assessment to ensure that the data is reliable and representative. A process for establishing data quality objectives (DQOs) for an investigation has been defined by the United States Environmental Protection Agency (US EPA). That process has been adopted by Australian Standard AS4482.1-2005 and referenced in NEPM 2013. DQOs ensure that:

The study objectives are set;

Appropriate types of data are collected (based on potential sources of contamination and CoPC); and

The tolerance levels are set for potential decision-making errors.

The DQO process is a seven-step iterative planning approach used to plan for environmental data collection activities. It provides a systematic approach for defining the criteria that a data collection design should satisfy, including when, where and how to collect samples or measurements, determination of tolerable decision error rates and the number of samples or measurements that should be collected. The seven-step process for this investigation is discussed and summarised in **Table 6**.

Table 6 - Data Quality Objectives

Process	DQO
Step 1: State the Problem	John Holland is undertaking works on the subject site as part of the wider M7-M12 widening project. There is currently limited site-specific information relating to the contamination status within the subject site and therefore the contamination risk to the proposed development on the site (both during the development and during the operational phase) is not suitably defined.
Step 2: Identify the Decisions	The decisions to be made based on the results of the investigation were as follows: • Are CoPC present within the soil, and if so, do they present an unacceptable risk to human health and the environment based on the proposed commercial/industrial land use? • If contamination is present, is further investigation required, or does the site require remediation and/or management? • Is the available dataset of sufficient quality to support the conclusions and recommendations presented in this report?
Step 3: Identify Inputs in the Decision	The inputs required to make the above decisions were as follows: • Desktop information (including mapping, databases and historical information sources); • Background information from previous investigations on and adjacent to the site; • Derivation of data quality objectives based upon project objectives; • Selection of appropriate Tier 1 soil assessment criteria; • Visual observations; and • Field observations and laboratory analytical results.
Step 4: Define Boundaries of the Study	The geographical limits appropriate for the data collection and decision making in this investigation comprised of soils within the proposed excavation footprint of the M4 ramp to a maximum depth of 4.5 mbgl or underlying natural material with an excavator and drill rig as shown in Figure 3 of Appendix A . The temporal boundaries of the investigation works are the date of fieldwork – 28 October 2024, 1 and 20 November 2024.
Step 5: Develop a Decision Rule	The adopted site assessment criteria for the CoPC within the investigation area assessed are outlined in Section 12 of the report and presented in Table A provided in Appendix F . Based on the objectives of the DSI and with reference to the potential future use of the site as commercial/industrial, the criteria for commercial/industrial land use were deemed appropriate for the assessment. Human-Health Based Criteria • Where the data sets are not sufficiently populated to allow calculation of the 95% UCLmean, or do not follow a discernible distribution, then the individual results must be less than the adopted criteria. If all the individual results are below the adopted criteria, then no additional assessment and/or management is required. Where individual results exceed that adopted criteria, then further assessment and/or management is required.

Process	DQO
	• In accordance with the NEPM 2013, where 95% UCLmean of the average concentration for each soil analyte can be calculated, then the 95% UCLmean must be below the adopted criteria; no single analyte concentration exceeds 250% of the adopted criteria; the standard deviation of the results must be less than 50% of the adopted criteria; and the normal distribution will only be used where the coefficient of variance is not greater than 1.2. • Allowances to these decision rules apply where alternative 95% UCL methods that are not based on normal or log-normal distributions are adopted. Where 95% UCLmean results exceed the aforementioned criteria, then further assessment and/or management is required. • Asbestos contamination will be assessed based on exceedance of individual results, as statistical assessment is not applicable. <u>Ecological-Based Criteria</u> The same approach as adopted above for the assessment against human health-based criteria will be applied to the assessment against ecological criteria.
Step 6: Specify Limits on Decision Errors	The acceptable limits on decision errors applied during the assessment on the site and the manner of addressing possible decision errors were developed based on the DQIs of: • Accuracy: a measure of the bias in the analytical results and can often be attributed to field contamination, insufficient preservation or sample preparation, or inappropriate analytical techniques. Accuracy of the analytical data assessed by consideration of laboratory control samples and laboratory spikes; • Comparability: a qualitative parameter expressing the confidence with which one data set can be compared with another. This should be achieved through consistent sampling and, analytical testing and reporting techniques. • Completeness: a measure of the amount of useable data (expressed as %) from a data collection activity. Sufficient data is required to enable an assessment of the Decision Rules. • Representativeness: the confidence (expressed qualitatively) that data are representative of each media present on the site. Data representativeness should be achieved by the collection of samples at an appropriate pattern and density as well as consistent and repeatable sampling techniques and procedures. • Precision: a quantitative measure of the variability (or reproducibility) of data. The RPD must be adopted to assess the precision of data between duplicate sample pairs. An acceptance criterion of $\pm 50\%$ for organic field duplicates should be adopted. However, it should be noted that exceedances of this criteria are common for heterogeneous soil or fill or for low analyte concentrations. <u>Acceptance Limits for Decision Errors</u> The acceptable limits for the assessment works will be follows: • Individual or 95% UCLmean concentrations below the adopted criteria. • 95% of the data satisfy the DQIs determined for completeness, representativeness, precision and accuracy of both field and laboratory data. Therefore, the limit on the decision error will be 5% that a conclusive statement may be incorrect. • A comprehensive QA/QC program undertaken including representative sampling and sampling at an appropriate density for the purpose of the investigation.
Step 7: Optimise the Design	Targeted sampling methodology was adopted in areas planned to be disturbed during construction. A suite of general CoPC was adopted for the assessment to provide characterisation of the status of soil/ vapour contamination based on the assessment of the potential source of contamination associated with historic uncontrolled filling, poor demolition of structures and degradation of building materials at the site, PFAS contamination from former airport located 200 m from site.

9.1 Data Quality Indicators

The DQIs based on the DQOs for the assessment are presented in **Table 7**.

Table 7 - DQO, Requirements and DQI

DQO	Requirement	DQI
Precision		
Standard operating procedures appropriate and complied with	The sampling methods comply with industry standard and guidelines	Meet requirement
Field duplicates	1 per 10 primary samples for chemical contaminants (excluding asbestos)	RPDs <30% (raised for low concentrations)
Laboratory duplicates	1 per batch per analyte	RPDs < 50 %
Accuracy		
Laboratory matrix spikes	1 per batch per volatile/semi-volatile analyte	Recoveries 70% to 130%
Laboratory surrogate spikes	1 per volatile/semi-volatile analyte sample (as appropriate)	Recoveries 70% to 130%
Laboratory control samples	At least 1 per batch per analyte tested	Result < PQL
Representativeness		
Sampling methodology – preservation	Appropriate for the sample type and analysis	Meet requirement
Samples extracted and analysed within holding times	Specific to each analyte	Meet requirement
Field equipment calibration	All field equipment calibrated, and calibration records provided	Meet requirement
Laboratory method blanks	At least 1 per batch per analyte tested	Result < PQL
Comparability		
Sampling approach	Consistent with each sample	Meet requirement
Analysis methodology	Consistent methodology for each sample	Meet requirement
Handling conditions and sampler	Consistent for each sample	Meet requirement
Field observations and analytical results	Field observations support analytical results	Meet requirement
Consistent laboratory reporting limit	Consistent for each sample	Meet requirement
Completeness		
Sampling staff	Consistent sampling staff used	Meet requirement
Laboratory accreditation	NATA accredited laboratories and methods used	Meet requirement
Accredited methods	NATA accredited methods used appropriate for each analyte	Meet requirement
NEPM 2013 laboratory methods	Laboratory methods consistent with the NEPM 2013	Meet requirement
CoC documentation	Appropriately completed	Meet requirement
Field sampling decontamination	Appropriately completed	Meet requirement

10. METHODOLOGY

10.1 Site Mobilisation and Sampling

The assessment was undertaken on the 28 October 2024, 1 and 20 November 2024 by EDP. The methodology utilised for the assessment was as follows:

- Selection of sampling locations across the investigation area based on:
 - Targeted sampling according to NSW EPA Sampling Design;
 - Visual inspection for indications of contamination during the site inspection, including but not limited to staining, odours, demolition waste and asbestos, limited due to grown vegetation in the area; and
 - Proposed locations marked by a surveyor. Locations cleared under John Holland permit to excavate and intrusive works.
- Excavation of a total of eleven sampling locations across the site (both boreholes and test pits);
- Collection of soil samples for chemical analysis and characterisation was undertaken at each sampling location as follows:
 - At the surface, typically 0-500 mm;
 - From both emplaced fill and natural material;
 - Visual inspection for indications of contamination, including but not limited to staining, odours, demolition waste and asbestos;
 - Soil samples were collected in pre-labelled sampling containers provided by the laboratory, ensuring sufficient samples were collected and were preserved appropriately for the required analysis. Samples are placed in glass jars with Teflon lined lids, zip lock bags and/or HDPE jars depending on the analyses proposed;
 - Field duplicates and triplicate samples were collected and labelled as to not identify their corresponding primary sample;
 - Collection of one discrete sample for asbestos fines and friable asbestos (AF/FA) within the fill material at each location for analysis if a credible friable risk is determined from site observations; and
 - Field duplicates samples were collected and labelled as to not identify their corresponding primary sample. The nomenclature for field duplicate sample pairs were QC01, QC02 and QC03 (field duplicates).
- Logging of soil conditions at each sample location in the field was undertaken in accordance with Australian Standard 4482.1 Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil (2005) (AS4482);
- At completion of test pits/boreholes, reinstatement of sampling locations with site-won materials and nominal compaction;
- All soil samples for chemical analysis were stored in chilled conditions on ice prior to dispatch and during transportation to the nominated laboratory under EDP and industry-standard CoC procedures; and
- Analysis of soil samples for contaminants of potential concern (CoPC) at a National Association of Testing Authorities (NATA) Australia-accredited laboratory.

Photographs taken during the assessment are provided in **Appendix D**. The locations of the borehole and test pits are shown on **Figure 3** provided in **Appendix A**. The soil conditions encountered at the borehole and test pits are provided in the borehole and test pit logs in **Appendix E**.

10.1.1 Asbestos Field Screening

Representative 10 L volume soil samples were collected within the fill profile at each sample location. Due to the use of hand tools and associated limitations with the volume of soils excavated, the depth intervals of some of the samples for asbestos field screening were greater than the chemical soil sample intervals. The samples were collected in a known 10 L volume container, then either sieved through a 7 mm sieve in the field or spread on a contrasting-coloured surface for visual inspection of asbestos, in accordance with Schedule B2 (Section 11.3.1 and Table 7) of the NEPM 2013.

If ACM and/or FA were observed within the field, the material was collected and gravimetrically weighed to calculate the asbestos in soil concentration for individual samples as outlined in Schedule B1, Section 4.10 of the NEPM 2013. If identified, representative ACM and/or FA samples were collected and analysed for confirmatory asbestos identification at an external NATA-accredited laboratory. Where asbestos was identified, a specific bulking factor of 1.8 kg/L soil density was adopted to assess the volume of soil in kilograms that were excavated based on a gravelly sandy clay soil type. Asbestos content was based on a known asbestos percentage of original manufactured products.

The asbestos in soil concentration was calculated using the formula shown below:

$$\% \text{ Soil Asbestos} = \frac{\% \text{ Asbestos Content} \times \text{ACM/FA (kg)}}{\text{Soil Volume (L)} \times \text{Soil Density (kg/L)}}$$

10.1.2 Asbestos in Soil Sampling

A range of representative 50 g soil samples were collected across from the fill soils during the assessment in accordance with NEPM 2013 to provide an indication of the presence of asbestos, including AF within the soil. A total of 11 soil samples were scheduled for asbestos in soil analysis in accordance with NEPM 2013 and AS4964-2004.

11. LABORATORY ANALYSIS

SGS Australia Pty Ltd were engaged as the primary laboratory for laboratory analysis. The laboratories are NATA accredited for the analysis undertaken. Primary samples were submitted for analysis of CoPC as outlined in **Table 8**. A summary of analytical results is tabulated and presented in **Appendix G**, and laboratory certificates are presented in **Appendix F**.

Table 8- Analytical Schedule and Rationale

Medium	No. Analysed	CoPC	Frequency	Rationale
Soils	25	Heavy metals, TRH, BTEXN, PAHs	At least two samples per location	To characterise the contamination status of the soils across the site.
Soils	19	Asbestos	Targeted Areas and fill soils	To provide an indication of the presence of asbestos within the fill soils, including AF.
Soils	11	OCP, OPP, PCB	At least one sample per location	To characterise the contamination status of the soils across targeted areas.
Soils	9	PFAS	Targeted areas	To characterise the contamination status of the fill soils across targeted areas.
Soils	27	pHf-pHfox EC (1:5) / Salinity	Targeted areas	To characterise the nature of the soils across targeted areas.

12. ADOPTED SOIL ASSESSMENT CRITERIA

12.1 Framework

To assess the significance and potential risk of contaminant concentrations in soil, reference was primarily made to NEPM 2013, specifically ‘*Schedule B1 Guideline on Investigation Levels for Soil and Groundwater*’ (Schedule B1) for assessment criteria, where available. Schedule B1 provides a framework for the use of investigation and screening levels based on human health and ecological risks. Reference was also made to the PFAS NEMP 2020 for human health and ecological screening levels regarding PFAS and TfNSW Specification D&C G36 regarding the presence and absence of asbestos-containing material. In the absence of relative criteria in NEPM 2013, reference was made to other nationally or state-endorsed guidelines.

Based on the objectives of the DSI and with reference to the potential for future commercial/industrial use, the site criteria for commercial/industrial land use were deemed appropriate.

12.2 Soil Assessment Criteria

Soil health investigation levels (HILs), soil health screening levels (HSLs) ecological investigation levels (EILs) and ecological screening levels (ESLs) adopted from Schedule B1 of NEPM 2013 to assess the significance of human health and ecological risk associated with chemical contaminants in soil and the potential requirement for remediation and/or management:

- Soil HILs were used to assess human health risk via relevant exposure pathways of exposure for metals and organic substances. HILs are concentrations below which contaminants in soils are not considered to adversely affect human health and are based on differing land use scenarios. HIL-D for commercial/industrial land use will be adopted;
- Soil HSLs for selected petroleum compounds and fractions are considered applicable to assessing human health risks via vapour intrusion and inhalation. HSL-D for commercial/industrial land use will be adopted with fine and coarse-grained soil types and depths of 0 m to 2 m selected based on the site’s soil characteristics and proposed excavation;
- EILs for selected metals and organic substances will be used for assessing risk to terrestrial ecosystems. EILs depend on specific soil physicochemical properties and land use scenarios and generally apply to the top 2.0 m of soil. Generic EILs for aged arsenic, fresh naphthalene and DDT were adopted. EILs were calculated for chromium (III), lead, copper, nickel, and zinc using the NEPM toolbox with inputting the pH and cation exchange capacity results presented in the eSpade website. An average pH of 5.5 and an average CEC of 10 meq/100 were adopted for the calculation of EILs;
- ESLs for selected petroleum hydrocarbons will be used for assessing risk to terrestrial ecosystems. Concentrations of contaminants above which further appropriate investigation and evaluation are generally required. ESLs, like EILs, depend on specific soil physicochemical properties and land use scenarios and generally apply to the top 2.0 m. ESLs for coarse- and fine-grained soils will be adopted for an urban residential and public open space and commercial/industrial land use; and
- Where exceedances of benzo(a)pyrene criteria are identified in comparison to the primary NEPM 2013, CRC Care, risk-based management, and remediation guidance for benzo(a)pyrene (CRC Care 2017) will be adopted as a comparison guideline. CRC Care is a high-reliability guideline that derives its screening levels from a larger database with more species and test results. As such, derived values of benzo(a)pyrene in CRC Care (2017) can be considered high reliability.

The adopted assessment criteria for the CoPCs are presented in **Table 9**.

Table 9 - Adopted Assessment Criteria

CoPC	Adopted Assessment Criteria
NEPM 2013 Human Health Investigation Levels:	
Arsenic	3,000 mg/kg
Cadmium	900 mg/kg
Chromium VI	3,600 mg/kg
Copper	240,000 mg/kg
Lead	1,500 mg/kg
Mercury	730 mg/kg
Nickel	6,000 mg/kg
Zinc	400,000 mg/kg
Total PAHs	4,000 mg/kg
Benzo(a)pyrene TEQ	40 mg/kg
PCBs	7 mg/kg
OCPs	50 to 3,600 mg/kg
Phenol	240,000 mg/kg
Pentachlorophenol	660 mg/kg
Cresols	25,000 mg/kg
NEPM 2013 Soil Health Screening Levels for Vapour Intrusion:	
Benzene – coarse/fine soils	3 mg/kg (SAND) and 4 to 20 mg/kg (CLAY)
Toluene – coarse/fine soils	No limit (SAND and CLAY)
Ethylbenzene – coarse/fine soils	No limit (SAND and CLAY)
Xylenes – coarse/fine soils	230 mg/kg (shallow SAND) and no limit (<1 m SAND and CLAY)
TRH F1 (C6-C10)	260 to 630 mg/kg (SAND) and 310 to 480 mg/kg (CLAY)
TRH F2 (C10-C16)	No limit (SAND and CLAY)
NEPM 2013 Ecological Investigation Levels:	
Arsenic	160 mg/kg
Chromium	670 mg/kg
Copper	210 mg/kg
Lead	1,800 mg/kg
Nickel	290 mg/kg
Zinc	500 mg/kg
Dichlorodiphenyltrichloroethane (DDT)	640 mg/kg
Naphthalene	370 mg/kg
NEPM 2013 Ecological Screening Levels:	
TRH F1 (C6-C10) – coarse/fine soils	215 mg/kg
TRH F2 (C10-C16) – coarse/fine soils	170 mg/kg
TRH F3 (C16-C34) – coarse/fine soils	1,700 / 2,500 mg/kg
TRH F4 (C34-C40) – coarse/fine soils	3,300 / 6,600 mg/kg
Benzene – coarse/fine soils	75 / 95 mg/kg
Toluene – coarse/fine soils	135 / 135 mg/kg
Ethylbenzene – coarse/fine soils	165 / 185 mg/kg
Xylenes – coarse/fine soils	180 / 95 mg/kg
Benzo(a)pyrene – coarse/fine soils	1.4 / 0.7 mg/kg
Benzo(a)pyrene (CRC Care)	172 mg/kg (high reliability)
PFAS NEMP (2020). Human Health Investigation Levels:	
Sum of PFOS and PFHxS	20 mg/kg

CoPC	Adopted Assessment Criteria
PFOA	50 mg/kg
PFAS NEMP (2020). Ecological Guidelines Values:	
Direct exposure PFOS	1 mg/kg
Indirect exposure PFOS	0.01 mg/kg
Direct exposure PFOA	10 mg/kg
TfNSW draft Asbestos in Soils Management Procedure	
Bonded ACM	Not present
Fibrous Asbestos (FA) and Asbestos Fines (AF)	Not detected
All forms of asbestos	Not present

1. VOC/SVOC criteria will be adopted from US EPA HSLs where NEPM guidance is not available

2. Generic EILs for aged arsenic, lead, DDT, and naphthalene were adopted. Ambient background concentrations (ABCs) from Olszwoy et al 1995 and conservative added contamination limits (ACLs) from NEPM 2013 were used to calculate chromium (III), copper, nickel, and zinc for commercial and industrial land use. An average EC and pH for the site was sourced from eSpade website.

12.3 Asbestos in Soil

Asbestos contamination in soil can occur in a range of forms, sizes and degrees of deterioration. For the purpose of the assessment, NEPM 2013 divides asbestos contamination into the following:

- Bonded ACM: non-friable asbestos materials bound in a matrix, in sound condition that cannot pass through a 7 mm sieve, e.g., vinyl tiles, fibre cement fragments;
- Fibrous asbestos (FA): friable asbestos material such as weathered ACM and loose fibrous material (insulation products);
- Asbestos fines (AF): free fibres of asbestos, small fibre bundles, and ACM fragments that can pass through a 7 mm sieve; and
- According to the TfNSW draft Asbestos in Soils Management Procedure (TfNSW, 2020), the procedure for areas that are present or suspected to be contaminated with ACM during the DSI involves visual inspection of the soil profile. It may include (although not necessarily) the collection of soil samples for laboratory analysis. Data from this investigation is used to refine the lateral and vertical extent of areas impacted by ACM, to estimate the volume of ACM-impacted soil, and to develop appropriate construction management and remediation measures.

12.4 Salinity

Laboratory testing of soil salinity (electrical conductivity of a sample with one part soil to five parts waters, EC1:5) is converted into conductivity of a saturated soil extract (ECe) by a multiplication factor to consider the influence of soil texture (Taylor, 1996). The salinity action criteria for each class are located in **Table 10** In accordance with the Department of Land and Water Conservation 2002 – *Site Investigations for Urban Salinity*, a soil is often considered saline if it has an ECe of 4 dS/m. For the purposes of satisfying M7 REMMs C6, this value has been adopted in determining soils which are considered 'saline'.

Table 10 - Salinity Action Criteria

Class	ECe (dS/m)	Comments
Non-saline	< 2	Salinity efforts mostly negligible
Slightly saline	2-4	Yields of very sensitive crops may be affected
Moderately saline	4-8	Yields of many crops may be affected
Highly saline	8-16	Only tolerant crops yield satisfactorily
Extremely saline	>16	Only a few very tolerant crops yield satisfactorily

12.5 Aesthetics

There are no quantifiable guidelines in determining if soils are appropriately aesthetic, however, the NEPM 2013 does indicate that professional judgement concerning the quantity, type and distribution of foreign materials and/or odours in regard to the specific land use should be employed. The following scenarios (but not limited to) would trigger further aesthetic assessment:

- Hydrocarbon sheen on surface water;
- Anthropogenic soil staining; and
- Odorous soils i.e., petroleum hydrocarbon odours or hydrogen sulfidic odours in soil.

To assess the potential risk of contaminant concentrations in soil, reference was primarily made to ASC NEPM for assessment criteria, where available. ASC NEPM Schedule B1 provides a framework for the use of investigation and screening levels based on human health and ecological risks.

Soil health investigation levels (HILs), soil health screening levels (HSLs) ecological investigation levels (EILs) and ecological screening levels (ESLs) adopted from Schedule B1 of ASC NEPM to assess the significance of human health and ecological risk associated with chemical contaminants in soil and the potential requirement for remediation and/or management.

Schedule B1 defines Industrial/Commercial D land uses as including commercial/industrial such as shops, offices, factories, and industrial sites. It is proposed that the site be used as an ancillary facility during the works as part of the M7-M12 Integration project. As such, the Industrial/Commercial D assessment criteria are considered appropriate for determining future site suitability during this assessment.

13. RESULTS

13.1 Field Observations and Data

13.1.1 Site Observations

The following observations were noted based on the visual inspection of the ground surface across the site during the site inspections:

- The area consists of the west embankment and the median strip;
- The west embankment has unlevel terrain, that generally slopes to the east, with flatter topography to the south eastern portion of the site. The top of the embankment consisted generally of bare soil, with some vegetation along the sloped embankment, and grassed area at the bottom of the embankment.;
- A mixed-use pathway was observed directly west of the west embankment;
- The median strip was generally a grassed area with a drainage depression running along the centre. Backfill (from M7-M12 tunnelling works as advised by John Holland representative) was placed at the central and southern portion of the median strip to allow safe access of the drill rig;
- General refuse, including polystyrene, cardboard and plastic, were observed on the ground surface across the west embankment; and
- No visible surface staining, odours or any evidence of contamination were observed within the area.

Photographs taken during the assessment are provided in **Appendix D**.

13.1.2 Subsurface Profile

The soil profile across the site comprised of:

- FILL: Sandy/Clayey SILT, dark brown/brown, with gravels/cobbles;
- FILL: Sandy/Silty CLAY, red brown/white/dark grey brown, with gravels/cobbles; and
- NATURAL: Silty CLAY, low to medium plasticity, dark brown/red/dark orange brown/yellow brown/pale grey.

No ACM, discolouration, staining, hydrocarbon odour was noted in any of the boreholes and test pits advanced within the site.

No groundwater was intercepted in any of the boreholes and test pits advanced within the site.

Photographs taken during the assessment are provided in **Appendix D** and testpit and borehole logs are provided in **Appendix E**.

13.1.3 Salinity

Across the site, eleven targeted sample locations were collected for salinity assessment complying with M7 REMM C6. Sampling was conducted in accordance with WSROC, 2003. For the purpose of this discussion, the results were divided by 1,000 to convert to dS/m and multiplied by a multiplication factor to consider the influence of soil texture (Taylor, 1996). According to Construction Environmental Management Plan - Appendix B4 - Construction Soil and Water Management Sub-plan - Appendix L: Acid Sulfate Soils and Salinity Management Plan for the M7-M12 Integration project, a conversion factor of seven is adopted. A conversion factor of seven is applied for medium clays, which is reflective of the soil types found in Western Sydney and across the M7-M12 project alignment. The analytical results are presented in dS/m in **Table 11**.

Table 11 - Salinity Summary Table

Sample ID	Depth (mbgl)	Multiplication Factor	EC (µS/cm)	ECe (dS/m)	Salinity
EDP-DSI.024.BH01-0.5	0.5	7	130	0.910	Non-saline
EDP-DSI.024.BH01-3.0	3.0	7	360	2.520	Slightly saline
EDP-DSI.024.BH01-4.5	4.5	7	400	2.800	Slightly saline
EDP-DSI.024.BH02-0.5	0.5	7	140	0.980	Non-saline
EDP-DSI.024.BH02-0.8	0.8	7	140	0.980	Non-saline
EDP-DSI.024.BH02-3.0	3.0	7	240	1.680	Non-saline
EDP-DSI.024.BH03-1.0	1.0	7	290	2.030	Slightly saline
EDP-DSI.024.BH03-3.0	3.0	7	410	2.870	Slightly saline
EDP-DSI.024.BH04-0.5	0.5	7	130	0.910	Non-saline
EDP-DSI.024.BH04-1.5	1.5	7	460	3.220	Slightly saline
EDP-DSI.024.BH04-3.0	3.0	7	380	2.660	Slightly saline
EDP-DSI.024.BH07-0.4	0.4	7	360	2.520	Slightly saline
EDP-DSI.024.BH07-3.0	3.0	7	460	3.220	Slightly saline
EDP-DSI.024.TP05-1.0	1.0	7	310	2.170	Slightly saline
EDP-DSI.024.TP05-0.1	0.1	7	260	1.820	Non-saline
EDP-DSI.024.TP06-0.2	0.2	7	150	1.050	Non-saline
EDP-DSI.024.TP06-1.0	1.0	7	82	0.574	Non-saline
EDP-DSI.024.TP06-2.0	2.0	7	350	2.450	Slightly saline
EDP-DSI.024.TP08-0.1	0.1	7	180	1.260	Non-saline
EDP-DSI.024.TP08-0.5	0.5	7	440	3.080	Slightly saline
EDP-DSI.024.TP08-1.0	1.0	7	550	3.850	Slightly saline
EDP-DSI.024.BH09-0.5	0.5	7	130	0.910	Non-saline
EDP-DSI.024.BH09-2.5	2.5	7	290	2.030	Slightly saline
EDP-DSI.024.BH10-1.0	1.0	7	190	1.330	Non-saline
EDP-DSI.024.BH10-3.0	3.0	7	350	2.450	Slightly saline
EDP-DSI.024.BH11-2.5	2.5	7	230	1.610	Non-saline
EDP-DSI.024.BH11-4.0	4.0	7	240	1.680	Non-saline

Calculated E_{Ce} resulted in concentrations varying from 0.574 dS/m to 3.850 dS/m with soil samples collected. Soil at the site would be considered 'non-saline' or 'slightly saline' on all tested soils.

13.2 Chemical Analysis

13.2.1 Soil Chemical Analytical Results

A review of the analytical results for the chemical contaminants analysed indicated that the analytical concentrations of CoPC were predominantly less than the laboratory practical quantitative limits (PQLs), with the results being less than the adopted investigation and screening levels presented in **Table 9**.

Benzo(a)pyrene exceeded the ESL for soil sample BH04_0.5 against the adopted NEPM (2013) commercial/industrial guidelines, however as outlined in **Section 12.2**, were below the more reliable CRC Care (2017) guidelines for benzo(a)pyrene. Therefore, this exceedance is not considered to pose a low risk to ecological receptors.

Laboratory analysis for ASS field screening recorded pH_f value between 5.2 and 9.1, and pH_{ox} value between 3.8 and 8.4, which indicates that site soils are not considered indicative of Actual or Potential ASS.

The results are detailed in the attached NATA accredited certificate of analysis provided in **Appendix G** with the results and assessment criteria summarised in **Table A** provided in **Appendix F**. The sampling locations are shown in **Figure 3**, provided in **Appendix A**.

14. QUALITY ASSURANCE AND QUALITY CONTROL

EDP implements project-specific quality assurance/quality control (QA/QC) procedures to improve transparency, consistency, comparability, completeness, and confidence in the data collected. The field and laboratory QA/QC procedures, results, and compliance with data quality indicators (DQIs) define the acceptable level of error required for this assessment.

The field and laboratory QA/QC procedures adopted and the summary of results for the assessments at the site are provided in **Appendix H**, with data quality objectives (DQOs), requirements and DQIs discussed.

Based on the QA/QC procedures, the data was deemed suitable for use in this investigation.

15. CONCEPTUAL SITE MODEL

Table 14: Conceptual Site Model

Location	Activity	Contaminants of Concern	Potential Exposure Pathways	Potential Human and Environmental Receptors	Assessment of Risk
Within the construction footprint, various locations and adjoining study area	- Demolition or removal of former building structures - Areas of disturbed terrain - Potential illegal dumping - Unknown fill in bridge batters - Historical land use: Former military base	Heavy metals, TRH, PAH, BTEX, PCBs, OCP/OPP, PFAS and Asbestos (non-friable and friable)	- Downward migration and leaching of contaminants via infiltration of rainwater through the soil - Lateral migration via groundwater to surface water and off-site - Overland flow of surface water to off-site soils and surface water - Absorption or adsorption to fauna and vegetation through contact and diffusion in soil - Dispersion of airborne particulates due to wind - Inhalation, ingestion, dermal contact	<u>Human receptors:</u> - Current site maintenance workers and visitors - Future construction and maintenance workers, site users and visitors - Current and future site users on neighbouring properties <u>Environmental Receptors:</u> - Transient fauna or macroinvertebrates - Vegetation - Groundwater - Surface waters such as Creeks and tributaries within the Reedy Creek Catchment.	<u>Health:</u> Low – Unlikely CoCPs concentrations in soil were below the human health and ecological criteria. <u>Environment:</u> Low – Unlikely CoCPs concentrations in soil were below the human health and ecological criteria, apart for one soil sample which exceeded benzo(a)pyrene against the NEPM (2013) ESL guidelines for commercial/industrial land use. However, given this result is below the more reliable CRC Care (2017) guideline, it is therefore considered to pose a low risk to future ecological receptors.
Excavation and Stockpiling of Actual and/or Potential Acid Sulfate Soils or soils with high salinity hazard	Stockpiling during M7 Westlink construction	- Actual Acid Sulfate and Potential Acid Sulfate (AASS/PASS) - Saline and sodic soils	- Migration of acidic or saline leachate/runoff to surface water or infiltration to groundwater - Rill and gully erosion, salinisation and scarring of the landscape	<u>Environmental Receptors:</u> - Surface-dependant floral and faunal ecosystems, including transient and macroinvertebrate species - Groundwater - Surface waters such as Creeks and tributaries within the Reedy Creek Catchment.	<u>Health:</u> Low – Unlikely No AASS/PASS or saline soils were identified during assessment <u>Environment:</u> Low – Unlikely No AASS/PASS or saline soils were identified during assessment

Installation of piles in AASS/PASS or soils with high salinity hazard	Construction of piles and working platforms (temporary and permanent structures)	• AASS/PASS • Saline and sodic soils	• Infiltration of acidic or saline leachate into groundwater • Wicking of saline water into bridge structure • Acid corrosion of bridge structure	<u>Human Receptors:</u> • Site maintenance workers or visitors coming into contact with impacted bridge structures • Weakening of bridge structures affecting bridge users <u>Environmental Receptors:</u> • Groundwater	<u>Health: Low</u> – Unlikely No AASS/PASS or saline soils were identified during assessment <u>Environment: Low</u> – Unlikely No AASS/PASS or saline soils were identified during assessment
---	--	---	---	---	--

16. CONSTRAINTS TO THE ASSESSMENT

Given the dense vegetation and grass cover, there is a general limitation on the visual inspection of the project area, which may have unidentified contamination that could have been reasonably identified during the site walkover inspection and investigation.

Soil samples were collected from an area within the proposed excavation footprint of the west embankment, however, the sampling locations at the median strip (BH09-BH11) were limited to accessible locations where backfill was placed for drill rig access due to presence of the steep drainage depress. Therefore, excavation was not undertaken at the northern portion of the median strip, where safe access for boreholes were not feasible. For the purposes of this DSI, soil profile and samples collected at the southern and central portion of the median strip is assumed to be representative of the northern portion of the median strip. Should soil material, foreign inclusions and/or other forms of contamination be encountered during proposed excavation works, EDP should be contacted to assess the spoil and the contamination status.

17. DISCUSSION & CONCLUSION

Based on the review of the site history, desktop assessment, site inspections, intrusive investigation and analytical results forming this DSI, EDP makes the following conclusions:

- A Tier I Qualitative review of the analytical dataset has identified no risks to the development from a human health nor an ecological perspective with all results below the respective criteria for ongoing commercial/ industrial land usage, apart for on soil sample at BH04_0.5 which exceeded benzo(a)pyrene against the NEPM (2013) ESL guidelines. However, given the concentration of that sample was below the more reliable CRC Care (2017) guidelines, it is therefore considered to pose a low risk to ecological receptors;
- Physical characteristics of soils across the site, specifically regarding acid sulfate potential have not shown evidence of PASS/AASS.
- Soils presented salinity ranging from 'non-saline' to 'slightly saline' across the site; and
- Soils within the investigation extent of the site are considered low risk and acceptable for reuse during the construction of the M7-M12 Integration Project and suitable for the final intended land use subject to the implementation of an unexpected finds protocol. Based on the findings of this report, areas previously identified as moderate risk in the CIA (AECOM 2022) conducted for the site under Condition 1A of Schedule 1, have been confirmed as low risk.

The preparation of this DSI is deemed to satisfy the NSW M7 CoA D67, M7 REMM C2 as presented in **Section 4**.

18. RECOMMENDATIONS

Based on the findings of this DSI, EDP requires that the following recommendations are implemented to ensure the low risk for commercial/industrial land use conclusion is upheld or can be confirmed. This includes the following:

- Although no asbestos fragment was identified in soil, any future unknown instances of contamination discovered during the course of the construction works would be appropriately managed under the site's unexpected finds procedure and asbestos management plan as referenced below:
 - M7-M12 Integration project Construction Environmental Management Plan - Appendix B4: Construction Soil and Water Management Sub-plan – Appendix M: Unexpected Contaminated Land Finds Procedure (M7M12 UDC-JHGRP-M7A-EN-PLN-000076_CSWMP_RevH_AppM).
 - M7-M12 Integration project Construction Environmental Management Plan – Appendix B5: Construction Contamination Land Management Sub-plan – Appendix B: Asbestos Management Plan (M7I2UDC-JHGRP-M7A-EN-PLN-000077_CCLMP_RevE_AppB).
- If the future use of the site is proposed to change to a more sensitive land use, a review of the results with a comparison against human health and ecological criteria for the proposed new land use must be undertaken.

STATEMENT OF LIMITATIONS

This document has been prepared in response to specific instructions from the client to whom the report has been addressed. The work has been undertaken with the usual care and thoroughness of the consulting profession. The work is based on generally accepted standards, practices of the time the work was undertaken. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The report has been prepared for the use by the client and the use of this report by other parties may lead to misinterpretation of the issues contained in this report. To avoid misuse of this report, EDP advise that the report should only be relied upon by the client and those parties expressly referred to in the introduction of the report. The report should not be separated or reproduced in part and EDP should be retained to assist other professionals who may be affected by the issues addressed in this report to ensure the report is not misused in any way.

EDP is not a professional quantity surveyor (QS) organisation. Any areas, volumes, tonnages or any other quantities noted in this report are indicative estimates only. The services of a professional QS organisation should be engaged if quantities are to be relied upon.

Sampling Risks

EDP acknowledges that any scientifically designed sampling program cannot guarantee all subsurface contamination will be detected. Sampling programs are designed based on known or suspected site conditions and the extent and nature of the sampling and analytical programs will be designed to achieve a level of confidence in the detection of known or suspected subsurface contamination. The sampling and analytical programs adopted will be those that maximises the probability of identifying contaminants. The client must therefore accept a level of risk associated with the possible failure to detect certain subsurface contamination where the sampling and analytical program misses such contamination. EDP will detail the nature and extent of the sampling and analytical program used in the investigation in the investigation report provided.

Environmental site assessments identify actual subsurface conditions only at those points where samples are taken and when they are taken. Soil contamination can be expected to be non-homogeneous across the stratified soils where present on site, and the concentrations of contaminants may vary significantly within areas where contamination has occurred. In addition, the migration of contaminants through groundwater and soils may follow preferential pathways, such as areas of higher permeability, which may not be intersected by sampling events. Subsurface conditions including contaminant concentrations can also change over time. For this reason, the results should be regarded as representative only.

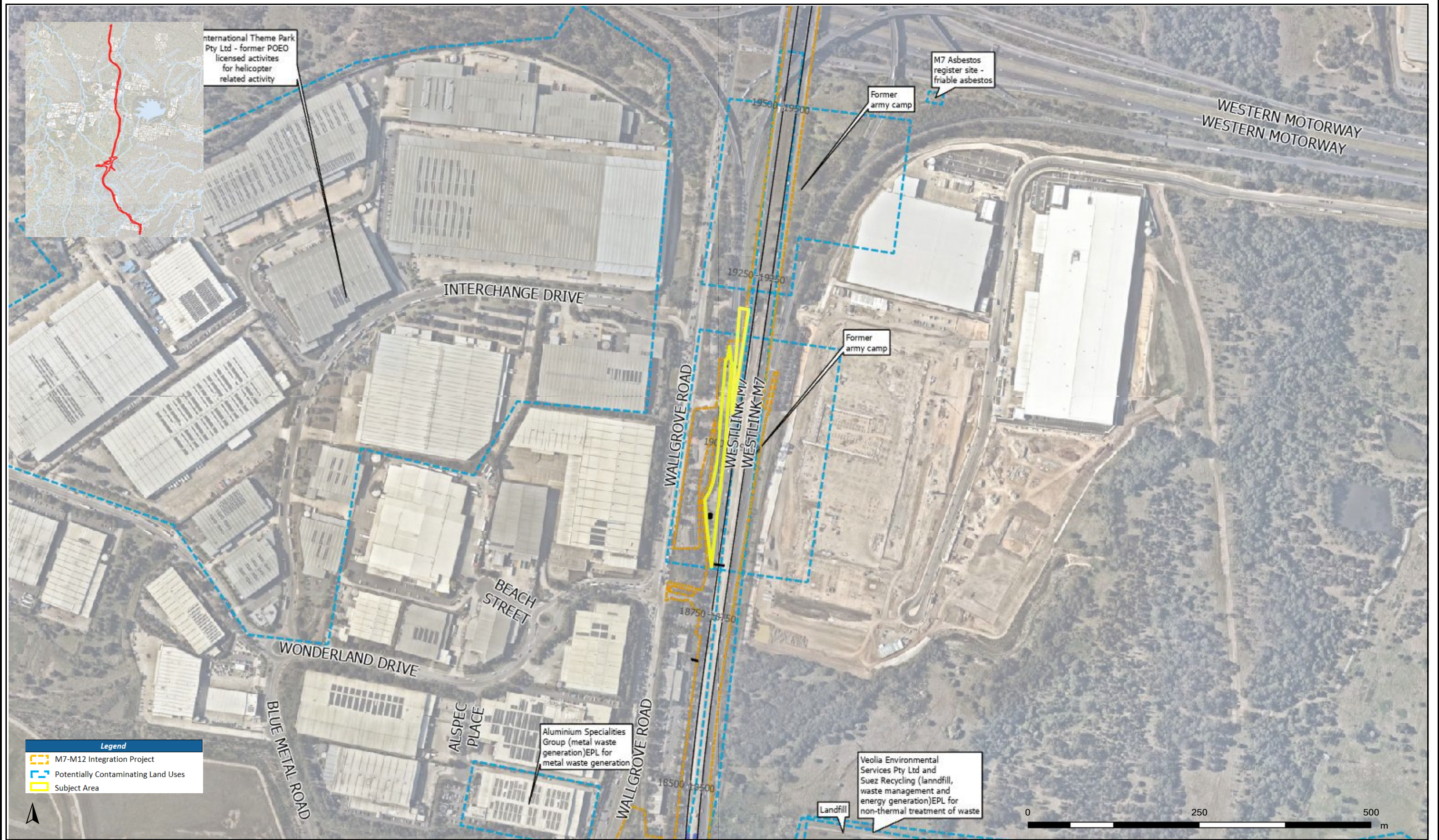
The client recognises that sampling of subsurface conditions may result in some cross contamination. All care will be taken and the industry standards used to minimise the risk of such cross contamination occurring, however, the client recognises this risk and waives any claims against EDP and agrees to defend, indemnify and hold EDP harmless from any claims or liability for injury or loss which may arise as a result of alleged cross contamination caused by sampling.

Reliance on Information Provided by Others

EDP notes that where information has been provided by other parties in order for the works to be undertaken, EDP cannot guarantee the accuracy or completeness of this information the client therefore waives any claim against the company and agrees to indemnify EDP for any loss, claim or liability arising from inaccuracies or omissions in information provided to EDP by third parties. No indications were found during our investigations that information contained in this report, as provided to EDP, is false.

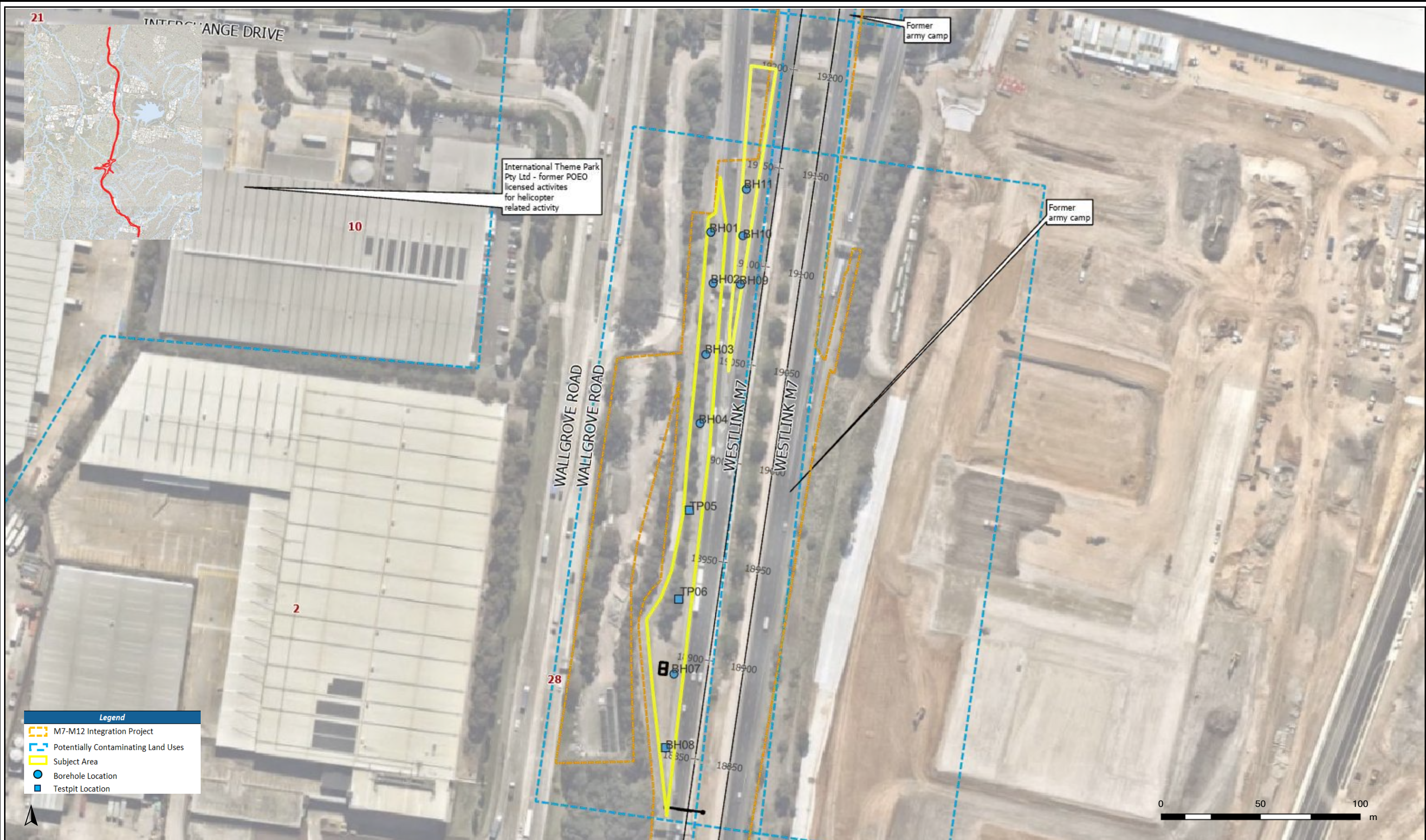
Recommendations for Further Study - The industry recognised methods used in undertaking the works may dictate a staged approach to specific investigations. The findings therefore of this report may represent preliminary findings in accordance with these industry recognised methodologies. In accordance with these methodologies, recommendations contained in this report may include a need for further investigation or analytical analysis. The decision to accept these recommendations and incur additional costs in doing so will be at the sole discretion of the client and EDP recognises that the client will consider their specific needs and the business risks involved. EDP does not accept any liability for losses incurred as a result of the client not accepting the recommendations made within this report.

APPENDIX A: FIGURES



Legend

- M7-M12 Integration Project
- Potentially Contaminating Land Uses
- Subject Area



Legend

- M7-M12 Integration Project
- Potentially Contaminating Land Uses
- Subject Area
- Borehole Location
- Testpit Location

APPENDIX B: HISTORICAL AERIAL PHOTOGRAPHS

Site Details: M7/M12 Integration Project M4 Ramp - Eastern Creek, NSW 2766

EDP Reference: S-05667.DSI.M7.024



Historical Aerial image of subject area in 1947. Source:
Photograph 1: portal.spatial.nsw.gov.au.
Dashed red outlines approximate site location.



Historical Detailed aerial image of subject area in 1965. Source:
Photograph 2: portal.spatial.nsw.gov.au.
Dashed red outlines approximate site location.



Historical Aerial image of subject area in 1975. Source:
Photograph 3: portal.spatial.nsw.gov.au.
Red outlines approximate site location.



Historical Detailed aerial image of subject area in 1978. Source:
Photograph 4: portal.spatial.nsw.gov.au.
Red outlines approximate site location.

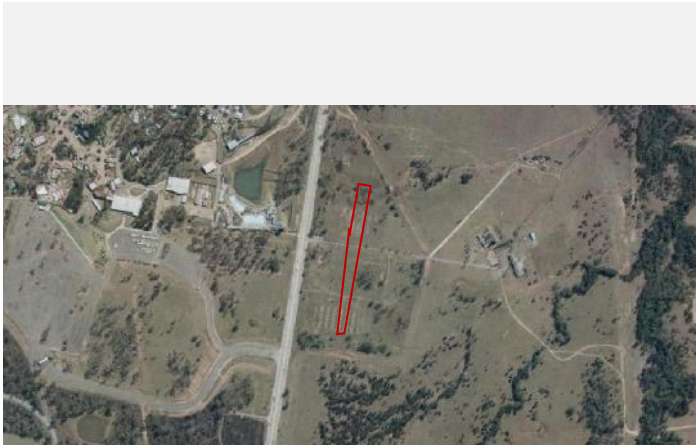


Historical Aerial image of subject area in 1984. Source:
Photograph 5: portal.spatial.nsw.gov.au.
Red outlines approximate site location.

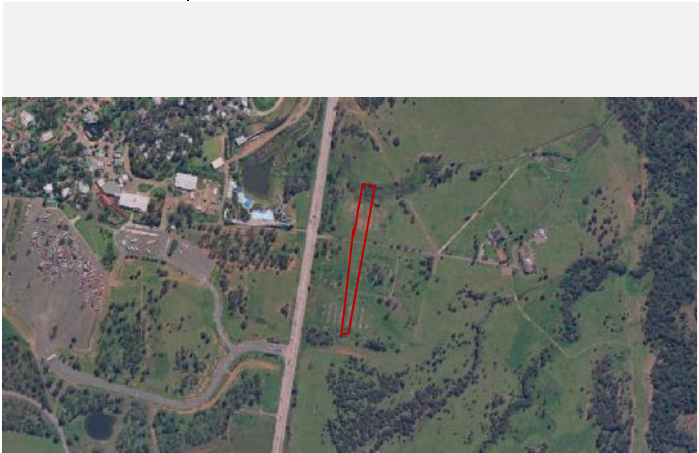


Historical Detailed aerial image of subject area in 1986. Source:
Photograph 6: portal.spatial.nsw.gov.au.
Red outlines approximate site location.

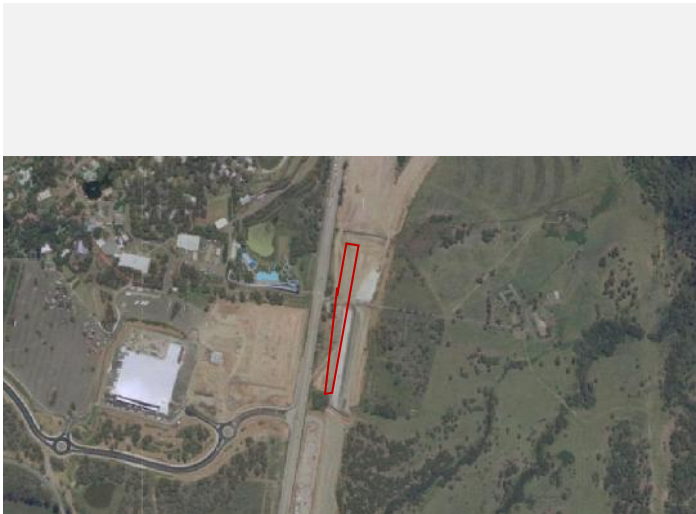
Site Details:	M7/M12 Integration Project M4 Ramp - Eastern Creek, NSW 2766
EDP Reference:	S-05667.DSI.M7.024



Historical Aerial image of subject area in 1991. Source: portal.spatial.nsw.gov.au.
Photograph 7: Red outlines approximate site location.



Historical Detailed aerial image of subject area in 1998. Source: portal.spatial.nsw.gov.au.
Photograph 8: Red outlines approximate site location.



Historical Aerial image of subject area in 2004. Source: portal.spatial.nsw.gov.au.
Photograph 9: Red outlines approximate site location.



Historical Detailed aerial image of subject area in 2005. Source: portal.spatial.nsw.gov.au.
Photograph 10: Red outlines approximate site location.

Site Details:	M7/M12 Integration Project M4 Ramp - Eastern Creek, NSW 2766
EDP Reference:	S-05667.DSI.M7.024



Historical Photograph 11:	Aerial image of subject area in 2013. Source: portal.spatial.nsw.gov.au. Red outlines approximate site location.
---------------------------	---



Historical Photograph 12:	Detailed aerial image of subject area in 2024. Source: portal.spatial.nsw.gov.au. Red outlines approximate site location.
---------------------------	--

End of Photographic Log

APPENDIX C: LAND INSIGHT REPORT



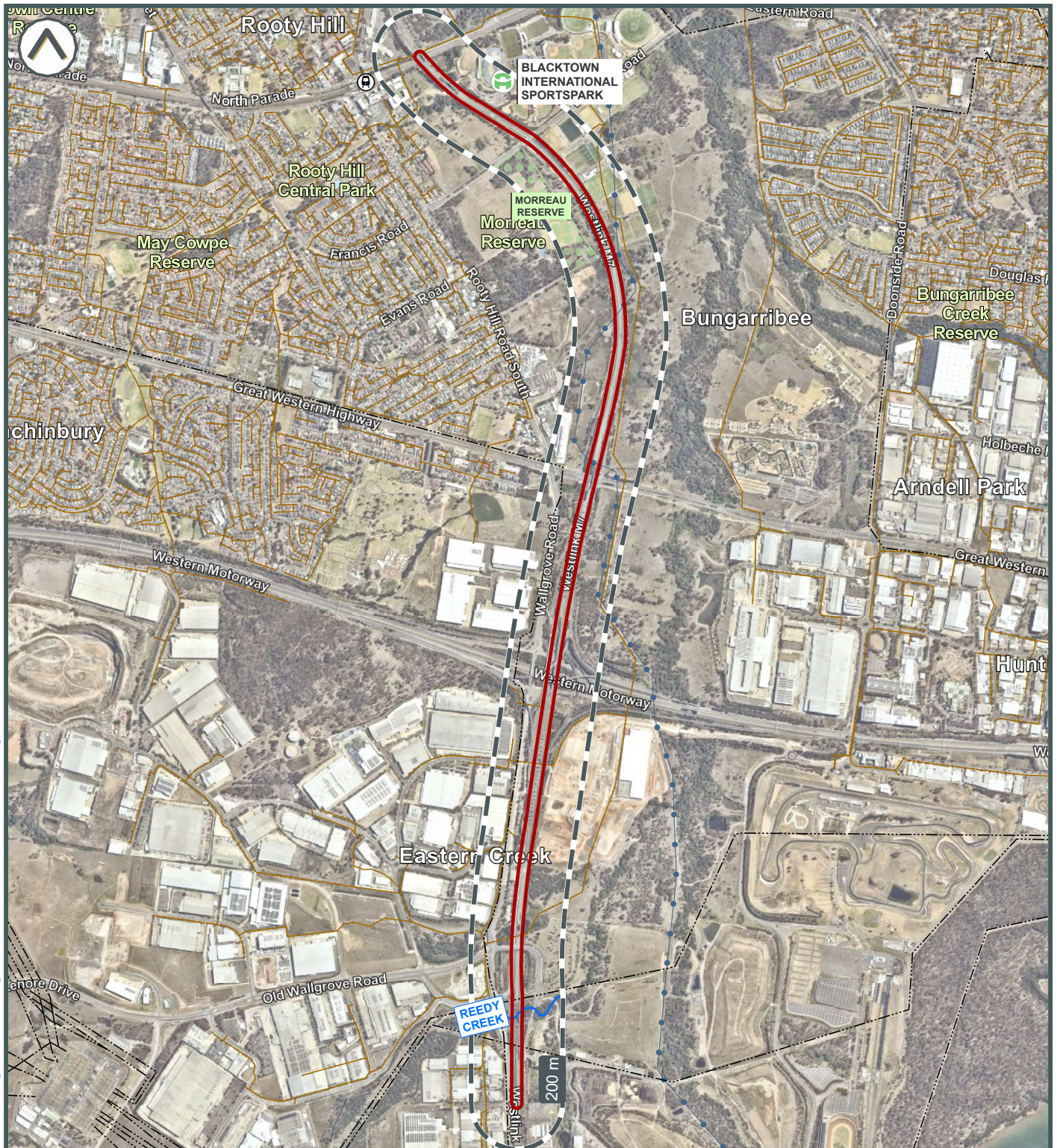
Appendix A

REPORT MAPS

Westlink M7 Motorway Chainage 18000 - 23000
Western Sydney, NSW



Subject Area and Sensitive Receptors

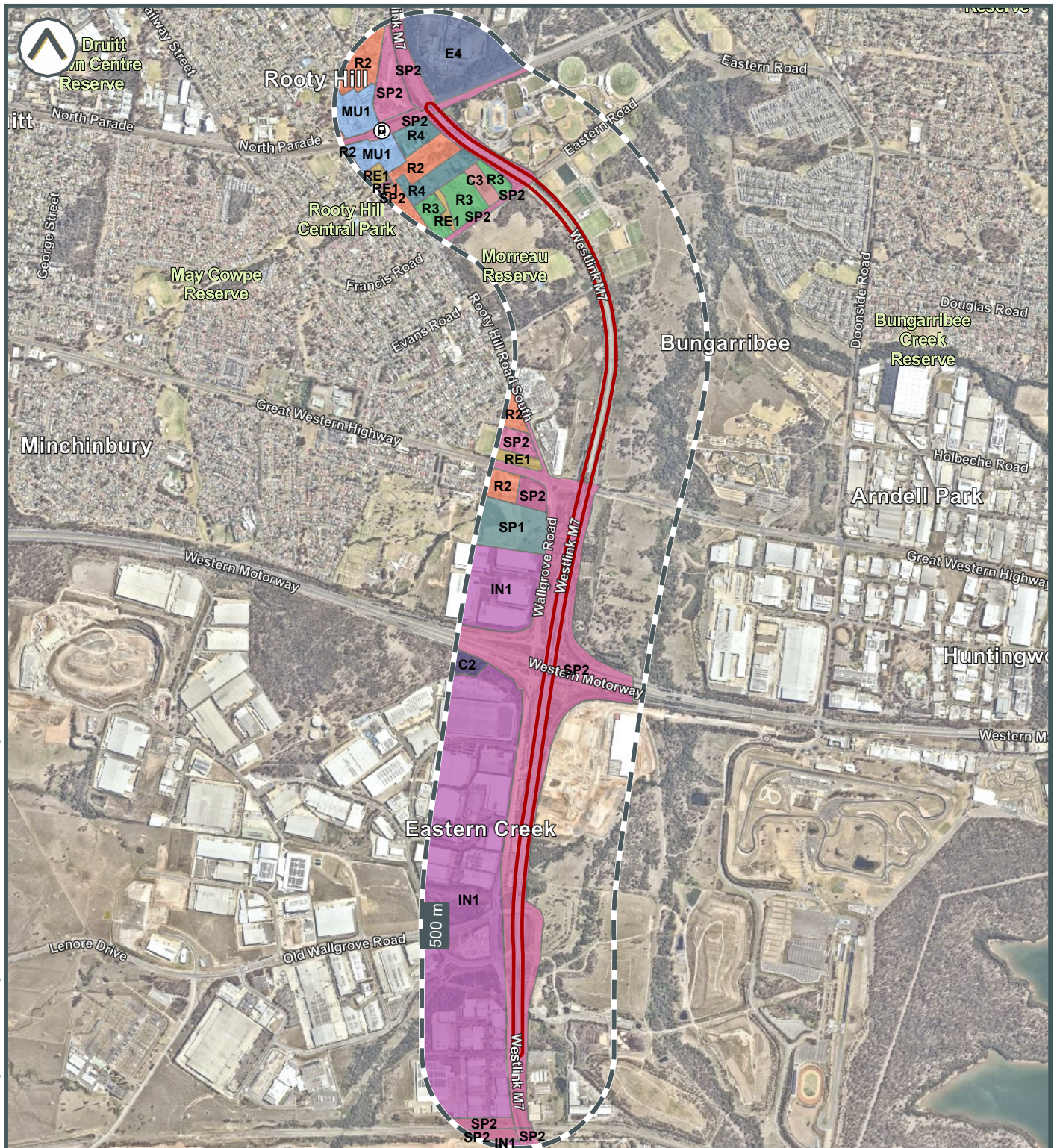


- Subject area
- Water Bodies
- Sports and Recreation
- Sewer main
- Parks
- Transmission line
- Pipeline



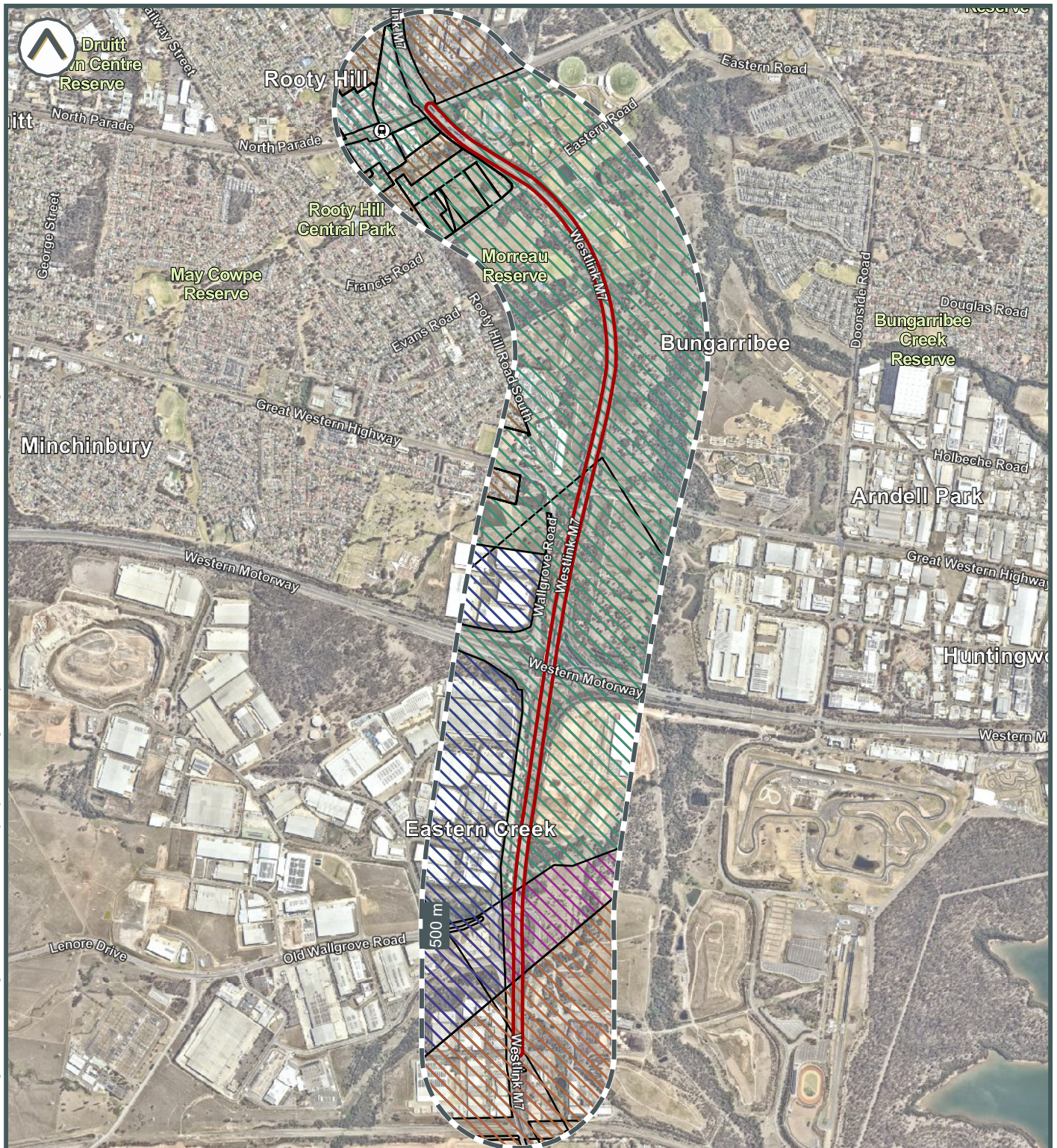


Zoning





Planning Overlays

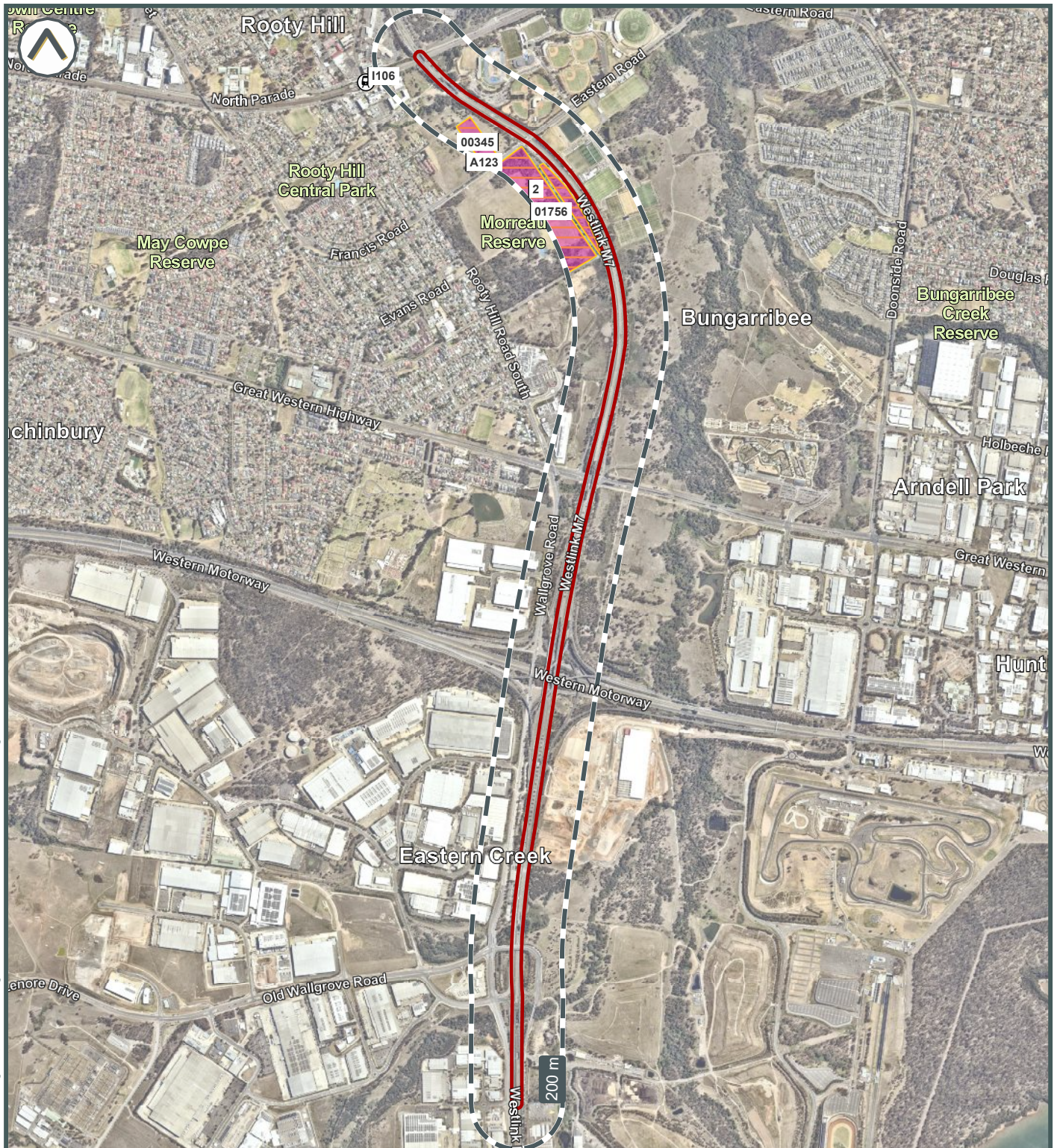


- | | | |
|----------------------------------|------------------------------|-----------------------------|
| Subject area | Height of Building | Local Provisions |
| Planning Overlays | Industrial Release Area | Lot Size |
| Bulk Water Supply Infrastructure | Infrastructure | Obstacle Limitation Surface |
| Coal Seam Gas Exclusions | Land Reservation Acquisition | |

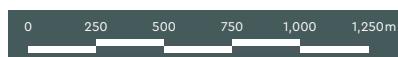




Heritage

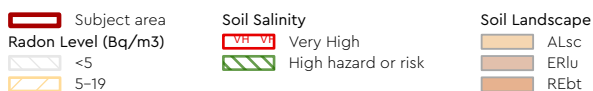
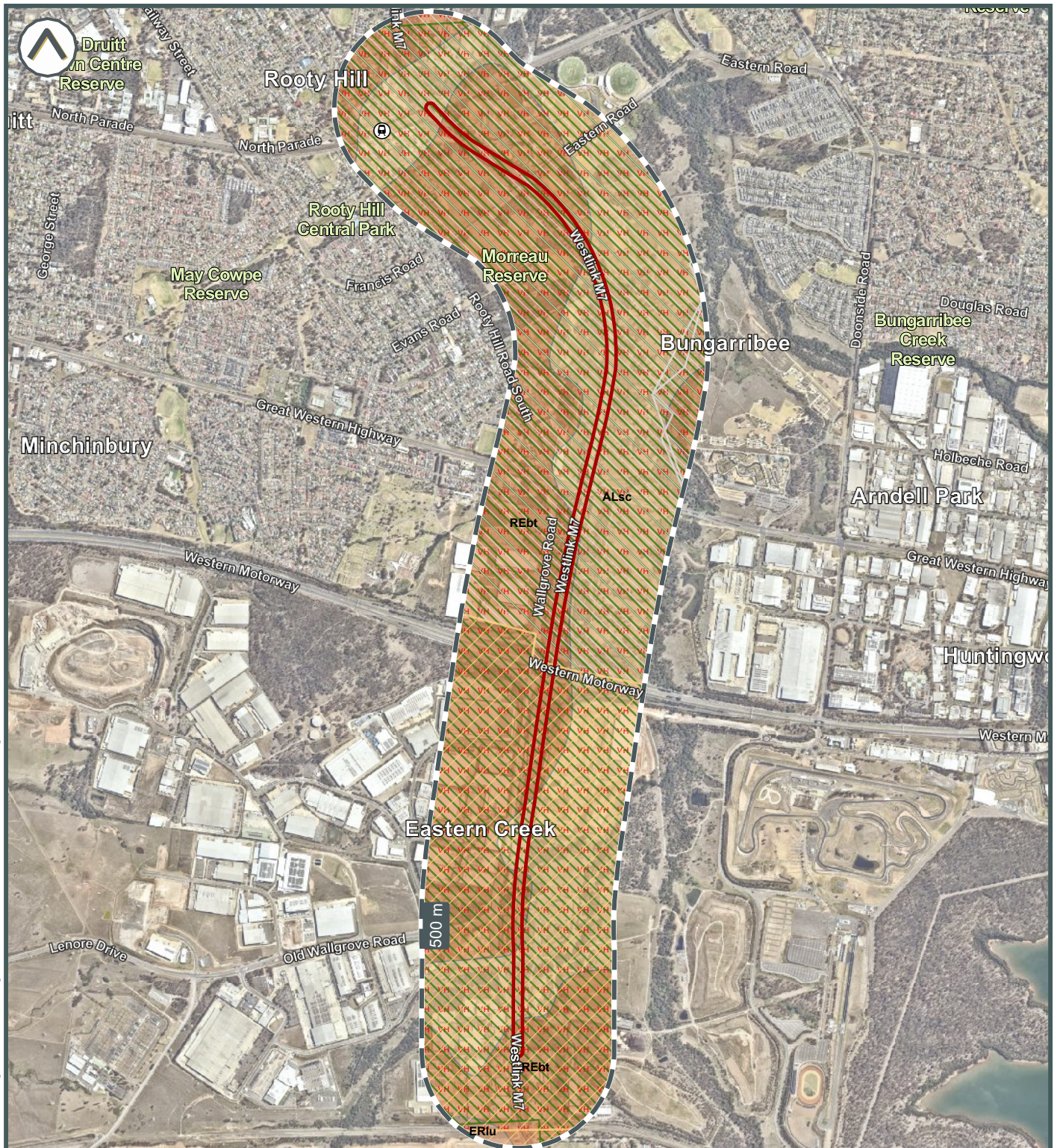


- Subject area
- State and Local Heritage Registers
- State Heritage Register
- Heritage Register



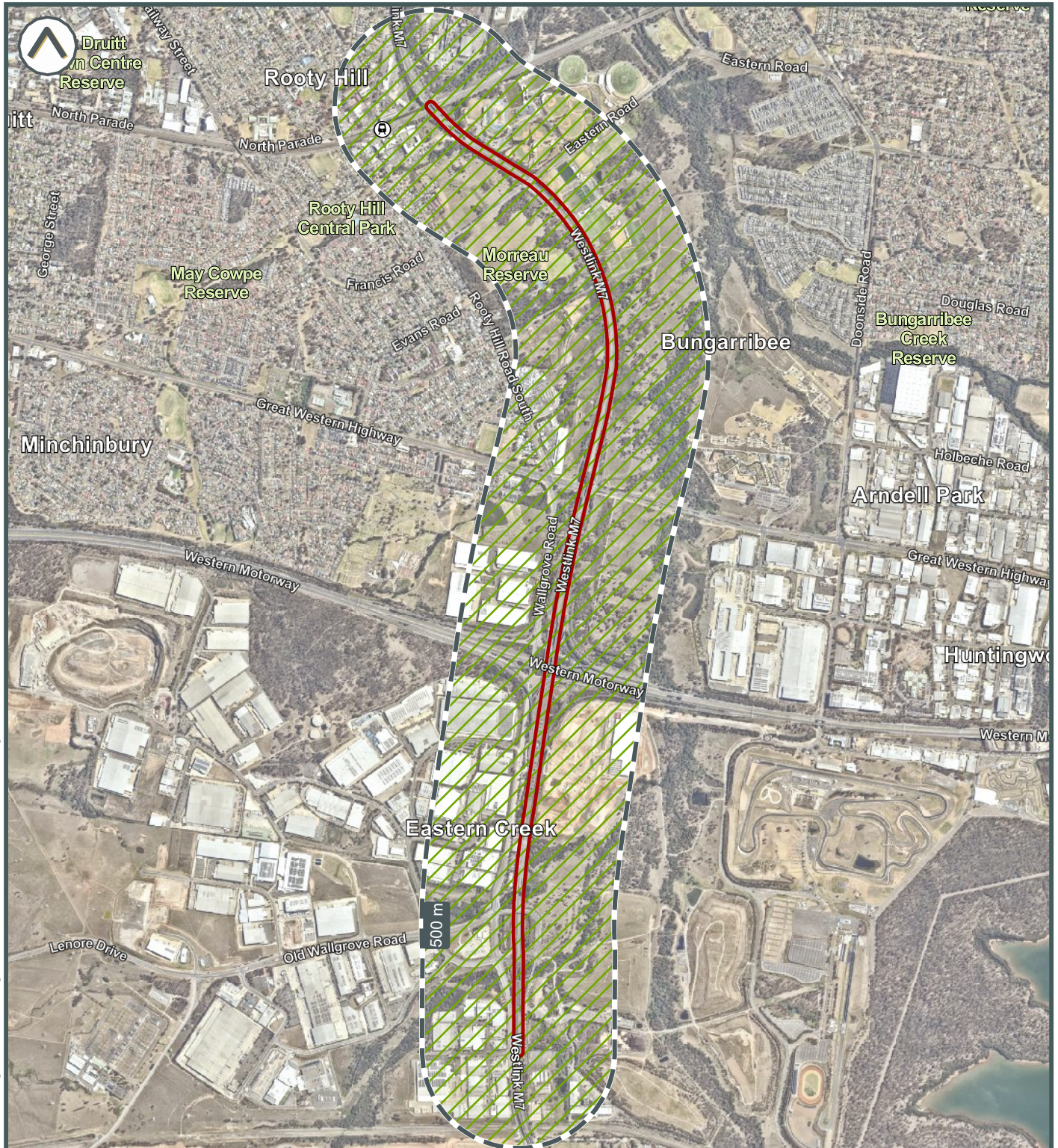


Soil Landscape and Salinity





Acid Sulfate Soils

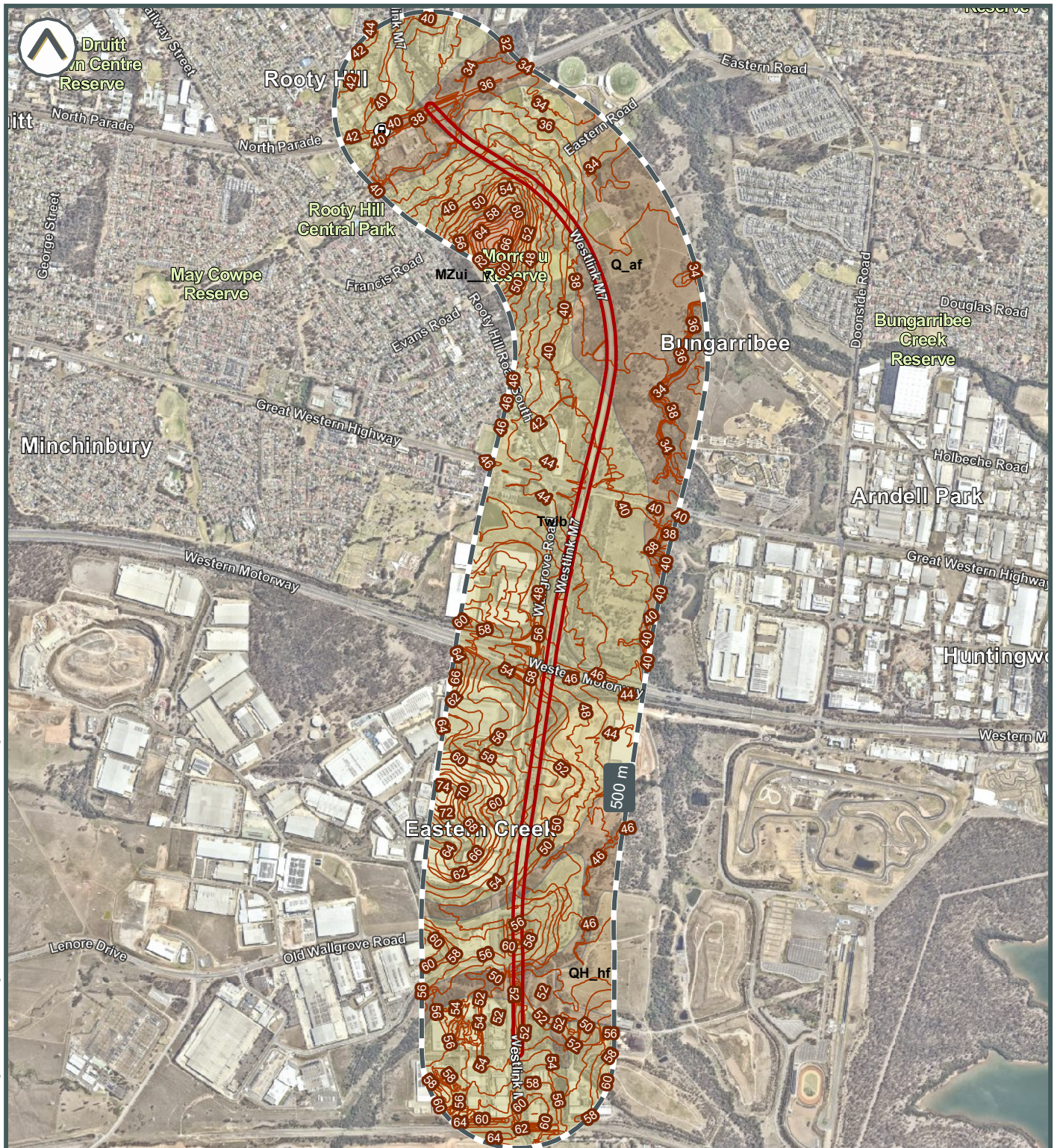


- Subject area
- Atlas of Australian Acid Sulfate Soils
- Extremely low probability of occurrence



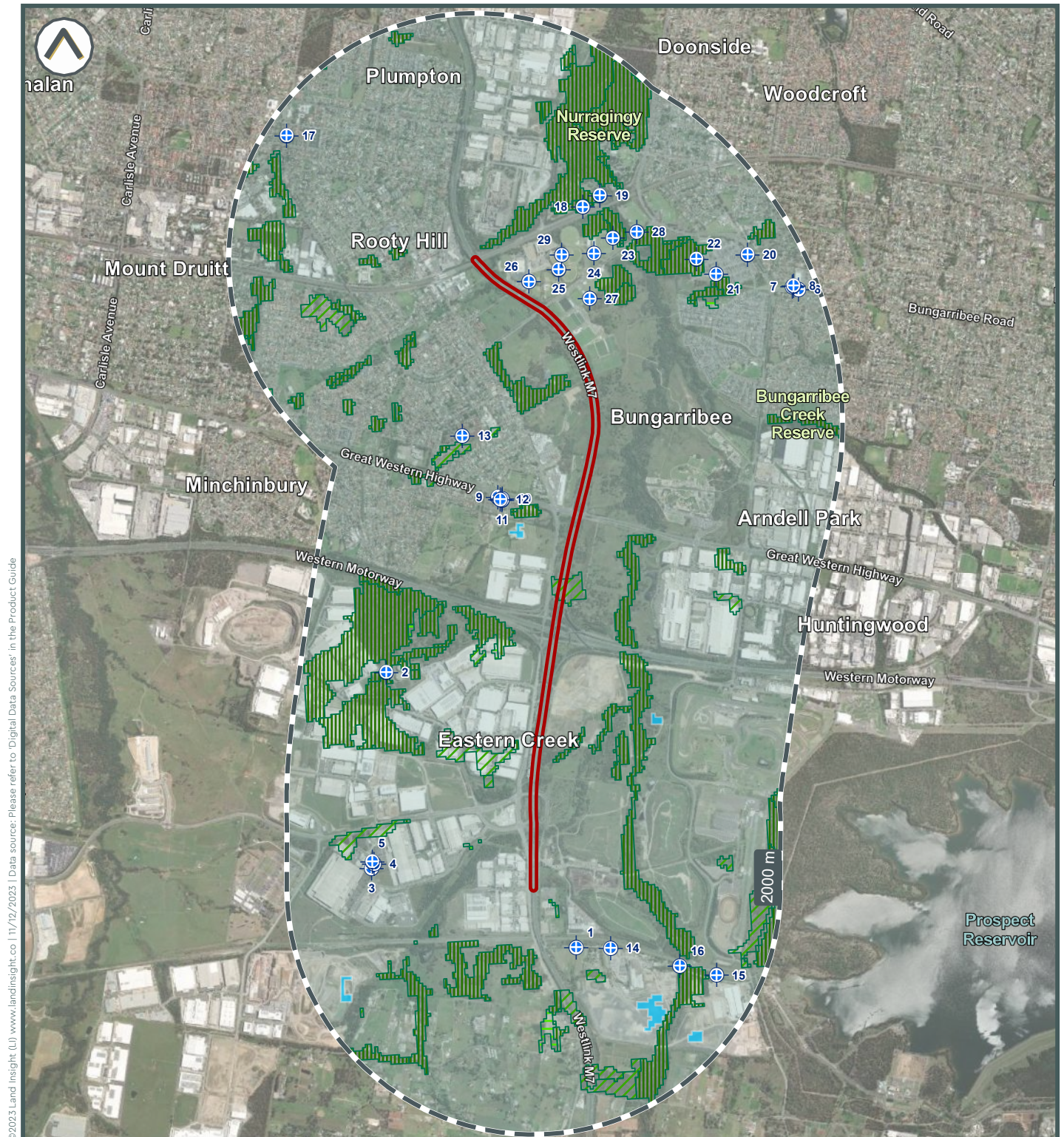


Geology and Topography





Groundwater Dependent Ecosystems & Hydrogeology Constraints

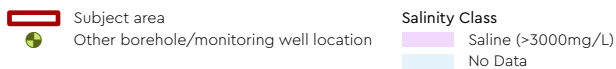
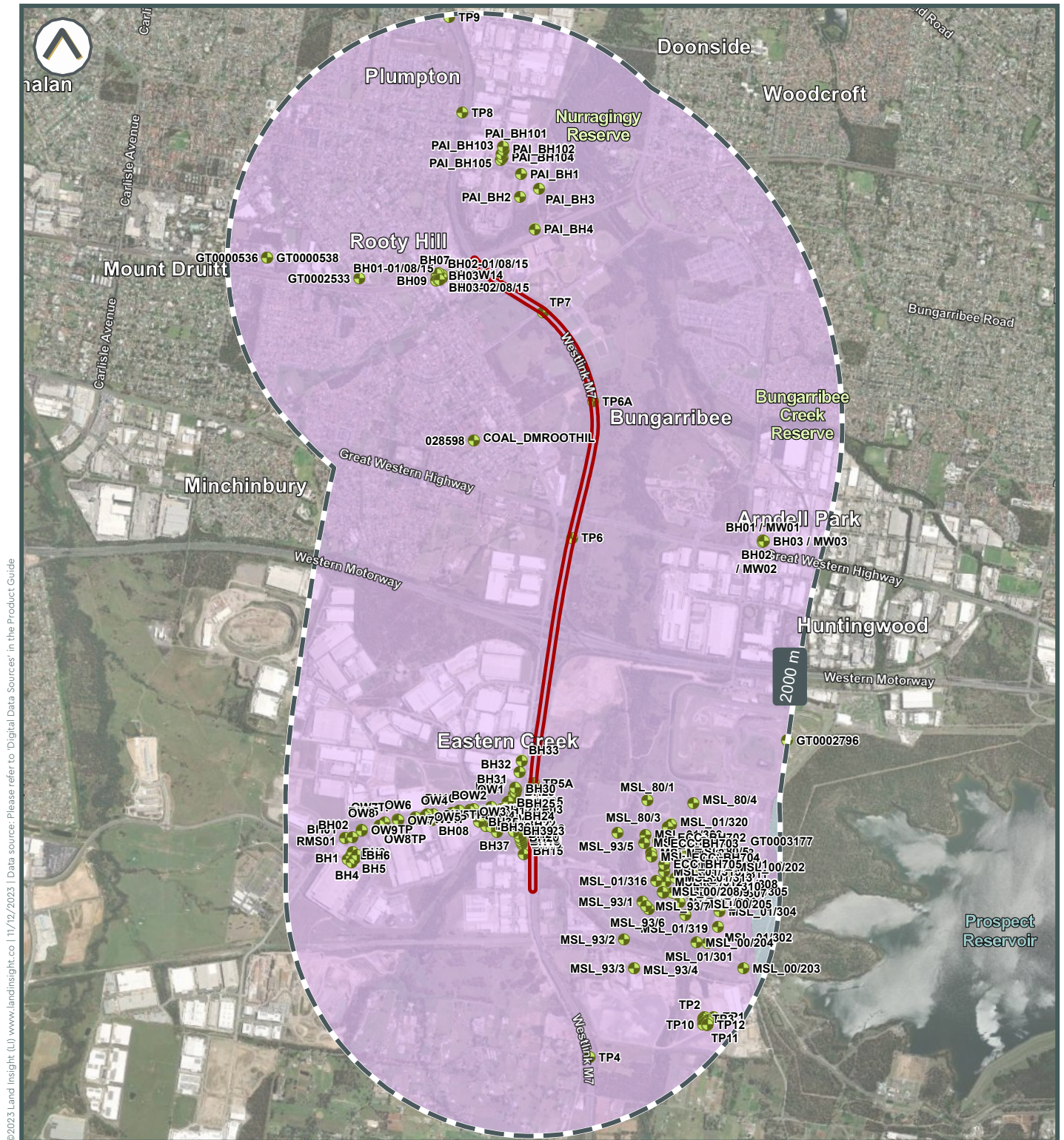


- Subject area
- Groundwater bores
- Ecosystems that rely on Subsurface presence of Groundwater
- High potential GDE – from national assessment
- Moderate potential GDE – from national assessment
- Low potential GDE – from national assessment
- Wetlands
- Aquifer type
- Porous, extensive aquifers of low to moderate productivity



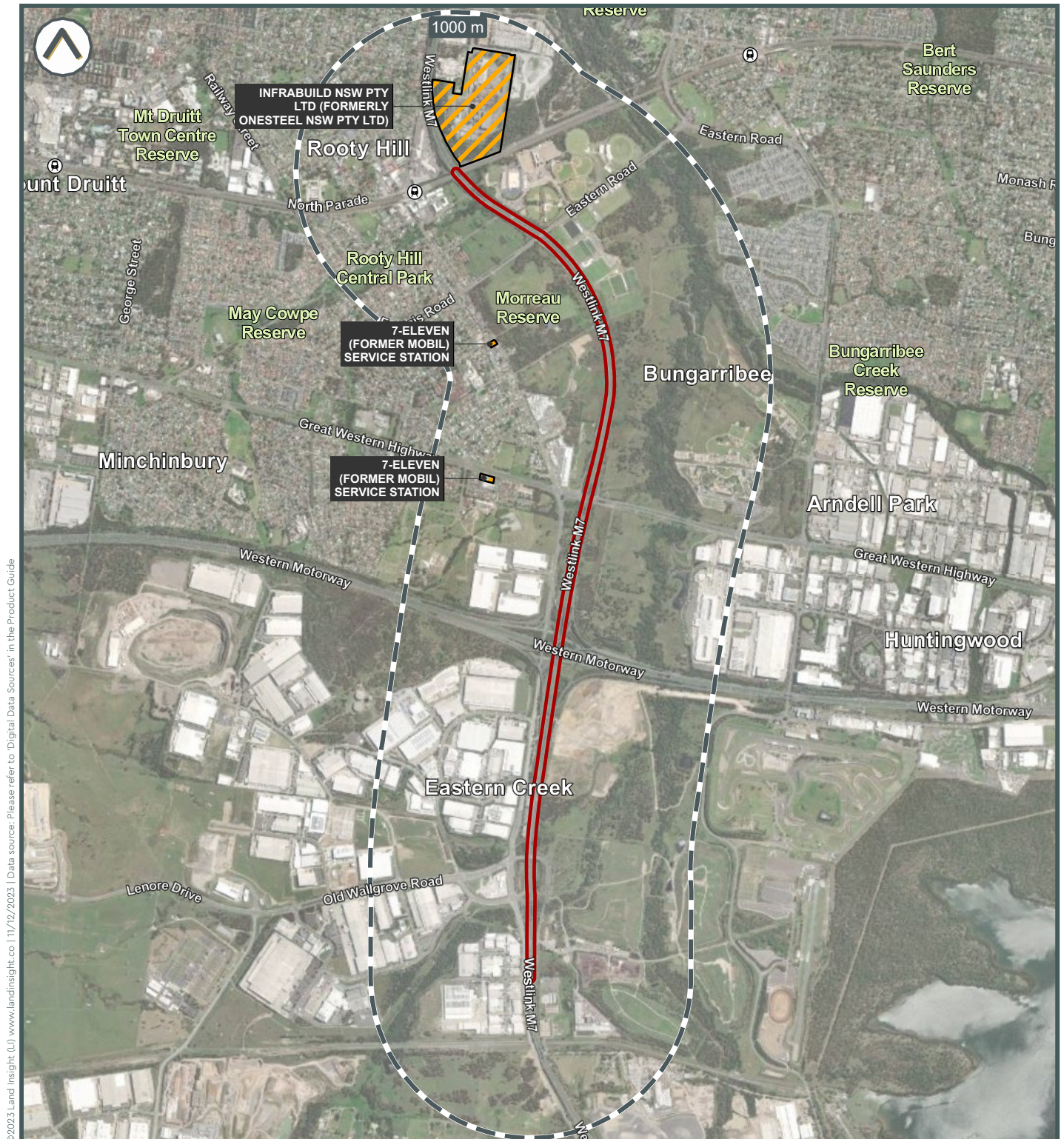


Groundwater and Other Bores





Contaminated Land Public Register



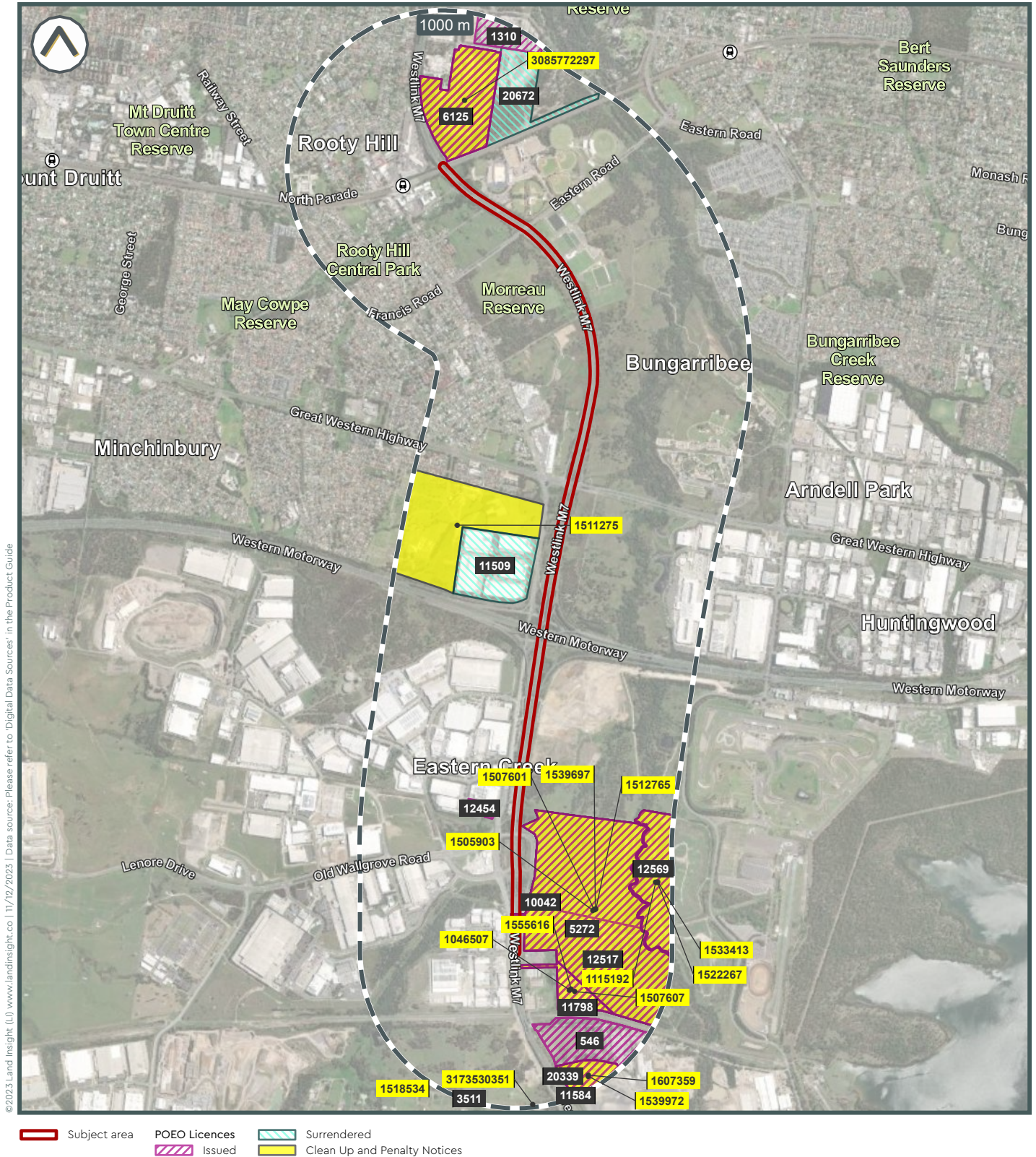
Subject area Contaminated Land Public Register (EPA)
EPA Notified Contaminated Sites

0 325 650 975 1,300 1,625m



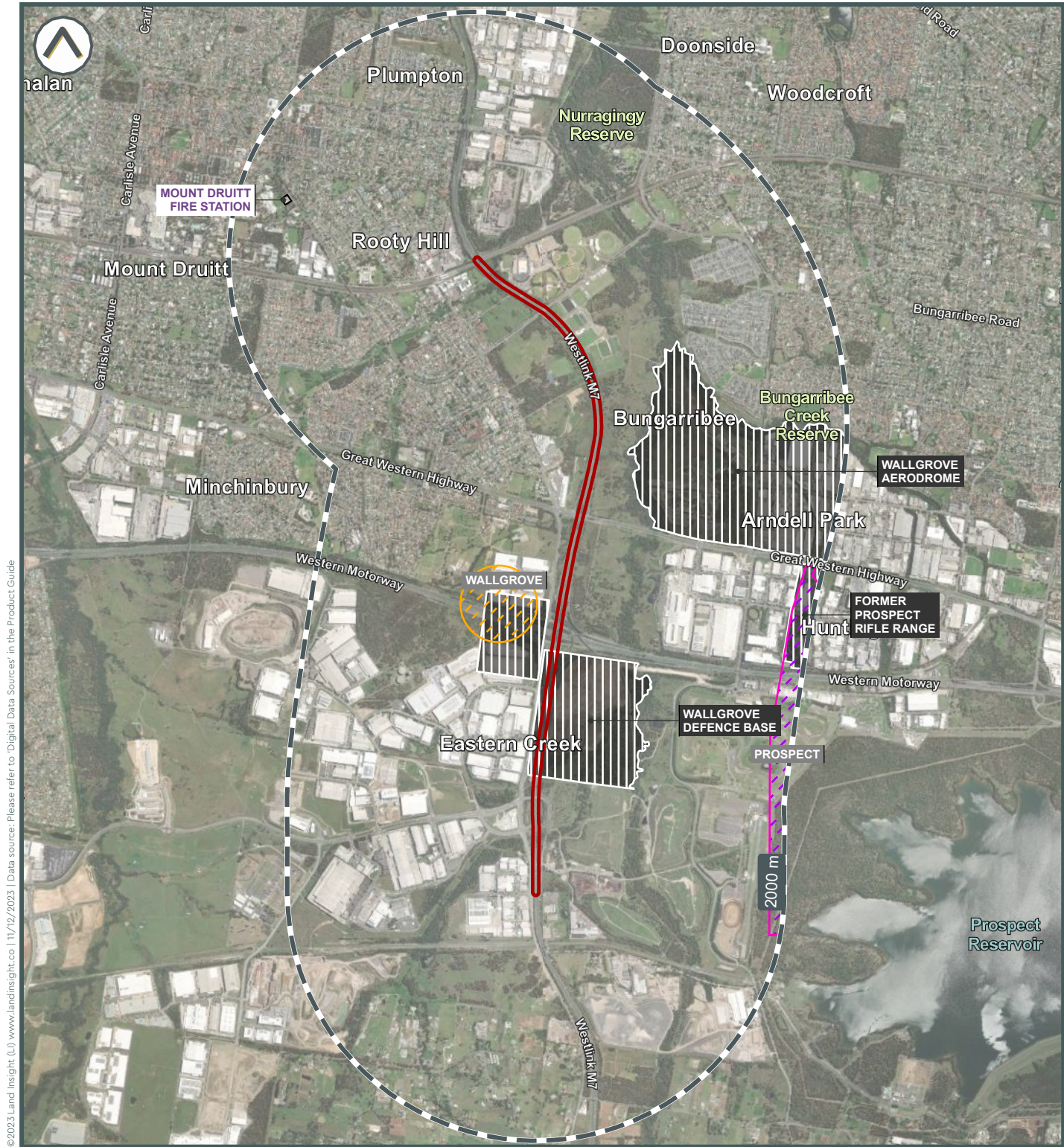


Licences, Approvals & Assessments





Sites Regulated by Other Jurisdictional Body



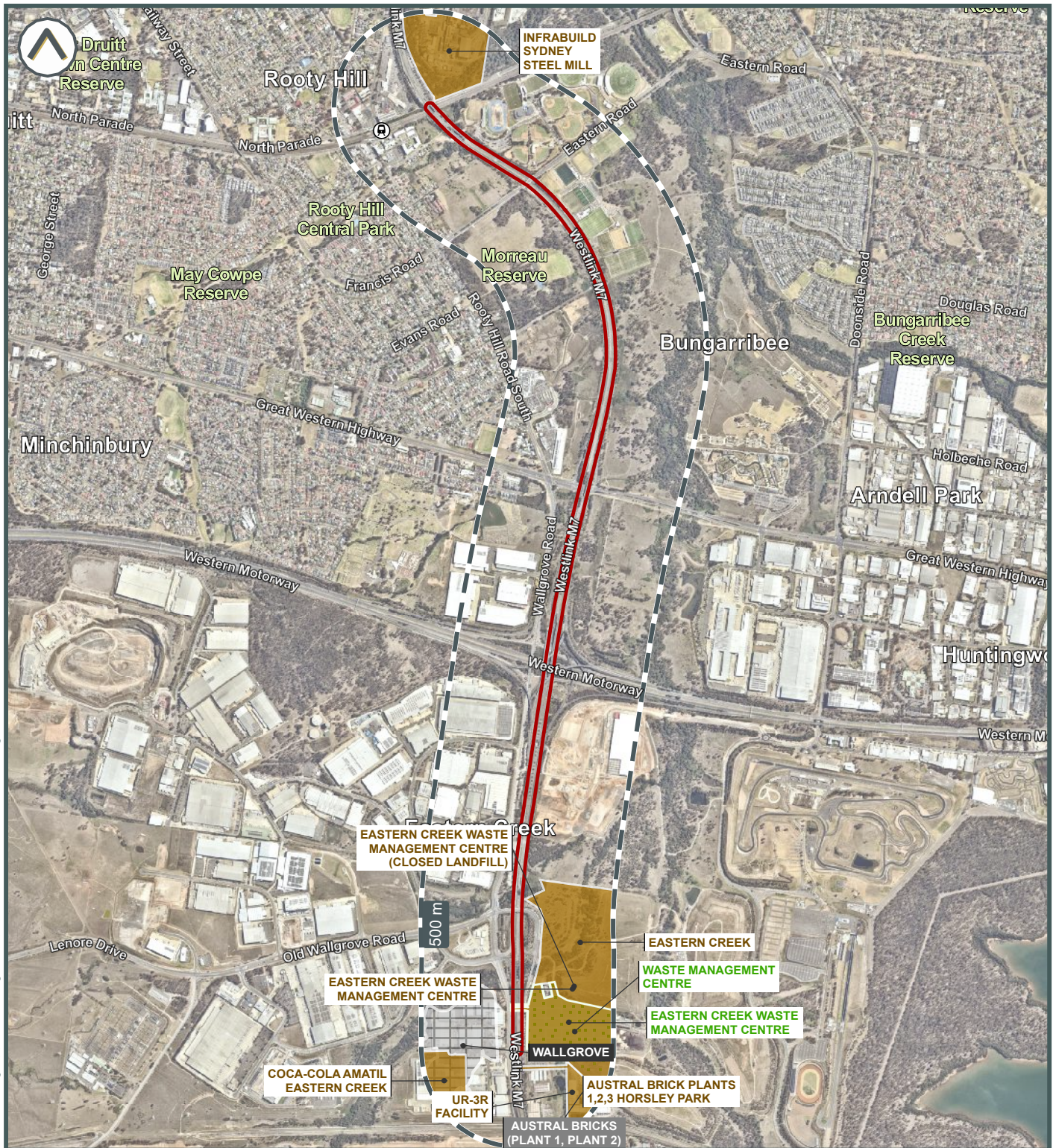
- Subject area
- PFAS sites
- Defence Area / Military Sites

- Unexploded Ordnance (UXO) Areas
- Slight potential
- Other





Other Potential Hazard Sources

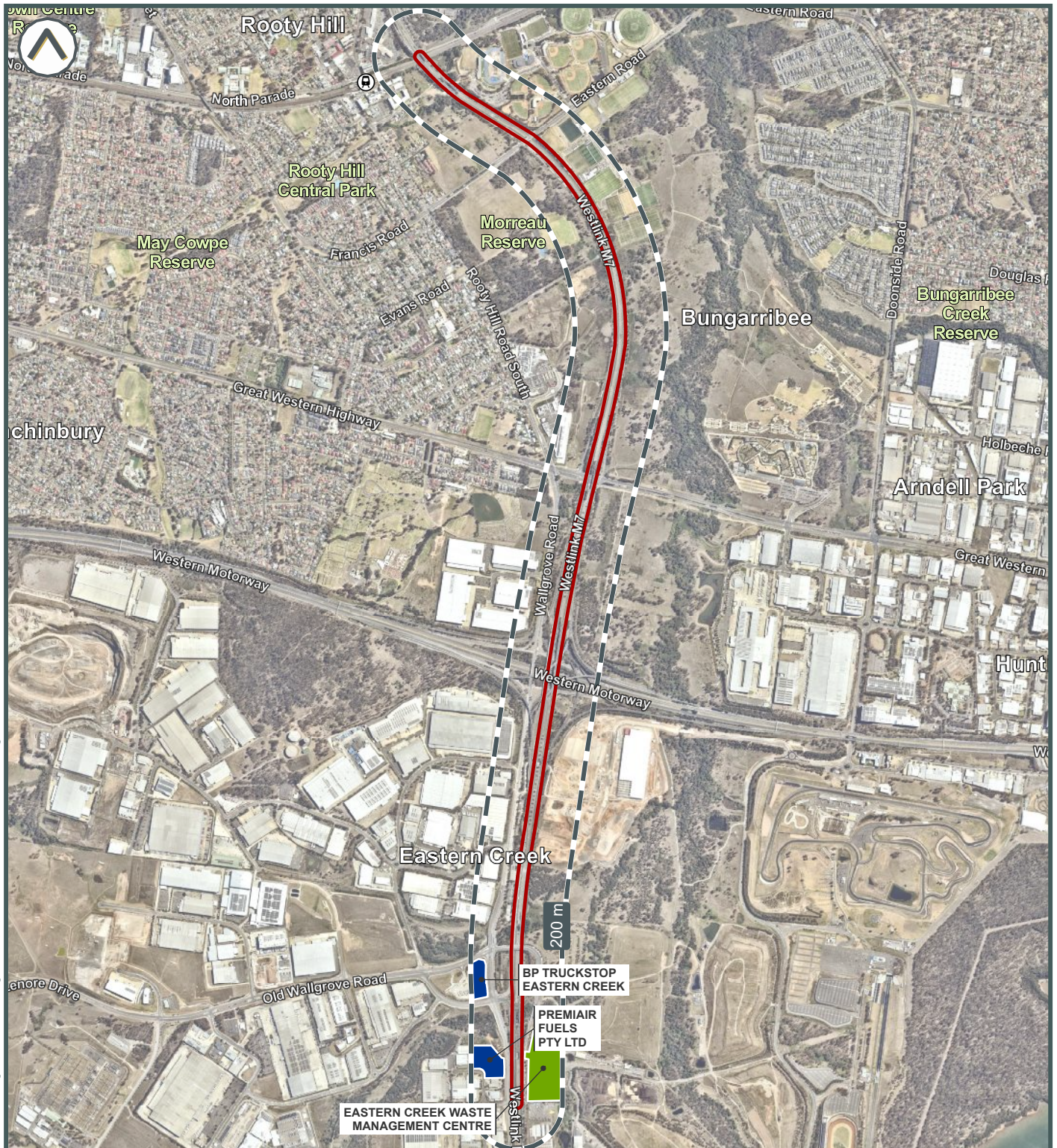


- Subject area
- NPI Facilities
- Landfill Sites
- Historical (legacy) Landfill Sites
- Quarries
- Derelict/Formers Quarries





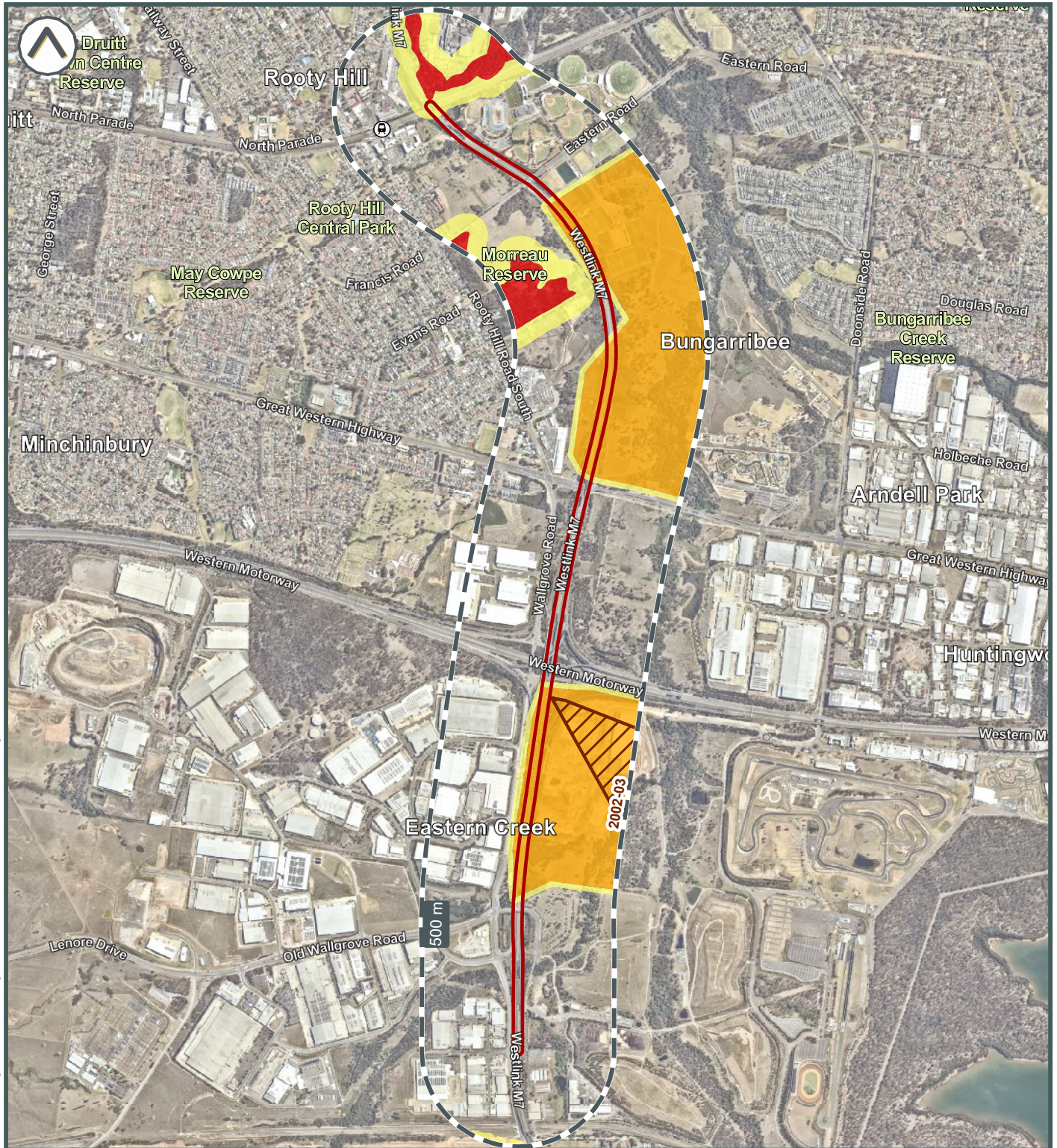
Potentially Contaminating Activities (PCAs)



- Subject area
- Petrol Stations and Fuel Terminals
- Waste and Recycling Facilities



Fire Hazards

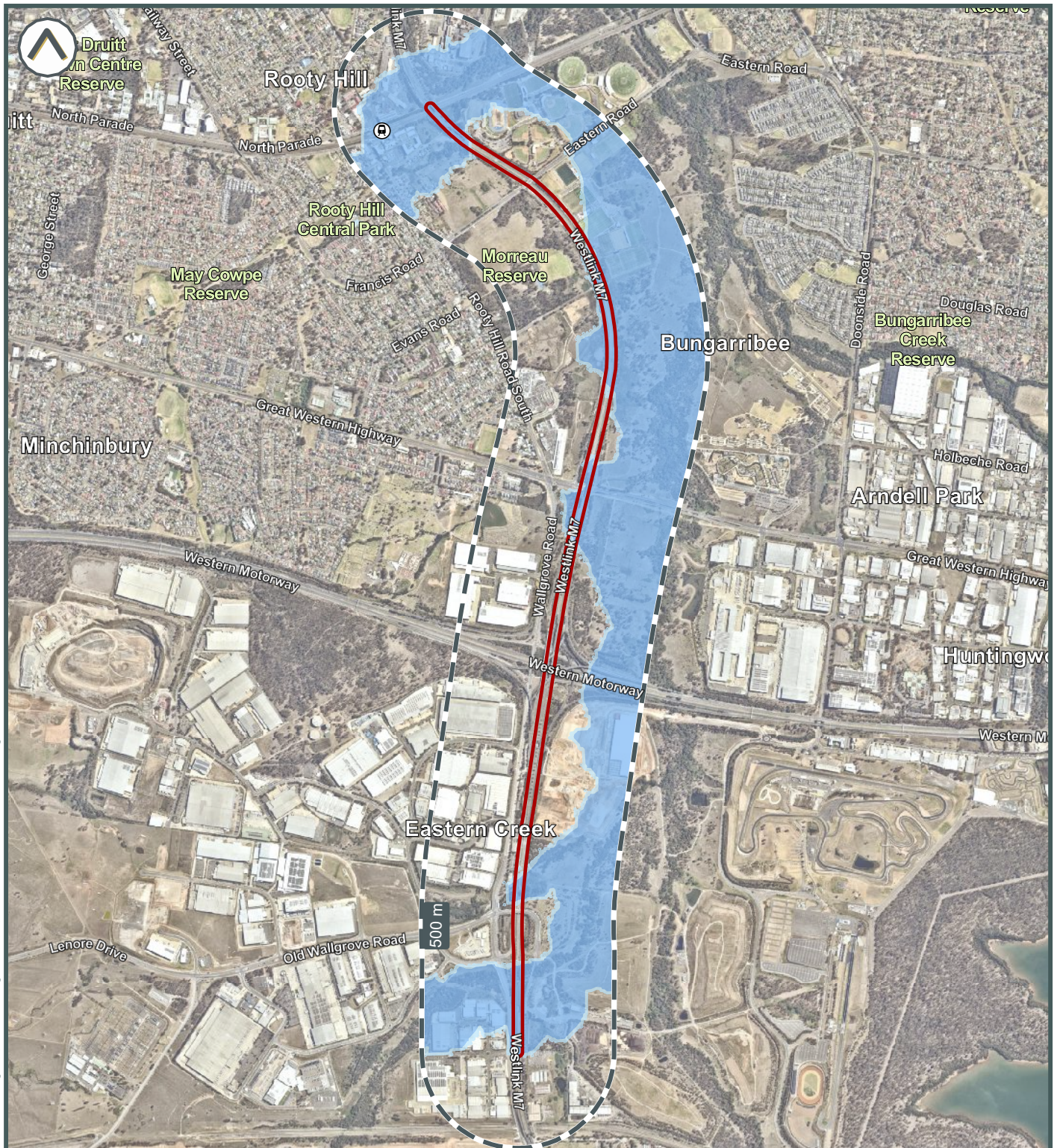


- Subject area
- Vegetation Category 2
- Fire History
- Vegetation Buffer
- Bushfire Prone Area
- Vegetation Category 1





Flood Hazard

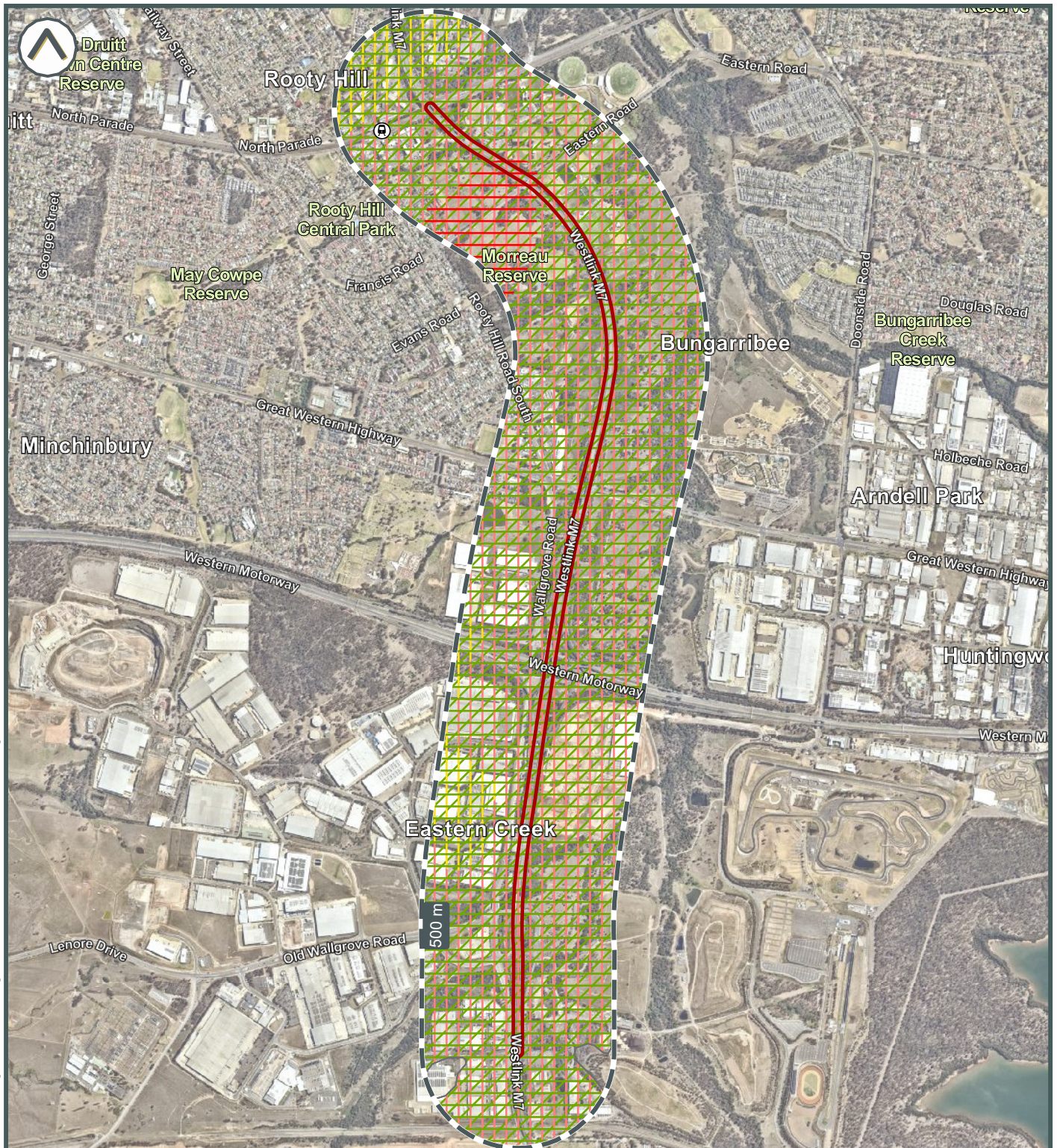


Subject area
Type
Probable Maximum Flood (PMF)





Erosion Hazard



Subject area	Water Erosion Risk High	Landslip Erosion Risk Very High
Wind Erosion Risk Very Low	Moderate	Very Low
Not Applicable / Not Assessed	Not Applicable / Not Assessed	Not Applicable / Not Assessed



Enviro-Screen Report

Westlink M7 Motorway
Chainage 18000 - 23000
Western Sydney, NSW
11 Dec 2023

Report n°:
LI-3925 ESR

Understanding your report

Thank you for ordering your report from Land Insight. If you have any feedback, questions or queries, please get in touch with us at orders@landinsight.co.au.

Your Report has been produced by Land Insight and contains information related to current and historical land use information, environmental risks and hazards.

The information presented in this report includes Land Insights' comprehensive research into current and historical land use derived from Land Insight's proprietary National Land Use Atlas (NLUA), environmental risk information and data available from public databases, third party providers, local and state authorities. The report also includes detailed property and soil setting information, hydrogeology, identification of potential pollution and contamination along with ground and natural hazards. The records identified are presented within a 200 to 2000m radius (buffer zone) from the boundaries of the Property searched, depending on the screened constraint. The report is separated and grouped into easy to navigate sections as per Summary below:

	Section 1	PROPERTY SETTING	Sensitive Receptors, Planning Controls, Zoning, Heritage, Soil and Land Information, Geology and Topography
	Section 2	HYDROGEOLOGY	Groundwater Bores and Other Borehole investigations, Groundwater Dependent Ecosystems (GDE), Aquifer and Wetland, Other Hydrogeology information.
	Section 3	ENVIRONMENTAL REGISTERS, LICENCES AND INCIDENTS	Contaminated Land Public Register, Licences, Audits and Orders, Sites Regulated by Other Jurisdictional Body (Former Gaswork sites / PFAS sites, UXO Areas), Historical Landfills, Derelict Mines and National Pollutant Inventory (NPI).
	Section 4	POTENTIALLY CONTAMINATED AREAS	Potentially Contaminating activities (Industries, businesses and activities that may cause contamination), Historical Potentially Contaminating activities and Historical Land Use.
	Section 5	NATURAL HAZARDS	Erosion hazard, Flood hazards, Bushfire prone land and Bushfire history.

This report includes data listed on page 4 (table of contents). All sources of data and definitions are provided in the Product Guide (Attached). For a full list of references, metadata, publications or additional information not provided in this report, please contact orders@landinsight.co.au.

This report does not include information derived from a physical inspection. It is important to note that a site inspection can present information relevant to other risks and hazards that may not be identified by this Report.

Due to the ongoing nature of database development and frequency of updates provided by various state government regulators and data sources, the data displayed within this report is only current from date of production. While every effort is made to ensure the details in your Report are correct, Land Insight cannot guarantee the accuracy or completeness of the information and/or data provided.

This Report, and your use of it, is regulated by Land Insight's Terms and Conditions. For more information, see Land Insight's Product Guide.

Data maintenance schedule

Dataset name	Update frequency	Dataset buffer
Section 1 - Property Setting		
Sensitive Receptors	Quarterly	200m
Planning Controls (<i>Zoning, Planning Instruments, Other planning information</i>)	Quarterly	500m
State and Local Heritage	Quarterly	200m
Commonwealth, National and World Heritage Areas	Annually	200m
Soil Landscape and Land Use Information	Annually	500m
Salinity Hazard	Annually	500m
Radon Level	Annually	500m
State, Local and National Acid Sulfate Soil (ASS)	Annually	500m
Geology	Annually	500m
Naturally Occurring Asbestos Potential	Annually	500m
Topography	As required	500m
Section 2 - Hydrogeology		
Groundwater Aquifers	Annually	2000m
Wetlands	Annually	2000m
Groundwater Bores	Annually	2000m
Drinking Water Catchments	Annually	500m
Groundwater Prohibition/Restricted Use/Exclusion Zones	Annually	500m
Hydrogeologic Units	Annually	500m
Groundwater Dependent Ecosystems	Annually	500m
Other Borehole Locations (<i>Coal Seam Gas, Petroleum Wells, other boreholes</i>)	Annually	500m
Section 3 - Environmental Registers, Licences and Incidents		
Contaminated Land Public Register	Monthly	1000m
Licences, Approvals, Audits, Authorisations & Assessments		
Licences	Monthly	1000m
Surrendered Licences	Monthly	1000m
Clean Up Notices, Penalty Notices and Orders	Monthly	1000m
Permissions	Monthly	1000m
Audits	Monthly	1000m
Authorisations	Monthly	1000m
Sites Regulated by other Jurisdictional Body		
Contaminated Legacy Areas (<i>James Hardies Asbestos, Pasminco Smelter and Uranium sites</i>)	Quarterly	2000m
Defence 3 Year Regional Contamination Investigation Program (RCIP)	Quarterly	2000m
Defence Sites - Current and Former	Ongoing	2000m
Unexploded Ordnance (UXO) Sites - Department of Defence (DoD)	Annually	2000m
Former Gasworks Sites	Ongoing	2000m
PFAS Investigation Sites (<i>EPA PFAS Investigation Program/s, AirServices Australia etc.</i>)	Monthly	2000m
NPI Industrial Facilities	Annually	2000m
Section 4 - Potentially Contaminated Areas		
Potentially Contaminating Activities (PCA) (<i>Petrol Stations, Dry cleaners, Waste sites etc</i>)	Ongoing	500m
Historical Business Directory (<i>Commercial and Trade Directory Data from 1990-2020</i>)	Not required	200m
Section 5 - Natural Hazards		
Bushfire Prone Areas	Bi-annual	500m
Bushfire History	Bi-annual	500m
Erosion Hazard	Bi-annual	500m
Flood Hazard	Ongoing	500m

Index

1.1 SENSITIVE RECEPTORS Map 1.1 (200m Buffer)	3
1.2a PLANNING CONTROLS Map 1.2a (500m Buffer)	3
Zoning	3
1.2b PLANNING OVERLAYS Map 1.2b (500m Buffer)	4
Environmental Planning Instruments	4
Other Planning Information	4
1.3 HERITAGE Map 1.3 (200m Buffer)	5
State and Local Heritage Registers	5
Australian Heritage Database Register	5
1.4a SOIL AND LAND USE INFORMATION Map 1.4a (500m Buffer)	5
Soil Landscape	5
Salinity	6
Radon	6
1.4b ACID SULFATE SOIL Map 1.4b (500m Buffer)	6
State and Local Acid Sulfate Soil Registers	6
National Acid Sulfate Soil Register	6
1.5 GEOLOGY AND TOPOGRAPHY Map 1.5 (500m Buffer)	7
Geology	7
Naturally Occurring Asbestos Potential (NOA)	7
Topography	7
2.1 GDE & HYDROGEOLOGY CONSTRAINTS Map 2.1 (2000m Buffer)	8
Aquifer Type	8
Groundwater Protection Areas	8
Wetlands	8
Groundwater Dependent Ecosystems (GDE) - Aquatic (Surface)	8
Groundwater Dependent Ecosystems (GDE) - Terrestrial (Subsurface)	9
Groundwater Licences (Western Australia)	9
Groundwater Bores	9
Groundwater Bores Driller Lithology Details	10
2.2 GROUNDWATER AND OTHER BORES Map 2.2 (2000m Buffer)	12
Groundwater Restricted Use Zones	12
Groundwater Salinity	12
Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes)	12
3.1 CONTAMINATED LAND PUBLIC REGISTER Map 3.1 (1000m Buffer)	20
Contaminated Sites	20
3.2 LICENCES, APPROVALS & ASSESSMENTS Map 3.2 (500m Buffer)	21
Licences	21
Audits	23
Clean Up, Penalty Notices and Orders	24
3.3a SITES REGULATED BY OTHER JURISDICTIONAL BODY Map 3.3a (2000m Buffer)	26
Contaminated Legacy Areas	26
Defence, Military Sites and UXO Areas	26
Former Gasworks Sites	27
PFAS Sites	27
3.3b OTHER POTENTIAL HAZARD SOURCES Map 3.3b (500m Buffer)	27
Mines and Quarries (current and historical)	27
Landfills (current and historical)	28
National Pollutant Inventory (NPI)	28

4.1 POTENTIALLY CONTAMINATING ACTIVITIES Map 4.1 (200m Buffer)	29
Liquid Fuel Facilities	29
Waste Management Facilities & Recycling Centres.....	29
4.2 HISTORICAL BUSINESS DIRECTORIES (not mapped)	30
5.1 Fire Hazard Map 5.1 (500m Buffer).....	34
Bushfire Prone Areas	34
Bushfire History	34
5.2 Flood Hazard Map 5.2 (500m Buffer)	35
Flood Planning Area	35
Other Flood Studies	35
Flood History	35
5.3 Erosion Hazard Map 5.3 (500m Buffer).....	35
Erosion Hazard.....	35

ATTACHMENTS

Attachment A - Report Maps

Attachment B - Historical Imagery

Land Insight Product Guide and Terms and Conditions



Section 1 Property Setting

1.1 SENSITIVE RECEPTORS

Map 1.1 (200m Buffer)

Sensitive receptor	Type	Distance (m)	Direction
Reedy Creek	Minor Water	0.0	Onsite
Morreau Reserve	Park grounds	32.2	South-west
Blacktown International Sportspark	Sports and Recreation	143.4	North-east

1.2a PLANNING CONTROLS

Map 1.2a (500m Buffer)

Zoning

Zoning	Type	Details	Distance (m)	Direction
SP2	Infrastructure	Blacktown Local Environmental Plan 2015	0.0	Onsite
E4	General Industrial	Blacktown Local Environmental Plan 2015	11.7	North-east
R4	High Density Residential	Blacktown Local Environmental Plan 2015	14.7	South-west
R3	Medium Density Residential	Blacktown Local Environmental Plan 2015	14.7	South-west
R2	Low Density Residential	Blacktown Local Environmental Plan 2015	16.9	South-west
IN1	General Industrial	State Environmental Planning Policy (Industry and Employment) 2021	36.4	West
C3	Environmental Management	Blacktown Local Environmental Plan 2015	41.7	South-west
SP1	Special Activities	Blacktown Local Environmental Plan 2015	104.3	West
RE1	Public Recreation	Blacktown Local Environmental Plan 2015	221.7	West

Zoning	Type	Details	Distance (m)	Direction
MU1	Mixed Use	Blacktown Local Environmental Plan 2015	228.1	South-west
C2	Environmental Conservation	State Environmental Planning Policy (Industry and Employment) 2021	307.9	West
SP2	Infrastructure	Fairfield Local Environmental Plan 2013	391.8	South

1.2b PLANNING OVERLAYS

Map 1.2b (500m Buffer)

Environmental Planning Instruments

Name	Type	Details	Distance (m)	Direction
HORIZONTAL	Obstacle Limitation Surface	State Environmental Planning Policy (Precincts—Western Parkland City) 2021	0.0	Onsite
HORIZONTAL SECTION	Obstacle Limitation Surface	State Environmental Planning Policy (Precincts—Western Parkland City) 2021	0.0	Onsite
Wildlife Buffer Zone, 13 km	Local Provisions	State Environmental Planning Policy (Precincts—Western Parkland City) 2021	0.0	Onsite
Wind Turbine Buffer Zone, 30 km	Local Provisions	State Environmental Planning Policy (Precincts—Western Parkland City) 2021	0.0	Onsite
Buffer Area	Coal Seam Gas Exclusions	State Environmental Planning Policy (Resources and Energy) 2021	0.0	Onsite
Minimum Lot Size (sq m): 1000-1999	Lot Size	Blacktown Local Environmental Plan 2015	11.7	North-east
Land Within a Residential Zone	Coal Seam Gas Exclusions	State Environmental Planning Policy (Resources and Energy) 2021	14.7	South-west
Maximum Building Height (m): 13-14.9	Height of Building	Blacktown Local Environmental Plan 2015	14.7	South-west
Maximum Building Height (m): 10-10.9	Height of Building	Blacktown Local Environmental Plan 2015	14.7	South-west
Design Excellence, Design Excellence	Local Provisions	Blacktown Local Environmental Plan 2015	15.2	South-west
Maximum Building Height (m): 9-9.9	Height of Building	Blacktown Local Environmental Plan 2015	16.9	South-west
Minimum Lot Size (sq m): 450-474	Lot Size	Blacktown Local Environmental Plan 2015	16.9	South-west
Industrial Release Area	Industrial Release Area	State Environmental Planning Policy (Industry and Employment) 2021	36.4	West
Classified Road (SP2)	Land Reservation Acquisition	Blacktown Local Environmental Plan 2015	62.0	South
Proposed Road	Infrastructure	State Environmental Planning Policy (Industry and Employment) 2021	162.5	West
Bulk Water Supply Infrastructure	Bulk Water Supply Infrastructure	State Environmental Planning Policy (Precincts—Western Parkland City) 2021	359.7	South
Classified Road (SP2)	Land Reservation Acquisition	Fairfield Local Environmental Plan 2013	452.6	South

Other Planning Information

Name	Category	Details	Distance (m)	Direction
-	-	-	-	-

1.3 HERITAGE

Map 1.3 (200m Buffer)

State and Local Heritage Registers

Site ID	Site Name	Type	Details	Distance (m)	Direction
01756	Rooty Hill, The	State Heritage Register	Landscape	12.6	West
2	The Rooty Hill	Heritage Register	Item - Landscape. Significance is State.	12.6	West
00345	Government Depot Site (former)	State Heritage Register	Complex / Group	41.7	South-west
A123	Archaeological site - Ruins	Heritage Register	Item - Archaeological. Significance is State.	41.7	South-west
I106	Rooty Hill Railway Station	Heritage Register	Item - General. Significance is Local.	156.5	South-west

Australian Heritage Database Register

Site ID	Site Name	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-	-

Commonwealth Heritage List, National Heritage List and World Heritage Area.

1.4a SOIL AND LAND USE INFORMATION

Map 1.4a (500m Buffer)

Soil Landscape

Code	Name	Soil Group	Description	Distance (m)	Direction
REbt	Blacktown	Residual	Landscape—gently undulating rises on Wianamatta Group shales. Local relief to 30 m, slopes usually >5%. Broad rounded crests and ridges with gently inclined slopes. Cleared Eucalypt woodland and tall open-forest (dry sclerophyll forest). Soils—shallow to moderately deep (>100 cm) hardsetting mottled texture contrast soils, red and brown podzolic soils (Dr3.21, Dr3.31, Db2.11, Db2.21) on crests grading to yellow podzolic soils (Dy2.11, Dy3.11) on lower slopes and in drainage lines. Limitations—localised seasonal waterlogging, localised water erosion hazard, moderately reactive highly plastic subsoil, localised surface movement potential.	0.0	Onsite
ALsc	South Creek	Alluvial	Landscape—floodplains, valley flats and drainage depressions of the channels on the Cumberland Plain. Usually flat with incised channels; mainly cleared. Soils—often very deep layered sediments over bedrock or relict soils. Where pedogenesis has occurred structured plastic clays (Uf6.13) or structured loams (Um6.1) in and immediately adjacent to drainage lines; red and yellow podzolic soils (Dr5.11, Dy2.41, Dr2.21) are most common terraces with small areas of structured grey clays (Gn4.54), leached clay (Uf4.42) and yellow solodic soils (Dy4.42, Dy5.23). Limitations—flood hazard, seasonal waterlogging, localised permanently high watertables, localised water erosion hazard, localised surface movement potential.	0.0	Onsite

Code	Name	Soil Group	Description	Distance (m)	Direction
ERlu	Luddenham	Erosional	Landscape—undulating to rolling low hills on Wianamatta Group shales, often associated with Minchinbury Sandstone. Local relief 50–80 m, slopes 5–20%. Narrow ridges, hillcrests and valleys. Extensively cleared tall open forest (wet sclerophyll forest). Soils—shallow (<100 cm) dark podzolic soils (Dd3.51) or massive earthy clays (Uf6.71) on crests; moderately deep (70–150 cm) red podzolic soils (Dr2.11, Dr2.41, Dr3.11) on upper slopes; moderately deep (<150 cm) yellow podzolic soils (Dy4.22) and prairie soils (Gn3.26) on lower slopes and drainage lines. Limitations—water erosion hazard, localised steep slopes, localised mass movement hazard, localised shallow soils, localised surface movement potential; localised impermeable highly plastic subsoil, moderately reactive.	393.0	South

Salinity

Salinity Hazard	Type	Details	Distance (m)	Direction
Very High	Hydrogeological Landscapes	Western Sydney Hydrogeological Landscapes	0.0	Onsite
High hazard or risk	Australian Dryland Salinity Assessment (1:2,500,000) 2001	High hazard or risk in 2000, 2020, and 2050	0.0	Onsite

Radon

Radon Level (Bq/m ³)	Distance (m)	Direction
5	0.0	Onsite
4	0.0	Onsite

Typical radon levels in Australia are low and the values shown are the average values for each census district. For specific location, factors such as the local geology and house type could lead to different values. (ARPANSA).

1.4b ACID SULFATE SOIL

Map 1.4b (500m Buffer)

State and Local Acid Sulfate Soil Registers

Name	Classification	Description	Distance (m)	Direction
Not identified	-	-	-	-

To ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage, development consent may be required for the carrying out of works within areas and land shown on the Acid Sulfate Soils Map.

National Acid Sulfate Soil Register

Name	Classification	Description	Distance (m)	Direction
Atlas of Australian Acid Sulfate Soils	Extremely low probability of occurrence	Acid sulfate soil generally within upper 1m in wet / riparian areas.	0.0	Onsite

Source: ASRIS Atlas of Australian Sulfate Soils (CSIRO). Acid Sulfate Soils (ASS) are all those soils in which sulfuric acid may be produced, is being produced, or has been produced in amounts that have a lasting effect on main soil characteristics.

1.5 GEOLOGY AND TOPOGRAPHY

Map 1.5 (500m Buffer)

Geology

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
NSW Seamless Geology version 2.2 May2022	Twib	Bringelly Shale	Middle Triassic (base) to Middle Triassic (top)	Wianamatta Group	Shale	Shale, carbonaceous claystone, laminite, lithic sandstone, rare coal.	0.0	Onsite
NSW Seamless Geology version 2.2 May2022	Q_af	Alluvial floodplain deposits	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	0.0	Onsite
NSW Seamless Geology version 2.2 May2022	MZui_v	Ungrouped Mesozoic igneous units - breccia	Jurassic (base) to Cretaceous (top)	Ungrouped Mesozoic igneous units	Undifferentiated breccia	Volcanic breccia, varying amounts of sedimentary breccia, and basalt.	168.1	South-west
NSW Seamless Geology version 2.2 May2022	QH_hf	Anthropogenic deposits - fill on Quaternary deposits	Holocene (base) to Now (top)	Anthropogenic deposits	Anthropogenic material	Land surface raised >1m above natural level by placement of fill on undifferentiated Quaternary deposits over an extensive area.	178.9	East

Naturally Occurring Asbestos Potential (NOA)

Category	On the Property?	Within Buffer?
Not identified	-	-

Topography

Topography (Onsite)	36 - 60 mAHD
---------------------	--------------



Section 2 Hydrogeology



2.1 GDE & HYDROGEOLOGY CONSTRAINTS

Map 2.1 (2000m Buffer)

Aquifer Type

Type	Distance (m)	Direction
Porous, extensive aquifers of low to moderate productivity	0.0	Onsite

Groundwater Protection Areas

Name	Water Plan Area	Distance (m)	Direction
Not identified	-	-	-

Wetlands

Name	Description	Distance (m)	Direction
	Dam	361.8	West
	Quarry	1238.4	South-east

Groundwater Dependent Ecosystems (GDE) - Aquatic (Surface)

Potential	Distance (m)	Direction
Not identified	-	-

Aquatic - Ecosystems that rely on the Surface expression of groundwater.

Groundwater Dependent Ecosystems (GDE) - Terrestrial (Subsurface)

Potential	Distance (m)	Direction
Moderate potential GDE - from national assessment	0.0	Onsite
High potential GDE - from national assessment	75.1	North-east
Low potential GDE - from national assessment	400.8	West

Terrestrial - Ecosystems that rely on the Subsurface expression of groundwater.

Groundwater Licences (Western Australia)

Map ID	WRI number	Allocation (KL)	Address	All Parties	Distance (m)	Direction
Not identified	-	-	-	-	-	-

Groundwater Bores

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
26	GW112687	Monitoring	05/06/2002	6.0	6.0	Null	Null	Null	112.2	North-east
27	GW112688	Monitoring	05/06/2002	6.0	6.0	Null	Null	Null	309.9	North-east
25	GW112686	Monitoring	05/06/2002	0.0	5.5	Null	Null	Null	326.9	North-east
29	GW115527	Null	Null	0.0	342.0	31.8	Null	1.5	441.4	North-east
1	GW104060	Monitoring	22/08/2001	24.6	24.6	Null	Null	Null	577.3	South-east
24	GW112685	Monitoring	05/06/2002	0.0	5.2	Null	Null	Null	600.1	North-east
10	GW115022	Monitoring	01/06/2011	0.0	10.5	2.5	Null	Null	605.3	West
11	GW115023	Monitoring	31/05/2011	9.0	9.0	2.6	Null	Null	605.4	West
12	GW115024	Monitoring	01/06/2011	0.0	10.5	2.6	Null	Null	620.0	West
9	GW115021	Monitoring	30/05/2011	9.0	9.0	2.4	Null	Null	644.2	West
14	GW104061	Monitoring	22/08/2001	24.5	24.5	Null	Null	Null	778.8	South-east
23	GW112684	Monitoring	05/06/2002	6.0	6.0	Null	Null	Null	798.0	North-east
18	GW112682	Monitoring	06/05/2002	5.0	5.0	Null	Null	Null	867.6	North-east
28	GW112689	Monitoring	05/06/2002	2.0	2.0	Null	Null	Null	968.5	North-east
19	GW112683	Monitoring	06/05/2002	4.6	4.6	Null	Null	Null	1021.0	North-east
13	GW018361	Water supply, Manufacturing and industry	01/01/1961	217.9	217.9	Null	Null	Null	1046.4	West
22	GW111850	Monitoring	17/02/2012	8.0	8.0	Null	Null	Null	1205.0	North-east
21	GW111849	Monitoring	17/02/2012	8.0	8.0	Null	Null	Null	1279.4	North-east
4	GW114927	Monitoring	07/08/2015	18.0	18.0	Null	Null	Null	1283.1	West
2	GW114519	Monitoring	04/08/2014	8.0	12.0	Null	Null	Null	1293.5	West

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
5	GW114928	Monitoring	10/10/2011	11.5	11.5	Null	Null	Null	1297.5	West
3	GW114926	Monitoring	07/08/2015	13.5	13.5	Null	Null	Null	1303.6	West
16	GW104062	Monitoring	23/08/2001	24.4	24.4	17.0	Null	0.1	1336.5	South-east
20	GW111848	Monitoring	17/02/2012	11.0	11.0	Null	Null	Null	1582.5	North-east
15	GW104063	Monitoring	23/08/2001	27.4	27.4	Null	Null	Null	1640.9	South-east
7	GW114588	Monitoring	01/06/2011	8.5	8.5	Null	Null	Null	1802.4	East
8	GW114589	Monitoring	01/06/2011	11.0	11.0	Null	Null	Null	1815.2	East
17	21210070	Unknown	Null	Null	Null	Null	Null	Null	1829.4	North-west
6	GW114587	Monitoring	01/06/2011	8.0	8.0	Null	Null	Null	1842.1	East

Note: The use of the symbol "-" or "Null" indicates that no records were found.

Groundwater Bores Driller Lithology Details

Groundwater Bore ID	From Depth - To Depth (m)	Lithology	Distance (m)	Direction
GW112687	Null		112.2	North-east
GW112688	Null		309.9	North-east
GW112686	Null		326.9	North-east
GW115527	Null		441.4	North-east
GW104060	0m-0.3m Topsoil 0.3m-3m Brown clay 3m-5m Brown shale 5m-24.6m Grey shale		577.3	South-east
GW112685	Null		600.1	North-east
GW115022	Null		605.3	West
GW115023	Null		605.4	West
GW115024	Null		620.0	West
GW115021	Null		644.2	West
GW104061	0m-0.5m Fill 0.5m-1m Topsoil 1m-6m Weathered siltstone 6m-24.5m Grey shale		778.8	South-east
GW112684	Null		798.0	North-east
GW112682	Null		867.6	North-east
GW112689	Null		968.5	North-east
GW112683	Null		1021.0	North-east
GW018361	0m-14.02m Topsoil clay 14.02m-16.45m Basalt 16.45m-45.72m Shale grey 45.72m-60.96m Shale light grey 60.96m-61.56m Shale grey 61.56m-64m Basalt 64m-72.54m Shale black 72.54m-92.04m Shale grey 92.04m-99.06m Sandstone 99.06m-137.16m Shale grey 137.16m-150.87m Shale grey 150.87m-194.46m Sandstone white 194.46m-195.68m Shale grey		1046.4	West

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	195.68m-217.62m Sandstone white 217.62m-217.93m Shale grey			
GW111850	Null		1205.0	North-east
GW111849	Null		1279.4	North-east
GW114927	0m-2.7m Silty Clay,Red Brown Mottled L.Plasticity 2.7m-2.9m Silty Clay Grading Into Eathered Shale 2.9m-12m Shale,Weathered Bedrock,Dark Grey,Dry 12m-18m As Above But Hard.		1283.1	West
GW114519	0m-0.3m Silty Clay 0.3m-1m Silty Clay 1m-8m Shale		1293.5	West
GW114928	0m-0.15m Fill 0.15m-0.35m Silty Clay,Light Brown L/M Plasticity 0.35m-3.2m Shale Grey Brown 3.2m-6.3m As Above But Softer 6.3m-9.5m Shale, Dark Grey,Hard, Dry 9.5m-11.5m As Above But Wet.		1297.5	West
GW114926	0m-0.15m Fill 0.15m-1.7m Silty Clay Red Brown, L.Plasticity 1.7m-2.2m Silty Clay Dark Brown 2.2m-3m Shale, Light Brown 3m-4.7m Shale Light Brown Hard 4.7m-6.8m Shale Grey Brown 6.8m-12m Shale, Dark Grey,Dry 12m-13.5m Shale, Dark Grey, Wet		1303.6	West
GW104062	0m-0.5m Fill 0.5m-4m Brown clay 4m-6m Brown shale 6m-11m Grey shale 11m-24.4m Hard shale		1336.5	South-east
GW111848	Null		1582.5	North-east
GW104063	0m-3m Brown clay 3m-5m Grey clay 5m-6m Brown shale 6m-27.4m Grey shale		1640.9	South-east
GW114588	0m-0.5m Fill,Gravel,Coarse,No Odour 0.5m-1.3m Sandy Clay Brown Soft,Dry,M/Grained 1.3m-2.1m Sandy Clay Light Yellow,Grey Mottling 2.1m-2.7m Clay Dark Grey,M/Plasticity 2.7m-4.1m Clay L/Grey,Firm ,Dry, No Odour 4.1m-8.52m Clay,Grey With Orange Mottles,Shale Frags.		1802.4	East
GW114589	0m-0.1m Concrete 0.1m-0.7m Fill.Gravel Coarse,No Odour 0.7m-1.4m Sandy Clay Soft M/Plasticity,Dry 1.4m-2.1m Sandy Clay.Light Yellow,Dry,Moist 2.1m-2.8m Clay Dark Grey,No Odour 2.8m-4m Clay Dark Grey With Orange And Red Mottles 4m-11m Clay With Orange Mottles,Shale Frag,Dry		1815.2	East
21210070	Null		1829.4	North-west
GW114587	0m-0.3m Clayey Silt 0.3m-1.3m Gravelly Sandy Clay Grey And Red 1.3m-5m Clay,Light Brown.Moist 5m-8m Clay Dark Grey Brown ,Moist		1842.1	East

Note: The use of the symbol "-" or "Null" indicates that no records were found.

2.2 GROUNDWATER AND OTHER BORES

Map 2.2 (2000m Buffer)

Groundwater Restricted Use Zones

Name / Number	Address	Site History	Description	Distance (m)	Direction
Not identified	-	-	-	-	-

Groundwater Salinity

Class	Salinity Value	Source	Distance (m)	Direction
Saline (>3000mg/L)	> 3000	Office of Water, New South Wales	0.0	Onsite
No Data	No Data	Sinclair Knight Merz	1781.4	East

Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes)

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
TP6A	Test Pit	SydneyMetroDatabase	Null	Null	2.5	0.0	Onsite
TP5A	Test Pit	SydneyMetroDatabase	Null	Null	2.0	0.0	Onsite
TP6	Test Pit	SydneyMetroDatabase	Null	Null	2.2	0.0	Onsite
TP7	Test Pit	SydneyMetroDatabase	Null	Null	2.9	0.0	Onsite
TP5	Test Pit	SydneyMetroDatabase	Null	Null	2.2	0.0	Onsite
BH23	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	31/01/2013	3.0	39.4	West
BH15	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	01/02/2013	5.0	49.7	West
BH16	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	30/01/2013	15.0	64.2	West
BH17	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	30/01/2013	14.5	66.3	West
BH18	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	25/01/2013	14.9	74.4	West
BH19	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	25/01/2013	12.0	75.5	West
BH20	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	25/01/2013	10.6	81.7	West
BH33	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	13/02/2013	12.6	86.3	West
BH21	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	25/01/2013	13.6	90.0	West
BH32	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	13/02/2013	10.5	94.7	West
TP02	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	07/03/2013	1.5	103.4	West
DCP02	Null	Old Wallgrove Rd, Eastern Creek	RMS	07/03/2013	1.5	103.4	West
BH30	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	24/01/2013	12.0	110.3	West
BH22	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	23/01/2013	3.0	110.6	West
BH25	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	31/01/2013	3.0	110.9	West
DCP03	Null	Old Wallgrove Rd, Eastern Creek	RMS	07/03/2013	1.6	114.0	West

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
TP03	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	07/03/2013	2.3	114.0	West
BH29	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	23/01/2012	12.0	116.1	West
BH28	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	22/01/2013	12.2	117.9	West
BH24	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	23/01/2013	3.0	119.4	West
BH31	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	23/01/2013	15.0	121.7	West
BH27	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	22/01/2013	8.0	128.4	West
BH39	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	22/01/2013	15.1	132.2	West
OW1	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.8	173.9	West
BH14	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	23/01/2013	4.0	179.9	West
OW1TP	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	2.3	232.0	West
BH02-01/08/15	Borehole	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	01/08/2015	7.2	268.9	West
BH37	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	31/01/2013	1.5	270.1	West
TfNSW14	Null	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	23/10/2015	0.0	277.0	South-west
TfNSW13	Null	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	22/10/2015	0.0	277.0	South-west
Null	Null	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	22/10/2015	0.0	277.0	South-west
Null	Null	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	23/10/2015	0.0	277.0	South-west
BH03-02/08/15	Borehole	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	02/08/2015	10.5	277.0	South-west
BH07	Borehole	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	13/08/2015	14.8	288.8	West
BH03	Borehole	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	23/05/2015	12.0	289.6	South-west
BH12	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	23/01/2013	5.0	301.1	West
BH08	Borehole	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	14/08/2015	15.9	302.9	West
BH01-01/08/15	Borehole	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	01/08/2015	11.8	304.0	South-west
BH02	Borehole	Transport Access Projects (TAP) - Harris	TfNSW	24/05/2015	8.8	304.3	South-west

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
		Park, Toongabbie, Rooty Hill Stations					
BH11	Borehole	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	16/08/2015	9.0	305.1	South-west
OW2TP	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	2.4	311.0	West
BH10	Borehole	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	16/08/2015	13.9	311.1	South-west
OW2	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.8	312.8	West
BH01	Borehole	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	24/05/2015	14.0	313.3	West
BH36	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	23/01/2013	3.0	316.5	West
BH09	Borehole	Transport Access Projects (TAP) - Harris Park, Toongabbie, Rooty Hill Stations	TfNSW	15/08/2015	2.0	333.5	South-west
DCP05	Intrusive Investigation	Old Wallgrove Rd, Eastern Creek	RMS	07/03/2013	1.8	357.6	West
TP05	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	07/03/2013	1.8	357.6	West
DCP04	Intrusive Investigation	Old Wallgrove Rd, Eastern Creek	RMS	07/03/2013	1.9	393.7	West
TP04	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	07/03/2013	1.5	393.7	West
DCP04A	Intrusive Investigation	Old Wallgrove Rd, Eastern Creek	RMS	07/03/2013	1.2	398.7	West
BH35	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	01/02/2013	10.9	415.0	West
BH34	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	23/01/2013	8.3	440.9	West
BH11	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	30/01/2013	3.0	457.0	West
OW3	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.8	486.2	West
OW3TP	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.2	487.1	West
PAI_BH4	Borehole	Geological and Groundwater Assessment - Regional Distribution Centre ReadyMix Site: Rooty Hill	NECS	03/03/2003	8.0	506.8	North-east
BH10	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	30/01/2013	3.0	576.1	West
PAI_BH2	Borehole	Geological and Groundwater Assessment - Regional Distribution Centre ReadyMix Site: Rooty Hill	NECS	27/02/2003	8.0	611.8	North-east
OW4	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.7	635.4	West
OW4TP	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	2.3	635.8	West
MSL_93/5	Borehole	Eastern Creek Data 1	Null	Null	0.0	668.0	East

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
PAI_BH3	Borehole	Geological and Groundwater Assessment - Regional Distribution Centre ReadyMix Site: Rooty Hill	NECS	28/02/2003	8.0	763.1	North-east
PAI_BH1	Borehole	Geological and Groundwater Assessment - Regional Distribution Centre ReadyMix Site: Rooty Hill	NECS	28/02/2003	8.0	777.2	North-east
OW5TP	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.2	789.7	West
BH08	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	22/01/2013	0.8	800.1	West
PAI_BH105	Borehole	Geological and Groundwater Assessment - Regional Distribution Centre ReadyMix Site: Rooty Hill	NECS	23/05/2005	3.0	824.5	North
MSL_93/2	Borehole	Eastern Creek Data 1	Null	Null	0.0	829.9	South-east
BH07	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	30/01/2013	2.8	839.7	West
PAI_BH104	Borehole	Geological and Groundwater Assessment - Regional Distribution Centre ReadyMix Site: Rooty Hill	NECS	23/05/2005	3.0	847.7	North
OW5	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.1	859.1	West
PAI_BH103	Borehole	Geological and Groundwater Assessment - Regional Distribution Centre ReadyMix Site: Rooty Hill	NECS	23/05/2005	3.0	871.5	North
MSL_93/1	Borehole	Eastern Creek Data 1	Null	Null	0.0	880.2	East
MSL_80/2	Borehole	Eastern Creek Data 1	Null	Null	0.0	887.1	East
MSL_01/303	Borehole	Eastern Creek Data 1	Null	Null	0.0	897.6	East
PAI_BH102	Borehole	Geological and Groundwater Assessment - Regional Distribution Centre ReadyMix Site: Rooty Hill	NECS	23/05/2005	1.8	906.5	North
MSL_93/7	Borehole	Eastern Creek Data 1	Null	Null	0.0	915.7	East
MSL_80/1	Borehole	Eastern Creek Data 1	Null	Null	0.0	917.7	East
GT0002533	Intrusive Investigation	A collection of NSW geotechnical reports as part of the NSW Government Geotechnical Report Database Project (GGRD).	Drilling, Soil Sample Analysis, Review existing documentation located at Rooty Hill High School : geotechnical invest	01/01/2006	0.0	930.6	West
PAI_BH101	Borehole	Geological and Groundwater Assessment - Regional	NECS	23/05/2005	2.5	932.9	North

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
		Distribution Centre ReadyMix Site: Rooty Hill					
OW6TP	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	0.9	933.6	West
OW6	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.1	935.2	West
COAL_DMROOTHIL	Mineral Exploration	DPI Minerals Borehole Register - Department Of Mineral Resources,	Department Of Mineral Resources,	Null	217.9	939.2	West
028598	Mineral Exploration	ROOTY HILL	Department Of Mineral Resources	Null	217.9	939.3	West
MSL_93/6	Borehole	Eastern Creek Data 1	Null	Null	0.0	941.1	East
MSL_01/317	Borehole	Eastern Creek Data 1	Null	Null	0.0	944.4	East
MSL_00/206	Borehole	Eastern Creek Data 1	Null	Null	0.0	949.5	East
MSL_01/316	Borehole	Eastern Creek Data 1	Null	Null	0.0	986.8	East
ECC_BH701	Borehole	Proposed New Waste Cell No 5 Eastern Creek	Waste Assets Management Corp	16/12/2010	15.0	1003.8	East
ECC_BH703	Borehole	Proposed New Waste Cell No 5 Eastern Creek	Waste Assets Management Corp	16/12/2010	5.0	1026.9	East
MSL_93/3	Borehole	Eastern Creek Data 1	Null	Null	0.0	1028.8	South-east
MSL_93/4	Borehole	Eastern Creek Data 1	Null	Null	0.0	1028.9	South-east
MSL_00/208	Borehole	Eastern Creek Data 1	Null	Null	0.0	1040.9	East
MSL_00/207	Borehole	Eastern Creek Data 1	Null	Null	0.0	1047.2	East
MSL_01/315	Borehole	Eastern Creek Data 1	Null	Null	0.0	1052.6	East
ECC_BH705	Borehole	Proposed New Waste Cell No 5 Eastern Creek	Waste Assets Management Corp	16/12/2010	5.0	1052.8	East
MSL_01/312	Borehole	Eastern Creek Data 1	Null	Null	0.0	1065.0	East
OW7	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.1	1075.9	West
MSL_80/3	Borehole	Eastern Creek Data 1	Null	Null	0.0	1080.1	East
OW7TP	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	2.0	1081.6	West
ECC_BH702	Borehole	Proposed New Waste Cell No 5 Eastern Creek	Waste Assets Management Corp	16/12/2010	15.0	1085.7	East
MSL_01/320	Borehole	Eastern Creek Data 1	Null	Null	0.0	1107.3	East
MSL_01/309	Borehole	Eastern Creek Data 1	Null	Null	0.0	1120.7	East
MSL_01/313	Borehole	Eastern Creek Data 1	Null	Null	0.0	1146.0	East
MSL_01/318	Borehole	Eastern Creek Data 1	Null	Null	0.0	1158.8	East
MSL_01/306	Borehole	Eastern Creek Data 1	Null	Null	0.0	1183.3	East
TP8	Test Pit	SydneyMetroDatabase	Null	Null	1.3	1188.8	North
BH05	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	30/01/2013	5.0	1190.5	West

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
ECC_BH704	Borehole	Proposed New Waste Cell No 5 Eastern Creek	Waste Assets Management Corp	16/12/2010	8.0	1201.7	East
MSL_01/314	Borehole	Eastern Creek Data 1	Null	Null	0.0	1213.1	East
MSL_01/310	Borehole	Eastern Creek Data 1	Null	Null	0.0	1213.3	East
MSL_80/5	Borehole	Eastern Creek Data 1	Null	Null	0.0	1223.4	East
OW8TP	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	2.3	1227.9	West
OW8	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.6	1231.4	West
MSL_01/319	Borehole	Eastern Creek Data 1	Null	Null	0.0	1243.9	East
MSL_01/307	Borehole	Eastern Creek Data 1	Null	Null	0.0	1263.8	East
MSL_00/201	Borehole	Eastern Creek Data 1	Null	Null	0.0	1274.7	East
MSL_01/311	Borehole	Eastern Creek Data 1	Null	Null	0.0	1277.1	East
MSL_80/4	Borehole	Eastern Creek Data 1	Null	Null	0.0	1293.0	East
MSL_00/205	Borehole	Eastern Creek Data 1	Null	Null	0.0	1309.4	East
MSL_01/308	Borehole	Eastern Creek Data 1	Null	Null	0.0	1353.6	East
OW9	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	1.4	1378.1	West
OW9TP	Test Pit	Old Wallgrove Rd, Eastern Creek	RMS	21/03/2011	2.1	1379.1	West
MSL_00/204	Borehole	Eastern Creek Data 1	Null	Null	0.0	1386.5	East
BH6	Borehole	Proposed New Aggregation Node Depot, Roberts Rd, Eastern Creek	Emerson Network PowerPty Ltd	25/10/2011	3.3	1414.5	West
TP4	Test Pit	SydneyMetroDatabase	Null	Null	3.0	1432.5	South
MSL_01/305	Borehole	Eastern Creek Data 1	Null	Null	0.0	1433.4	East
BH5	Borehole	Proposed New Aggregation Node Depot, Roberts Rd, Eastern Creek	Emerson Network PowerPty Ltd	24/10/2011	1.2	1434.4	West
BH3	Borehole	Proposed New Aggregation Node Depot, Roberts Rd, Eastern Creek	Emerson Network PowerPty Ltd	24/10/2011	0.7	1450.6	West
BH02	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	24/01/2013	5.5	1454.5	West
BH4	Borehole	Proposed New Aggregation Node Depot, Roberts Rd, Eastern Creek	Emerson Network PowerPty Ltd	25/10/2011	3.6	1458.3	West
BH2	Borehole	Proposed New Aggregation Node Depot, Roberts Rd, Eastern Creek	Emerson Network PowerPty Ltd	24/10/2011	3.6	1464.5	West
MSL_01/301	Borehole	Eastern Creek Data 1	Null	Null	0.0	1475.5	East
BH1	Borehole	Proposed New Aggregation Node Depot, Roberts Rd, Eastern Creek	Emerson Network PowerPty Ltd	24/10/2011	0.8	1490.4	West

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
BH01 / MW01	Borehole	Great Western Distribution Centre	Great Western Distribution Centre	23/03/2012	6.0	1505.2	East
BH02 / MW02	Borehole	Great Western Distribution Centre	Great Western Distribution Centre	23/03/2012	6.0	1506.0	East
BH03 / MW03	Borehole	Great Western Distribution Centre	Great Western Distribution Centre	23/03/2012	6.0	1514.8	East
BH01	Borehole	Old Wallgrove Rd, Eastern Creek	RMS	13/02/2013	4.5	1515.3	West
RMS01	Null	Old Walgrove Road	RMS	08/05/2014	0.0	1515.3	West
Null	Null	Old Walgrove Road	RMS	08/05/2014	0.0	1515.3	West
MSL_01/304	Borehole	Eastern Creek Data 1	Null	Null	0.0	1516.2	East
MSL_01/302	Borehole	Eastern Creek Data 1	Null	Null	0.0	1524.9	East
MSL_00/202	Borehole	Eastern Creek Data 1	Null	Null	0.0	1583.3	East
GT0000538	Intrusive Investigation	A collection of NSW geotechnical reports as part of the NSW Government Geotechnical Report Database Project (GGRD).	Drilling, Soil Sample Analysis, Standard Penetration Test (SPT) located at Chifley College Senior Campus : proposed d	01/01/2012	0.0	1674.5	West
GT0000537	Intrusive Investigation	A collection of NSW geotechnical reports as part of the NSW Government Geotechnical Report Database Project (GGRD).	Site Inspection, Review existing documentation located at Chifley College Senior Campus : preliminary site contaminat	01/01/2000	0.0	1674.5	West
GT0000536	Intrusive Investigation	A collection of NSW geotechnical reports as part of the NSW Government Geotechnical Report Database Project (GGRD).	Test Pits, Soil Sample Analysis located at Chifley College Senior Campus : geotechnical investigation / Peter Shun, G	01/01/2000	0.0	1674.7	West
GT0003177	Intrusive Investigation	A collection of NSW geotechnical reports as part of the NSW Government Geotechnical Report Database Project (GGRD).	Drilling, Standard Penetration Test (SPT), Soil Sample Analysis, Core sample analysis located at Western Sydney Inter	01/01/2010	0.0	1708.5	East
TP2	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.8	1731.1	South-east
TP3	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.1	1732.7	South-east
TP4	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.2	1743.1	South-east
TP9	Test Pit	Characterisation of Soil Stockpile -	Veolia Environmental Services	29/07/2011	4.1	1758.5	South-east

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
		Horsley Park Landfill Site					
TP10	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.2	1762.3	South-east
TP5	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.3	1765.3	South-east
TP8	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.1	1769.9	South-east
TP6	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.3	1770.5	South-east
TP7	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.7	1779.1	South-east
TP12	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.5	1788.7	South-east
TP11	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.1	1789.7	South-east
TP1	Test Pit	Characterisation of Soil Stockpile - Horsley Park Landfill Site	Veolia Environmental Services	29/07/2011	4.8	1791.2	South-east
MSL_00/203	Borehole	Eastern Creek Data 1	Null	Null	0.0	1820.0	East
TP9	Test Pit	SydneyMetroDatabase	Null	Null	2.6	1978.5	North
GT0002796	Intrusive Investigation	A collection of NSW geotechnical reports as part of the NSW Government Geotechnical Report Database Project (GGRD).	Test Pits, Soil Sample Analysis located at Sydney's Eastern Creek raceway : site investigation - Geotechnical Engineer	01/01/1995	0.0	1995.3	East

Note: The use of the symbol "-" or "Null" indicates that no records were found.



Section 3 Environmental Registers, Licences and Incidents



3.1 CONTAMINATED LAND PUBLIC REGISTER

Map 3.1 (1000m Buffer)

Contaminated Sites

Register Type	Site Name	Address	Description	Details	Distance (m)	Direction
Sites Notified as Contaminated	Infrabuild NSW Pty Ltd (formerly OneSteel NSW Pty Ltd)	22 Kellogg ROAD ROOTY HILL	Other Industry	Regulation under CLM Act not required	18.0	North-east
Sites Notified as Contaminated	7-Eleven (former Mobil) Service Station	815 Great Western HIGHWAY MINCHINBURY	Service Station	Regulation under CLM Act not required	582.7	West
Sites Notified as Contaminated	7-Eleven (former Mobil) Service Station	106 Rooty Hill Road South ROAD ROOTY HILL	Service Station	Regulation under CLM Act not required	643.0	South-west

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

Table 3.1.1 Contaminated Land Public Register		
State	Regulatory Body	Information included in this search (by state)
ACT	EPA (Environment Protection Authority)	Contaminated Land Search Register of Contaminated Sites
NSW	EPA (Environment Protection Authority)	Sites Notified as Contaminated Records of Notices
NT	EPA (Environment Protection Authority)	Contaminated Land Audit Pollution Abatement Notice
QLD	DES (Department of Environment and Science)	Contaminated Land Search (Environmental Management and Contaminated Land Registers)

Table 3.1.1 Contaminated Land Public Register		
SA	EPA (Environment Protection Authority)	Site Contamination Index
TAS	EPA (Environment Protection Authority)	Regulated Sites and Premises Lutana and Parts of Hobarts Eastern Shore
VIC	EPA (Environment Protection Authority)	Priority Sites Register Pollution Abatement Notice
WA	DWER (Department of Water and Environmental Regulation)	Contaminated Sites Database

This search contains information retrieved from the relevant state authority, agency/department, or government authority that notifies and identifies contaminated land. The list only contains contaminated sites that the regulatory body is aware of or that have been notified by owners or occupiers as contaminated land. The sites are recorded on the register at various stages of the assessment and/or remediation process. If a site is not on the list, it does not necessarily mean the site is not contaminated.

3.2 LICENCES, APPROVALS & ASSESSMENTS

Map 3.2 (500m Buffer)

Licences

Licence N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direct
12517	Issued	SUEZ RECYCLING & RECOVERY PTY LTD	EASTERN CREEK ORRF	WALLGROVE ROAD, EASTERN CREEK NSW	Non-thermal treatment of general waste	0.0	Onsite
12517	Issued	SUEZ RECYCLING & RECOVERY PTY LTD	EASTERN CREEK ORRF	WALLGROVE ROAD, EASTERN CREEK NSW	Composting	0.0	Onsite
5272	Issued	WASTE ASSETS MANAGEMENT CORPORATION	EASTERN CREEK WASTE MANAGEMENT CENTRE	WALLGROVE ROAD, EASTERN CREEK NSW	Waste disposal by application to land	0.0	Onsite
5272	Issued	WASTE ASSETS MANAGEMENT CORPORATION	EASTERN CREEK WASTE MANAGEMENT CENTRE	WALLGROVE ROAD, EASTERN CREEK NSW	Non-thermal treatment of general waste	0.0	Onsite
6125	Issued	INFRABUILD NSW PTY LTD	ONESTEEL SYDNEY STEEL MILL	22 KELLOGG ROAD, ROOTY HILL NSW	Metal processing	18.1	North-east
6125	Issued	INFRABUILD NSW PTY LTD	ONESTEEL SYDNEY STEEL MILL	22 KELLOGG ROAD, ROOTY HILL NSW	Iron or steel production (scrap metal)	18.1	North-east
6125	Issued	INFRABUILD NSW PTY LTD	ONESTEEL SYDNEY STEEL MILL	22 KELLOGG ROAD, ROOTY HILL NSW	General chemicals storage	18.1	North-east
6125	Issued	INFRABUILD NSW PTY LTD	ONESTEEL SYDNEY STEEL MILL	22 KELLOGG ROAD, ROOTY HILL NSW	Crushing, grinding or separating	18.1	North-east
6125	Issued	INFRABUILD NSW PTY LTD	ONESTEEL SYDNEY STEEL MILL	22 KELLOGG ROAD, ROOTY HILL NSW	Chemical storage waste generation	18.1	North-east
6125	Issued	INFRABUILD NSW PTY LTD	ONESTEEL SYDNEY STEEL MILL	22 KELLOGG ROAD, ROOTY HILL NSW	Metal waste generation	18.1	North-east
6125	Issued	INFRABUILD NSW PTY LTD	ONESTEEL SYDNEY STEEL MILL	22 KELLOGG ROAD, ROOTY HILL NSW	Non-thermal treatment of hazardous and other waste	18.1	North-east
11798	Issued	EASTERN CREEK OPERATIONS PTY LIMITED	UR-3R FACILITY	WALLGROVE ROAD, EASTERN CREEK NSW	Composting	61.9	South
11798	Issued	EASTERN CREEK OPERATIONS PTY LIMITED	UR-3R FACILITY	WALLGROVE ROAD, EASTERN CREEK NSW	Non-thermal treatment of general waste	61.9	South

Licence N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direct
11798	Issued	EASTERN CREEK OPERATIONS PTY LIMITED	UR-3R FACILITY	WALLGROVE ROAD, EASTERN CREEK NSW	Recovery of general waste	61.9	South
11798	Issued	EASTERN CREEK OPERATIONS PTY LIMITED	UR-3R FACILITY	WALLGROVE ROAD, EASTERN CREEK NSW	Waste storage - other types of waste	61.9	South
10042	Issued	EDL LFG (NSW) PTY LTD	EASTERN CREEK WASTE MANAGEMENT CENTRE	WALLGROVE ROAD, EASTERN CREEK NSW	Generation of electrical power from gas	104.0	East
11509	Surrendered	INTERNATIONAL THEME PARK PTY LTD	INTERNATIONAL THEME PARK PTY LTD	INTERNATIONAL THEME PARK PTY LTD	Helicopter-related activity	104.3	West
12454	Issued	ALUMINIUM SPECIALTIES GROUP PTY. LTD.	ALUMINIUM SPECIALTIES GROUP PTY LIMITED	3 ALSPEC PLACE, EASTERN CREEK NSW	Metal waste generation	104.9	West
20672	Surrendered	HOLCIM (AUSTRALIA) PTY LTD	HOLCIM (AUSTRALIA) PTY LTD	21 Kellogg Road, ROOTY HILL, NSW 2766	Land-based extractive activity	271.6	North-east
546	Issued	THE AUSTRAL BRICK CO PTY LTD	AUSTRAL BRICK, PLANTS 1, 2 & 3.	738-780 WALLGROVE ROAD, HORSLEY PARK NSW	Mining for minerals	461.9	South
546	Issued	THE AUSTRAL BRICK CO PTY LTD	AUSTRAL BRICK, PLANTS 1, 2 & 3.	738-780 WALLGROVE ROAD, HORSLEY PARK NSW	Land-based extractive activity	461.9	South
546	Issued	THE AUSTRAL BRICK CO PTY LTD	AUSTRAL BRICK, PLANTS 1, 2 & 3.	738-780 WALLGROVE ROAD, HORSLEY PARK NSW	Crushing, grinding or separating	461.9	South
546	Issued	THE AUSTRAL BRICK CO PTY LTD	AUSTRAL BRICK, PLANTS 1, 2 & 3.	738-780 WALLGROVE ROAD, HORSLEY PARK NSW	Concrete works	461.9	South
546	Issued	THE AUSTRAL BRICK CO PTY LTD	AUSTRAL BRICK, PLANTS 1, 2 & 3.	738-780 WALLGROVE ROAD, HORSLEY PARK NSW	Ceramics production	461.9	South
546	Issued	THE AUSTRAL BRICK CO PTY LTD	AUSTRAL BRICK, PLANTS 1, 2 & 3.	738-780 WALLGROVE ROAD, HORSLEY PARK NSW	Ceramic waste generation	461.9	South
11584	Issued	VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD	HORSLEY PARK WASTE MANAGEMENT FACILITY	Wallgrove Road, HORSLEY PARK NSW	Composting	767.9	South
11584	Issued	VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD	HORSLEY PARK WASTE MANAGEMENT FACILITY	Wallgrove Road, HORSLEY PARK NSW	Non-thermal treatment of general waste	767.9	South
11584	Issued	VEOLIA ENVIRONMENTAL SERVICES	HORSLEY PARK WASTE MANAGEMENT FACILITY	Wallgrove Road, HORSLEY PARK NSW	Waste disposal by application to land	767.9	South

Licence N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direct
		(AUSTRALIA) PTY LTD					
20339	Issued	VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD	HORSLEY PARK RESOURCE RECOVERY FACILITY	Wallgrove Road, HORSLEY PARK NSW	Recovery of general waste	767.9	South
20339	Issued	VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD	HORSLEY PARK RESOURCE RECOVERY FACILITY	Wallgrove Road, HORSLEY PARK NSW	Waste storage - other types of waste	767.9	South
1310	Issued	HOLCIM (AUSTRALIA) PTY LTD	HUMES BLACKTOWN	604 WOODSTOCK AVENUE, ROOTY HILL NSW	Concrete works	810.0	North
12569	Issued	LMS ENERGY PTY LTD	Eastern Creek 2 Gas Utilisation Facility	Ferrers Road, EASTERN CREEK NSW	Generation of electrical power otherwise than from coal, diesel or gas	830.4	East
3511	Issued	MICHAEL MIZZI	GEORGE BORG PIGGERY	66-104 BURLEY ROAD, HORSLEY PARK NSW	Pig accommodation	966.7	South
13421	Issued	UGL REGIONAL LINX PTY LTD	Country Regional Network	COUNTRY REGIONAL NETWORK, ORANGE, NSW, 2800	Railway infrastructure operations	Not mapped	Not mapped
11875	Surrendered	ACCIONA INFRASTRUCTURE PROJECTS AUSTRALIA PTY LTD	WESTLINK M7 FROM CONNECTION WITH M5 AT CAMDEN VALLEY WAY TO CONNECTION WITH M2 AT BAULKHAM HILLS, BLACKTOWN, NSW, 2148	FROM CONNECTION WITH M5 AT CAMDEN VALLEY WAY TO CONNECTION WITH M2 AT BAULKHAM HILLS, BLACKTOWN, NSW 2148	Crushing, grinding or separating Road construction Concrete works	Not mapped	Not mapped

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

* Not mapped - Licences that are applied to larger areas and/or without specific definition; such as waterways, forests etc will still be identified in the search results but will not be show within the map.

Audits

N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direction
Not identified	-	-	-	-	-	-	-

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

Clean Up, Penalty Notices and Orders

Nº	Type	Licence holder	Location Name	Premise Address	Details	Dist. (m)*	Direction
1512765	Penalty Notice	SUEZ RECYCLING & RECOVERY PTY LTD	EASTERN CREEK ORRF	WALLGROVE ROAD, KINGSGROVE DC	Contravene any condition of licence - not noise - corporation	0.0	Onsite
1522267	Penalty Notice	SUEZ RECYCLING & RECOVERY PTY LTD	EASTERN CREEK ORRF	WALLGROVE ROAD, KINGSGROVE DC	Contravene any condition of licence - not noise - corporation	0.0	Onsite
1505903	Penalty Notice	WASTE ASSETS MANAGEMENT CORPORATION	EASTERN CREEK WASTE MANAGEMENT CENTRE	WALLGROVE ROAD, KINGSGROVE DC	Contravene any condition of licence - not noise - corporation	0.0	Onsite
1539697	Penalty Notice	SUEZ RECYCLING & RECOVERY PTY LTD	EASTERN CREEK ORRF	WALLGROVE ROAD, KINGSGROVE DC	Contravene condition of licence - Corporation	0.0	Onsite
1507601	Penalty Notice	WASTE ASSETS MANAGEMENT CORPORATION	EASTERN CREEK WASTE MANAGEMENT CENTRE	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	Contravene section by emission of odours - Corporation	0.0	Onsite
1115192	Clean Up Notice	WASTE ASSETS MANAGEMENT CORPORATION	EASTERN CREEK WASTE MANAGEMENT CENTRE	WALLGROVE ROAD, EASTERN CREEK, NSW, 2766	s.91 Clean Up Notice	0.0	Onsite
1533413	Clean Up Notice	SUEZ RECYCLING & RECOVERY PTY LTD	EASTERN CREEK ORRF	WALLGROVE ROAD,	s.91 Clean Up Notice	0.0	Onsite
3085772297	Penalty Notice	INFRABUILD NSW PTY LTD	ONESTEEL SYDNEY STEEL MILL	22 Kellogg ROAD ROOTY HILL	Contravene any condition of licence - not noise - corporation	18.1	North-east
1507607	Penalty Notice	EASTERN CREEK OPERATIONS PTY LIMITED	UR-3R FACILITY	WALLGROVE ROAD, HORSLEY PARK	Contravene section by emission of odours - Corporation	61.9	South
1555616	Penalty Notice	EASTERN CREEK OPERATIONS PTY LIMITED	UR-3R FACILITY	WALLGROVE ROAD, HORSLEY PARK	Contravene section by emission of odours - Corporation	61.9	South
1046507	Clean Up Notice	EASTERN CREEK OPERATIONS PTY LIMITED	UR-3R FACILITY	WALLGROVE ROAD, EASTERN CREEK, NSW, 2766	s.91 Clean Up Notice	61.9	South
1511275	Clean Up Notice	INVOCARE AUSTRALIA PTY LIMITED	Pinegrove Memorial Park	28 Walgrove Rd,	s.91 Clean Up Notice	104.3	West
1539972	Penalty Notice	VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD	HORSLEY PARK WASTE MANAGEMENT FACILITY	Wallgrove Road, GRANVILLE	Contravene section by emission of odours - Corporation	767.9	South

Nº	Type	Licence holder	Location Name	Premise Address	Details	Dist. (m)*	Direction
1607359	Clean Up Notice	VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD	HORSLEY PARK WASTE MANAGEMENT FACILITY	Wallgrove Road, HORSLEY PARK, NSW, 2175	s.91 Clean Up Notice	767.9	South
1518534	Clean Up Notice	MICHAEL ANGELO MIZZI	GEORGE BORG PIGGERY	66-104 BURLEY ROAD,	s.91 Clean Up Notice	986.0	South-west
3173530351	Penalty Notice	HAMED KAAB	763-783 WALLGROVE ROAD, HORSLEY PARK, NSW, 2175	763-783 WALLGROVE ROAD, HORSLEY PARK, NSW, 2175	Not state name/address when requested by authorised officer - Individual	993.3	South

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

Contaminated Legacy Areas

Site Name	Description	Distance (m)	Direction
Not identified	-	-	-

Includes known contaminated areas such as James Hardies Asbestos waste legacy areas, Pasminco Smelter and Uranium processing site.

Defence, Military Sites and UXO Areas

Site name	Type*	Details	Distance (m)	Direction
Wallgrove Defence Base	Defence Area / Military Sites	During World War 2, the Wallgrove Army Camp was used for training soldiers before they were sent overseas. The camp housed around 5000 troops. A number of units trained, or formed their headquarters at Wallgrove during WWII. In July 1940, the 2/18th Australian Infantry Battalion, 2/19th Australian Infantry Battalion and 2/20th Australian Infantry Battalion, established their headquarters at Wallgrove. After World War 2, the Wallgrove Army Camp was later used as a migrant hostel. Some of the original camp site was used by the Australian Defence Force until the 1990s. (Blacktown City Council)	0.0	Onsite
Wallgrove	Unexploded Ordnance (UXO)	Potential presence of UXO: Slight potential - This site was used as a Grenade Range during WWII. (Source: Defence's National Unexploded Ordnance Program (NUXOP))	171.0	West
Wallgrove Aerodrome	Defence Area / Military Sites	Wallgrove Aerodrome was a RAAF training site and as an overshoot runway for the nearby Schofields airbase during World War II. The aerodrome was built in 1942 and the runway was 5000ft (1524m) long and 150ft (45.72m) wide was constructed of compressed gravel with aircraft hides and taxi ways to the south. The runway extended on the southern side of Bungaribee Creek, in a southwesterly direction from close to the junction of Eastern and Bungaribee Creeks, crossing Doonside Road and ending near McCormack Street (Arndell Park). After World War II the aerodrome was closed in 1946 and reverted to farmland. A number of former revetments are still in existence and the runway can still be located. An industrial area has been built over the southern end of the aerodrome. (Source: https://en.wikipedia.org)	236.3	East
Former Prospect Rifle Range	Defence Area / Military Sites	This site was used as a WWII rifle range (Small Arms Ammunition (SAA). No evidence has been identified that it was used for any potential UXO producing activities. Operating from ~1939-1986 (Source: Department of Defence Australia)	1810.5	East

Site name	Type*	Details	Distance (m)	Direction
Prospect	Unexploded Ordnance (UXO)	Potential presence of UXO: Other - This site was used as a WWII rifle range (Small Arms Ammunition (SAA). No evidence has been identified that it was used for any potential UXO producing activities. (Source: Defence's National Unexploded Ordnance Program (NUXOP))	1813.5	East

*RCIP (Regional Contamination Investigation Program). UXO (Unexploded Ordnance Areas)

Former Gasworks Sites

Site name	Description	Distance (m)	Direction
Not identified	-	-	-

PFAS Sites

Site name	Type	Details	Distance (m) *	Direction
Mount Druitt Fire Station	Potential historical use of PFAS.	Fire station built in 1970. Potential historical use of PFAS.	1564.6	West

3.3b OTHER POTENTIAL HAZARD SOURCES

Map 3.3b (500m Buffer)

Mines and Quarries (current and historical)

Site name	Description	Status	Distance (m)	Direction
Eastern Creek Waste Depot	Clays - Bringelly Shale Site operated as waste depot by Waste Recycling & Processing Service of NSW. Clay/shale is extracted to create void space and some of the excavated materials (mainly light-firing) are sold to brick manufacturers. Estimated pale firing resource of abt 2Mt. (The Geological Survey of NSW, Department of Primary Industries)	Current	0.0	Onsite
Wallgrove	Major commodities: clay/shale - structural - Bringelly Shale Area bound by Reedy Creek, Wallgrove Road & Prospect water supply pipe lines was; investigated in 1969. Area has 2 pits for clay extraction for pipe manufacture by Punchbowl Brick & Pipe (late 1960s & early 1970s). Rehabilitated. Observed through analysis of historical aerial imagery until early 2000's.(source: various, Land Insight Research)	Former	85.5	West
Austral Bricks (Plant 1, Plant 2)	Brick manufacturer. Major commodities: clay/shale - structural - Austral operate 3 sites in the Horsley Park-Wallgrove area (SITES 1147, 1148 & 1145). All production from all Austral Wallgrove sites recorded herein. Operated since about 1961. Two pits (plants 1 & 2) (The Geological Survey of NSW)	Current	461.9	South

Landfills (current and historical)

Site name	Description	Status	Distance (m)	Direction
Waste Management Centre	Distinct land anomalies bearing resemblance to landfilling and/or other forms of land disturbance and disposal. Analysis of historical aerial imagery captured between early 1990's and ~2005. (Land Insight research)	Former	0.0	Onsite
Eastern Creek Waste Management Centre	Eastern Creek Resource Recovery Park in Sydney's west is home to two innovative waste processing facilities: an ORRF, diverting organics from landfill and converting them into valuable resources for healthy plant growth; and an ARRT, which uses advanced specialist technologies to recover and recycle more from waste. Together, these facilities lead the change from traditional waste disposal to economically sustainable resource recovery solutions. (Veolia Jun 2023)	Current	0.0	Onsite

National Pollutant Inventory (NPI)

Facility name	Address	Primary ANZSIC Class	Latest report	Distance (m)	Direction
Eastern Creek Waste Management Centre (closed landfill)	Wallgrove Road, Eastern Creek	Solid waste landfill - closed 2002	2011/2012	0.0	Onsite
Eastern Creek Waste Management Centre	Wallgrove Road, Eastern Creek	Solid waste landfilling.	2017/2018	0.0	Onsite
Eastern Creek	Eastern Creek Waste Management Centre Wallgrove Road, Eastern Creek	Electricity generation n.e.c.	2020/2021	15.1	East
InfraBuild Sydney Steel Mill	22 Kellogg Road, Rooty Hill	Making steel using an electric arc furnace and continuous caster. Manufacturer of structural steel.	2020/2021	16.7	North-east
UR-3R facility	Wallgrove Road, Eastern Creek	Waste treatment - recycling of household waste	2009/2010	63.3	South
Coca-Cola Amatil Eastern Creek	9 Rousell Rd, Eastern Creek	Warehousing and distribution of beverages. Production of PET preforms and HDPE closures	2019/2020	259.7	West
Austral Brick Plants 1,2,3 Horsley Park	738-780 Wallgrove Road, Horsley Park	Mining, crushing, extrusion, drying, firing, packaging (brick making).	2020/2021	463.2	South



Section 4 Potentially Contaminated Areas



4.1 POTENTIALLY CONTAMINATING ACTIVITIES

Map 4.1 (200m Buffer)

Liquid Fuel Facilities

Site name	Category	Description	Address	Status*	Dist. (m)*	Direction
Premiair Fuels Pty Ltd	Petrol Stations and Fuel Terminals	Petrol Station	26 Clay Pl, Eastern Creek NSW 2766	Current	37.6	West
bp Truckstop Eastern Creek	Petrol Stations and Fuel Terminals	Petrol Station	1 Wallgrove Rd, Eastern Creek NSW 2766	Current	120.6	West

Waste Management Facilities & Recycling Centres

Site name	Category	Description	Address	Status*	Dist. (m)*	Direction
Eastern Creek Waste Management Centre	Waste and Recycling Facilities	Waste management service	Wallgrove Rd, Eastern Creek NSW 2766	Current	15.3	East

***Status:** Information is current as when this report was created.

The operational status of the business is determined using the available data sources and does not indicate real-time conditions at the site.

Current: business is operating on the day this report was issued.

Former: business that have been closed or discontinued within 2 years from the date of this report.

Liquid Fuel Facilities Datasets, representing the spatial locations of liquid fuel depots, refineries, terminals and petrol stations present in the Australian Government National Liquid Fuel Facilities Dataset and Petrol stations identified by Land Insights. Waste Management Facilities, representing the spatial locations of reprocessing facilities, transfer stations and landfills present in the Australian Government National Waste Management Facilities Dataset and Waste/Recycling facilities identified by Land Insights.

A more comprehensive list of all Potentially Contaminating Activities is available in the Due Diligence Insight report.

4.2 HISTORICAL BUSINESS DIRECTORIES

(not mapped)

YEAR	Activity	Name	Address	Positional accuracy	Distance (m)	Direction
1970	Earth Moving Equipment	East A A & M	93 Eastern Road, Rooty Hill, NSW	Address	42.9	North-east
2010	Florists - Products & Supplies	Linton Fresh Flowers	Warehouse 102A Wallgrove Rd HORSLEY PARK 2175 NSW	Address	58.6	West
2005	Florists--W'sale	Linton Fresh Flowers	Warehouse 102a Wallgrove Rd, HORSLEY PARK, NSW, 2175	Address	59.4	West
1980	Florists - W'sale	Glansante Anthony	102 Wallgrove Road, Horsley Park, NSW	Address	59.4	West
1970	Florists-W'sale	Glansante Anthony	102 Wallgrove Road, Horsley Park, NSW	Address	59.4	West
2015	Tyre Retailers	Bridgestone Select	2 Clay Pl Eastern Creek NSW 2766	Address	82.1	West
2010	Tyre Retailers	Bridgestone Select	2 Clay Pl EASTERN CREEK 2766 NSW	Address	89.3	West
2010	Welding	Micks Mobile Welding	27 Mavis St ROOTY HILL 2766 NSW	Address	106.8	South-west
2005	Welding Services	Micks Mobile Welding	27 Mavis St, ROOTY HILL, NSW, 2766	Address	106.8	South-west
2015	Welding	Micks Mobile Welding	27 Mavis St Rooty Hill NSW 2766	Address	107.6	South-west
2015	Stone Masons Stonework & Masonry	Bekic Stone Art	Lot 2 Woolgrove Rd Eastern Creek NSW 2766	Address	165.4	West
2015	Glass Processing & Manufacturing	C R Laurence	9 Shale Pl Eastern Creek NSW 2766	Address	167.3	West
1980	Nurserymen - W'sale	Cecil Park Orchids	1 Wallgrove Road, Cecil Park, NSW	Address	172.6	West
2015	Plastic Products M/Factrs & W/Salers	Australian Sheet Traders	2/ 5 Clay Pl Eastern Creek NSW 2766	Address	187.8	West
2010	Plastic Products M/factrs & W/salers	Australian Sheet Traders	2/ 5 Clay Pl EASTERN CREEK 2766 NSW	Address	191.1	West
1965	Publishers	John Hinton Pty Ltd	76, CArcher, NSW	Address	191.4	West
2010	Car Replacement Parts	Boyded Distribution	5 Wonderland Dr EASTERN CREEK 2766 NSW	Address	193.9	West
2010	Sheet Metal Workers	Emolior Industries Pty Ltd	Unit 2 2 Shale Pl EASTERN CREEK 2766 NSW	Address	196.0	West
1970	Bitumen Products	Pioneer Asphalts Pty Ltd	Great Western Highway, Wallgrove, NSW	Street		West
1990	Cemeteries	Pine Grove Memorial Park	Cnr. Great Western Highway & Wallgrove Road, Eastern Creek, NSW	Street		West
1990	Cremation	Pine Grove Memorial Park	Cnr Great Western Highway & Wallgrove Road, Eastern Creek, NSW	Street		West
2005	Cemeteries; Cremation; Funeral Directors	Pine Grove Memorial Park	Cnr Great Western Hwy & Wallgrove Rd, EASTERN CREEK, NSW, 2766	Street		West

YEAR	Activity	Name	Address	Positional accuracy	Distance (m)	Direction
1970	Asphalt Mfrs.	Pioneer Asphalts Pty Ltd	Great Western Highway, Wallgrove,NSW	Street		West
1970	Road Contractors	Pioneer Asphalts Pty Ltd	Great Western Highway, Wallgrove,NSW	Street		West
1980	Paving - Asphalt &/or Bitumen	Pioneer Asphalts Pty Ltd	Great Western Highway, Wallgrove,NSW	Street		West
1980	Paving - Asphalt &/or Bitumen	Pioneer Asphalts Pty Ltd	Great Western Highway, Wallgrove,NSW	Street		West
1990	Cremation	Pine Grove Memorial Park	Cnr. Great Western Highway & Wallgrove Road, Eastern Creek,NSW	Street		West
1980	Sand, Soil & Gravel Supplies	Pioneer Concrete (NSW) Pty Ltd - Wallgrove Quarry	Great Western Highway, Wallgrove,NSW	Street		West
2005	Excavating & Earth Moving Contractors	Aerolift Industries Pty Ltd	Wallgrove Rd, EASTERN CREEK,NSW,2766	Street		West
1980	Dairies	Reen John F.	Dog Kennel Road, Eastern Creek,NSW	Street		West
1970	Dairies	Shamrock Dairy	Dog Kennel Road, Eastern Creek,NSW	Street		West
1970	Dairies	Reen John F	Dog Kennel Road, Eastern Creek,NSW	Street		West
2005	Furniture Mfrs' Supplies; Kitchens, Renovations & Equipment; Laminates & Laminated Panels; Cabinet Makers' Supplies	Nover & Co Pty Ltd, Eastern creek	Western Sydney, EASTERN CREEK, NSW,2766	Street		West
1990	Waste Reduction & Disposal Services	Waste Management Authority Of NSW	Wallgrove Road, Eastern Creek,NSW	Street		West
2010	Waste Reduction & Disposal Equipment & Machinery	Waste Service Nsw	Wallgrove Rd EASTERN CREEK 2766 NSW	Street		West
1980	Graziers	Morris B N	Reedy Creek, The Lagoon,NSW	Street		West
2010	Waste Reduction & Disposal Equipment & Machinery	Waste & Recycling Centre	Wallgrove Rd EASTERN CREEK 2766 NSW	Street		West
2015	Waste Reduction & Disposal Equipment & Machinery	Waste & Recycling Centre	Wallgrove Rd Eastern Creek NSW 2766	Street		West
2015	Recyclers	Waste Service NSW	Wallgrove Rd Eastern Creek NSW 2766	Street		West
1980	Quarries	Pioneer Concrete (NSW) Pty Ltd - Wallgrove Quarry	Great Western Highway, Wallgrove,NSW	Street		West

YEAR	Activity	Name	Address	Positional accuracy	Distance (m)	Direction
1980	General Stores	Shuttleworth R N	Belmore Road, Eastern Creek, NSW	Street		West
2005	Go-Kart Hire; Function Centres & Organisers; Event Management; Sports Promoters & Consultants	Eastern Creek International Karting Raceway	EASTERN CREEK, NSW, 2766	Suburb		West
2005	Furniture Removals & Storage	Rooty Hill Removals & Storage	EASTERN CREEK, NSW, 2766	Suburb		West
2005	Ceilings; Plasterers--Plasterboard Fixers	Telik Ceiling Systems Pty Ltd	EASTERN CREEK, NSW, 2766	Suburb		West
2005	Plasterers--Plasterboard Fixers	Telik Ceiling Systems Pty Ltd.	EASTERN CREEK, NSW, 2766	Suburb		West
2005	Water Beds	'All Round' Professional Waterbed Services	EASTERN CREEK, NSW, 2766	Suburb		West
2005	Motor Body Trimmers; Canopies--Motor & Boat	Unique Marine & Auto Upholstery	EASTERN CREEK, NSW, 2766	Suburb		West

Land Insight uses a number of address geocoding techniques and has characterised them based on completeness (match rates) and positional accuracy. When a historical street address is incomplete or a match is not found, a record identified as being in the surrounding area will be included for reference and the accuracy of the data is approximate only. An explanation of the positional accuracy records is defined in the table below.

Historical data positional accuracy and georeferencing results explanation		
Positional accuracy	Georeferenced	Description
Address	Located to the address level	<i>When street address and names fully match.</i>
Street	Located to the street centroid	<i>When street names match but no exact address was found. Location is approximate.</i>
Place	Located to the structure, building or complex	<i>When building, residential complex or structure name match but no exact address was found. Location is approximate.</i>
Suburb	Located to the suburb area	<i>When suburb name match but no exact address was found. Location is approximate.</i>

The data used in this section was extracted from range of historical commercial trade directories and business listings. The business addresses were geocoded using historical information and the accuracy of the data may vary due to changes to the physical address at a given locality over time or the quality of the original records. From 2005, the historical business records in this section are considered more accurate as information was extracted from digital directories with geographic coordinate location information available. On this basis, reliance on the historic listing data should be considered when assessing the risk of contamination from an activity at the site. The presence of a business listing does not definitively confirm the actual activity that has occurred at the site. For more information on how these records were geocoded and the methodology used by Land Insight, contact us at info@landinsight.co.

Historical business directory listings have been filtered to match activities and industries identified as PCAs in Section 4.1. Please note that any record not identified within this section (due to error or unforeseen omission) does not necessarily mean that the screened area is not potentially contaminated or free of any risks.



Section 5 Natural Hazards



5.1 Fire Hazard

Map 5.1 (500m Buffer)

Bushfire Prone Areas

Category	Type	Details	Distance (m)	Direction
Bushfire Prone Area	Vegetation Buffer	Vegetation Buffer - Bush Fire Prone is an area of land that can support a bush fire or is likely to be subject to bush fire attack. Bush Fire Prone Land areas becomes the trigger for planning for bush fire protection.	0.0	Onsite
Bushfire Prone Area	Vegetation Category 2	Bushfire Prone Area - Vegetation Category 2 is considered to be a lower bush fire risk. Bush Fire Prone Areas becomes the trigger for planning for bush fire protection.	0.0	Onsite
Bushfire Prone Area	Vegetation Category 1	Bushfire Prone Area - Vegetation Category 1 is considered to be the highest risk for bush fire. Bush Fire Prone Areas becomes the trigger for planning for bush fire protection.	2.8	North

Bushfire History

Type	Season	Details	Distance (m)	Direction
Wildfire	2002-03	Eastern Creek Raceway	11.1	East

5.2 Flood Hazard

Map 5.2 (500m Buffer)

Flood Planning Area

Category	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-

Other Flood Studies

Category	Type	Details	Distance (m)	Direction
Flood Inundation Studies	Probable Maximum Flood (PMF)	Blacktown City Council Flood Mapping	0.0	Onsite

Flood History

Type	Season	Details	Distance (m)	Direction
Not identified	-	-	-	-

The list provided is not comprehensive and does not consider all flood history. It only includes the information that is currently available.

5.3 Erosion Hazard

Map 5.3 (500m Buffer)

Erosion Hazard

Category	Type	Details	Distance (m)	Direction
Landslip Erosion Risk	Very severe limitations	Very High	0.0	Onsite
	Very slight to negligible limitations	Very Low	0.0	Onsite
	Not assessed	Not Assessed	262.2	West
Water Erosion Risk	Severe limitations	High	0.0	Onsite
	Moderate to severe limitations	Moderate	126.4	North-west
	Not assessed	Not Assessed	262.2	West
Wind Erosion Risk	Very slight to negligible limitations	Very Low	0.0	Onsite
	Not assessed	Not Assessed	262.2	West

Table 5.2.1 – Flood Hazard definitions and explanations

Annual Exceedance Probability (AEP) - The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance

0.2%AEP	A flood event of this size is considered rare but may still occur. A flood of size or larger has a 1 in 500 chance or a 0.2% probability of occurring in any year
1% AEP	A flood of this size or larger has a 1 in 100 chance or a 1% probability of occurring in any year
2% AEP	A flood of this size or larger has a 1 in 50 chance or a 2% probability of occurring in any year.
5% AEP	A flood of this size or larger has a 1 in 20 chance or a 5% probability of occurring in any year
20%AEP	A flood of this size or larger has a 1 in 5 chance or a 20% probability of occurring in any year.

Table 5.2.1 – Flood Hazard definitions and explanations

Average Recurrence Interval (ARI). The long-term average number of years between the occurrence of a flood as big as, or larger than, the selected event. For example, floods reaching a height as great as, or greater than, the 20 year ARI flood event will occur on average once every 20 years
Flood Liable Land - Synonymous with flood prone land, i.e. land susceptible to flooding by the Probable Maximum Flood (PMF) event. Note that the term flood liable land covers the whole floodplain, not just the part below the flood planning level
Flood Planning Area (FPA) – Councils develop Flood Planning Areas (FPAs) as part of Flood Overlay mapping to guide future building and development in flood prone areas. The FPAs are designed to recognise the flood hazard for different flooding types.
Flood Hazard - Flood hazard is a combination of frequency of flooding, the flood depth, and the speed or velocity at which the water can travel.
Probable Maximum Flood (PMF) - The largest flood that could conceivably be expected to occur at a particular location, usually estimated from probable maximum precipitation. The PMF defines the maximum extent of flood prone land, that is, the floodplain. It is difficult to define a meaningful Annual Exceedance Probability for the PMF, but it is commonly assumed to be of the order of 10^{-4} to 10^{-7} (once in 10,000 to 10,000,000 years)



The Commons
388 George Street
Sydney NSW 2000 Australia
info@landinsight.co
www.landinsight.co

APPENDIX D: PHOTOLOG

Site Details:	M7-M12 Integration Project - Eastern Creek NSW 2766
EDP Reference:	S-05667.DSI.M7.024_M4 Ramp



Photo 1: 28/10/2024: View from top of the embankment at the central portion of the site, facing south of M7 Motorway.



Photo 2: 28/10/2024: View from top of the embankment at the central portion of the site, facing north of M7 Motorway.



Photo 3: 28/10/2024: Photo taken north of BH01, facing south of M7 Motorway.



Photo 4: 28/10/2024: Photo of sandy silt fill at 0.5 mbgl of BH01



Photo 5: 28/10/2024: Photo of sandy silty clay fill at 1.5 mbgl of BH01



Photo 6: 28/10/2024: Photo of sandy clay fill at 2.5 mbgl of BH01

Site Details:	M7-M12 Integration Project - Eastern Creek NSW 2766
EDP Reference:	S-05667.DSI.M7.024_M4 Ramp



Photo 7:

28/10/2024: Photo of natural clay at 4.5 mbgl of BH01



Photo 8:

28/10/2024: Photo of silty clay fill at 1.5 mbgl of BH04



Photo 9:

28/10/2024: Photo of natural clay at 2.5 mbgl of BH04



Photo 10:

28/10/2024: Photo of natural clay at 1.5 mBGL of BH07



Photo 11:

28/10/2024: Photo of natural clay at 2.5 mBGL of BH07



Photo 12:

01/11/2024: Representative image of TP06

Site Details:	M7-M12 Integration Project - Eastern Creek NSW 2766
EDP Reference:	S-05667.DSI.M7.024_M4 Ramp



Photo 13: 01/11/2024: Photo of natural silty clay material at TP06



Photo 14: 01/11/2024: Photo of natural silty clay material at TP08



Photo 15: 20/11/2024: View of northern portion of median strip, showing drainage depression, facing north.



Photo 16: 20/11/2024: View of central and southern portion of median strip, showing backfilled area, facing south.



Photo 17: 20/11/2024: Photo of clayey silt fill at 0.5 mBGL of BH09



Photo 18: 20/11/2024: Photo of natural orange brown silty clay at 2.0 mBGL of BH10

End of Photographic Log

APPENDIX E: BOREHOLE AND TEST PIT LOGS

Client John Holland Site Location Eastern Creek, NSW 2766 Project Number S-05667 Project Name DSI.M7.024_M4 ramp	Date 28/10/2024 Drilling Method Solid Flight Auger Total Depth 4.5 mBGL LOGGED BY WX CHECKED BY JH
COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist	

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
4.2	BH01_0.5	0.2		D	Fill: Sandy SILT, dark brown, with gravel and cobbles.	No visual signs of contamination, odour, stain or foreign material.
		0.4				
		0.6		M	Fill: Sandy SILT, dark brown.	No visual signs of contamination, odour, stain or foreign material.
		0.8				
0.9	BH01_3.0	1		SM	Fill: Sandy Silty CLAY, red brown/white.	No visual signs of contamination, odour, stain or foreign material.
		1.2				
		1.4				
		1.6		M	Fill: Sandy CLAY, dark brown, with gravel and cobbles.	No visual signs of contamination, odour, stain or foreign material.
0.4	BH01_4.5	1.8				
		2				
		2.2				
		2.4				
		2.6		D	Fill: Sandy CLAY, grey, with gravel and rocks.	No visual signs of contamination, odour, stain or foreign material.
		2.8				
		3		SM	Natural: CLAY, dark brown and red.	No visual signs of contamination, odour, stain or foreign material.
		3.2				
		3.4				
		3.6				
		3.8				
		4		SM	Natural: CLAY, grey/red brown.	No visual signs of contamination, odour, stain or foreign material.
		4.2				
		4.4				
		4.6			Target depth reached at 4.5 mBGL.	

Client John Holland
Site Location Eastern Creek, NSW 2766
Project Number S-05667
Project Name DSI.M7.024_M4 ramp

Date 28/10/2024
Drilling Method Solid Flight Auger
Total Depth 3.0 mBGL
LOGGED BY WX
CHECKED BY JH

COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
1.8	BH02_0.5	0.2		D	Fill: Silty CLAY, brown grey.	No visual signs of contamination, odour, stain or foreign material.
		0.4		D	Fill: CLAY and weathered shale.	No visual signs of contamination, odour, stain or foreign material.
	BH02_0.8	0.6		D	Fill: CLAY and weathered shale.	No visual signs of contamination, odour, stain or foreign material.
0.1	BH02_3.0	0.8		M	Natural: CLAY dark brown, trace sand.	No visual signs of contamination, odour, stain or foreign material.
		1.0		M	Natural: CLAY dark brown, trace sand.	No visual signs of contamination, odour, stain or foreign material.
		1.2		M	Natural: CLAY dark brown, trace sand.	No visual signs of contamination, odour, stain or foreign material.
		1.4		M	Natural: CLAY dark brown, trace sand.	No visual signs of contamination, odour, stain or foreign material.
		1.6		M	Natural: CLAY, red brown.	No visual signs of contamination, odour, stain or foreign material.
		1.8		M	Natural: CLAY, red brown.	No visual signs of contamination, odour, stain or foreign material.
		2.0		M	Natural: CLAY, red brown.	No visual signs of contamination, odour, stain or foreign material.
		2.2		M	Natural: CLAY, red brown.	No visual signs of contamination, odour, stain or foreign material.
		2.4		M	Natural: CLAY, red brown.	No visual signs of contamination, odour, stain or foreign material.
		2.6		M	Natural: CLAY, red brown.	No visual signs of contamination, odour, stain or foreign material.
		2.8		M	Natural: CLAY, red brown.	No visual signs of contamination, odour, stain or foreign material.
		3.0		M	Target depth reached at 3.0 mBGL.	

Client John Holland Site Location Eastern Creek, NSW 2766 Project Number S-05667 Project Name DSI.M7.024_M4 ramp	Date 28/10/2024 Drilling Method Solid Flight Auger Total Depth 3.0 mBGL LOGGED BY WX CHECKED BY JH
---	---

COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
0.6	BH03_1.0 + QC01	0.2		D	Fill: Silty CLAY, coarse grained, red brown.	No visual signs of contamination, odour, stain or foreign material.
		0.4				
		0.6				
0.9	BH03_3.0	0.8		D	Natural: CLAY, light brown, with cobbles, trace sand.	No visual signs of contamination, odour, stain or foreign material.
		1.0				
		1.2				
		1.4				
		1.6				
		1.8				
0.9	BH03_3.0	2.0		D	Natural: CLAY, light brown/white.	No visual signs of contamination, odour, stain or foreign material.
		2.2				
		2.4				
		2.6				
		2.8				
0.9	BH03_3.0	3.0			Target depth reached at 3.0 mBGL.	

Client John Holland Site Location Eastern Creek, NSW 2766 Project Number S-05667 Project Name DSI.M7.024_M4 ramp	Date 28/10/2024 Drilling Method Solid Flight Auger Total Depth 3.0 mBGL LOGGED BY WX CHECKED BY JH
---	---

COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
		0.2		D	Fill: Silty CLAY, dark brown.	No visual signs of contamination, odour, stain or foreign material.
	BH04_0.5	0.4				
		0.6		SM	Fill: Silty CLAY, red brown/white.	No visual signs of contamination, odour, stain or foreign material.
		0.8				
		1				
		1.2				
	BH04_1.5	1.4				
		1.6		D	Natural: CLAY, light yellow.	No visual signs of contamination, odour, stain or foreign material.
		1.8				
		2				
		2.2				
		2.4				
		2.6				
		2.8				
0.2	BH04_3.0	3			Target depth reached at 3.0 mBGL.	

Client John Holland
Site Location Eastern Creek, NSW 2766
Project Number S-05667
Project Name DSI.M7.024_M4 ramp

Date 01/11/2024
Drilling Method Excavator
Total Depth 1.4 mBGL
LOGGED BY WX
CHECKED BY JH

COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist; DM - Dry to Moist

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
0.7	TP05_0.2	0.1		D	FILL: Clayey SILT, brown, with gravels, trace sand.	No visual signs of contamination, odour, stain or foreign material.
		0.2				
		0.3				
		0.4				
		0.5				
		0.6				
		0.7				
		0.8				
		0.9				
		1.0				
0.5	TP05_1.0	1.1			FILL: Silty CLAY, low to medium plasticity, dark orange/red brown, with shale gravels.	No visual signs of contamination, odour, stain or foreign material.
		1.2				
		1.3				
		1.4				
					Test pit terminated at 1.4 mBGL as metal pipe was encountered.	

Client John Holland
Site Location Eastern Creek, NSW 2766
Project Number S-05667
Project Name DSI.M7.024_M4 ramp

Date 01/11/2024
Drilling Method Excavator
Total Depth 2.0 mBGL
LOGGED BY WX
CHECKED BY JH

COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist; DM - Dry to Moist

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
0.3	TP06_0.2	0.1		D	Fill: Clayey SILT, dark grey, with gravels and rootlets.	No visual signs of contamination, odour, stain or foreign material.
		0.2				
		0.3			@0.3 mBGL: no rootlets	
		0.4				
		0.5				
		0.6				
0.5	TP06_1.0	0.7			Fill:: Silty CLAY, low plasticity, dark grey, with gravels.	No visual signs of contamination, odour, stain or foreign material.
		0.8				
		0.9				
		1.0				
		1.1				
		1.2				
		1.3				
		1.4				
		1.5				
		1.6				
0.3	TP06_2.0	1.7			Natural: Silty CLAY, low to medium plasticity, red brown/grey.	No visual signs of contamination, odour, stain or foreign material.
		1.8				
		1.9				
		2.0				
		2.1				
					Target depth reached at 2.0 mBGL.	

Client John Holland
Site Location Eastern Creek, NSW 2766
Project Number S-05667
Project Name DSI.M7.024_M4 ramp

Date 28/10/2024
Drilling Method Solid Flight Auger
Total Depth 3.0 mBGL
LOGGED BY WX
CHECKED BY JH

COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist; DM - Dry to Moist

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
0.2	BH07_0.4	0.2		D	Fill: Silty CLAY, dark brown red.	No visual signs of contamination, odour, stain or foreign material.
		0.4		DM	Natural: CLAY, grey to red brown.	No visual signs of contamination, odour, stain or foreign material.
0.1	BH07_3.0	0.6				
		0.8				
		1				
		1.2				
		1.4				
		1.6				
		1.8				
		2				
		2.2				
		2.4				
		2.6				
		2.8				
		3			Target depth reached at 3.0 mBGL.	

Client John Holland
Site Location Eastern Creek, NSW 2766
Project Number S-05667
Project Name DSI.M7.024_M4 ramp

Date 01/11/2024
Drilling Method Excavator
Total Depth 1.2 mBGL
LOGGED BY WX
CHECKED BY JH

COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist; DM - Dry to Moist

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
0.7	TP08_0.1	0.1		D	Fill: Clayey SILT, brown, with gravels, trace sand.	No visual signs of contamination, odour, stain or foreign material.
0.2	TP08_0.5	0.2				
		0.3				
		0.4				
		0.5			Natural: Silty CLAY, medium plasticity, dark yellow/orange brown	No visual signs of contamination, odour, stain or foreign material.
		0.6				
		0.7				
		0.8			@0.8 mBGL: pale grey/yellow brown	
		0.9				
0.3	TP08_1.0	1.0				
		1.1				
		1.2			Target depth reached at 1.2 mBGL.	
		1.3				
		1.4				

Client John Holland
Site Location Eastern Creek, NSW 2766
Project Number S-05667
Project Name DSI.M7.024_M4 ramp

Date 20/11/2024
Drilling Method Solid Flight Auger
Total Depth 3.0 mBGL
LOGGED BY WX
CHECKED BY JH

COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist; DM - Dry to Moist

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
0.4	BH09_0.5	0.2		D	Backfill for site levelling purposes (John Holland advised this was material from tunnelling works).	No visual signs of contamination, odour, stain or foreign material.
		0.4			Fill: Clayey SILT, dark grey, with gravels.	
		0.6			Natural: Silty Clay, low plasticity, dark orange brown.	
0.6	BH09_1.5	1.2				
		1.4				
		1.6				
0.5	BH09_2.5	1.8				
		2.0				
		2.2				
		2.4				
	2.6					
	2.8					
		3.0			Target depth reached at 3.0 mBGL.	

Client John Holland
Site Location Eastern Creek, NSW 2766
Project Number S-05667
Project Name DSI.M7.024_M4 ramp

Date 20/11/2024
Drilling Method Solid Flight Auger
Total Depth 3.0 mBGL
LOGGED BY WX
CHECKED BY JH

COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist; DM - Dry to Moist

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
		0.2		D	Backfill for site levelling purposes (John Holland advised this was material from tunnelling works).	No visual signs of contamination, odour, stain or foreign material.
0.5	BH10_0.5 + QC03	0.4			Fill: Silty Clay, low palsticity, dark grey brown, with gravels.	
0.8	BH10_1.0	1			Natural: Silty Clay, low plasticity, dark grey and dark red brown.	
0.3	BH10_2.0	2			@2.0 mbgl: orange brown.	
0.3	BH10_3.0	3			@2.7 mbgl: grey and dark orange brown.	
					Target depth reached at 3.0 mBGL.	

Client John Holland
Site Location Eastern Creek, NSW 2766
Project Number S-05667
Project Name DSI.M7.024_M4 ramp

Date 20/11/2024
Drilling Method Solid Flight Auger
Total Depth 4.5 mBGL
LOGGED BY WX
CHECKED BY JH

COMMENTS SFA - Solid Flight Auger; D - Dry; M - Moist; SM - Slightly Moist; DM - Dry to Moist

PID (ppm)	Sample ID / QC Sample	Depth (m)	Graphic Log	Moisture	Material Description (e.g. FILL/Natural, soil type name, Consistency/plasticity, color, secondary component)	Comments Additional Observations (e. g. anthropogenic material, signs of contamination)
0.7	BH11_0.5	0.2		D	Backfill for site levelling purposes (John Holland advised this was material from tunnelling works).	No visual signs of contamination, odour, stain or foreign material.
		0.4			Fill: Clayey Silt, dark grey, trace gravels.	
0.5	BH11_1.5	1.4			Fill: Silty Clay, medium plasticity, dark yellow brown.	
		2.0			@2.0 mbgl: orange brown.	
0.6	BH11_2.5	2.4				
		2.6				
0.5	BH11_4.0	3.8				
		4.0			Natural, Silty Clay, low to medium plasticity, pale grey and dark orange brown.	
		4.6			Target depth reached at 4.5 mBGL.	

APPENDIX F: NATA ACCREDITED LABORATORY REPORTS

Request for Laboratory Services and Chain of Custody Form

Received Date: 29/10/24
Logged-in Date:Received By: [Signature]
Time of Receipt: 2:40 pm

Laboratory Section

Cooling Method:

☒ Ice☐ Icepack☐ None

Samples Intact:

☒ Yes☐ No

Cooler Sealed:

☒ Yes☐ No

Temperature:

☐ Ambient☒ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:
Name: Cristiane Florido
Company: EDP Consultants Pty Ltd
Address: Level 4 38 Oxley Street
St Leonards NSW 2065
Email: invoices@edp.au.com; Project.admin@edp.au.com; Cristiane.Florido@edp.au.com
Phone: 0413 378 102 Fax:

Quote #:

Attached Parameter List:

☐ Yes☐ No

Replacement Sample Containers Required:

☐ Yes☒ No

Results Required By:

Standard TA except pHf/pHfox

Urgent TA requires lab approval

Notes: Standard TA for all analytes except pHf/pHfox (24 Hours)

Client information	PO No.:	Project No.:	S-05667.135 - WX
Company Name:	EDP Consultants Pty Ltd		
Contact Name:	Cristiane Florido	Samplers:	Tary Mathew
Address:	Level 4 38 Oxley Street, St Leonards NSW 2065		
Phone Number:	0413 378 102 / 0452 316 267	After Hours Phone Number:	NA
Fax Number:	NA		

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one):

Email & Ecd ☒Fax ☐☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Date Sampled	Matrix: Soil Water Other	# of Bags	# of Bottles	Analysis Requested									Notes
						C17	C10	Asbestos (presence / absence)	PFAS Short suite	CRS	Salinity	TRH/BTEX	Ph/Pfox (24 Hour TAT)	HOLD	
1	EDP-DSI.024.BH01 - 0.5 ✓	28/10/2024	S	+3		X		X	X		X		X		All CRS Samples on hold please
2	EDP-DSI.024.BH01 - 3.0	28/10/2024	S	0			X	X			X		X		
3	EDP-DSI.024.BH01 - 4.5	28/10/2024	S	3							X		X		
4	EDP-DSI.024.BH02 - 0.5	28/10/2024	S	32		X		X			X		X		
5	EDP-DSI.024.BH02 - 0.8	28/10/2024	S	0			X	X			X		X		
6	EDP-DSI.024.BH02 - 3.0	28/10/2024	S	32							X		X		
7	EDP-DSI.024.BH03 - 1.0	28/10/2024	S	32		X		X	X		X		X		
8	EDP-DSI.024.BH03 - 3.0	28/10/2024	S	32			X	X			X		X		
9	EDP-DSI.024.BH04 - 0.5	28/10/2024	S	2		X		X			X		X		
10	EDP-DSI.024.BH04 - 1.5	28/10/2024	S	0			X	X			X		X		
11	EDP-DSI.024.BH04 - 3.0	28/10/2024	S	3							X		X		
12	EDP-DSI.024.BH07 - 0.4	28/10/2024	S	3		X		X	X		X		X		
13	EDP-DSI.024.BH07 - 3.0	28/10/2024	S	3			X	X			X		X		
14	EDP-DSI.024.QC01	28/10/2024	S				X								
						5	6	10	3	0	13		13	0	

Sampled By:	Tary Mathew	Date:	28/10/2024
Relinquished By:			
	Courier Pick-up	Date:	29/10/2024 Time:

SGS EHS Sydney COC

SE273341





SAMPLE RECEIPT ADVICE

SE273341

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.135-WX**
Order Number **S-05667.135**
Samples 14

LABORATORY DETAILS

Manager Shane McDermott
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 29/10/2024
Report Due Tue 5/11/2024
SGS Reference **SE273341**

SUBMISSION DETAILS

This is to confirm that 14 samples were received on Tuesday 29/10/2024. Results are expected to be ready by COB Tuesday 5/11/2024. Please quote SGS reference SE273341 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	14 Soil	Type of documentation received	COC
Date documentation received	29/10/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	5.4°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

pHf/pHfox reported in SE273341A.
A separate portion was not supplied for Asbestos analysis. A sub-sample will be used from the jar provided.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



SAMPLE RECEIPT ADVICE

SE273341

CLIENT DETAILS

Client EDP CONSULTANTS PTY LTD

Project S-05667.135-WX

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	EDP-DSI.024.BH01-0.5	2	30	14	26	11	10	11	7
002	EDP-DSI.024.BH01-3.0	2	-	-	26	-	10	11	7
003	EDP-DSI.024.BH01-4.5	2	-	-	-	-	-	-	-
004	EDP-DSI.024.BH02-0.5	2	30	14	26	11	10	11	7
005	EDP-DSI.024.BH02-0.8	2	-	-	26	-	10	11	7
006	EDP-DSI.024.BH02-3.0	2	-	-	-	-	-	-	-
007	EDP-DSI.024.BH03-1.0	2	30	14	26	11	10	11	7
008	EDP-DSI.024.BH03-3.0	2	-	-	26	-	10	11	7
009	EDP-DSI.024.BH04-0.5	2	30	14	26	11	10	11	7
010	EDP-DSI.024.BH04-1.5	2	-	-	26	-	10	11	7
011	EDP-DSI.024.BH04-3.0	2	-	-	-	-	-	-	-
012	EDP-DSI.024.BH07-0.4	2	30	14	26	11	10	11	7
013	EDP-DSI.024.BH07-3.0	2	-	-	26	-	10	11	7
014	EDP-DSI.024.QC01	-	-	-	26	-	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

SE273341

CLIENT DETAILS

Client EDP CONSULTANTS PTY LTD

Project S-05667.135-WX

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Per- and Polyfluoroalkyl Substances (PFAS) in	Total Recoverable Elements in Soil/Waste
001	EDP-DSI.024.BH01-0.5	3	1	1	30	7
002	EDP-DSI.024.BH01-3.0	3	1	1	-	7
003	EDP-DSI.024.BH01-4.5	-	-	1	-	-
004	EDP-DSI.024.BH02-0.5	3	1	1	-	7
005	EDP-DSI.024.BH02-0.8	3	1	1	-	7
006	EDP-DSI.024.BH02-3.0	-	-	1	-	-
007	EDP-DSI.024.BH03-1.0	3	1	1	30	7
008	EDP-DSI.024.BH03-3.0	3	1	1	-	7
009	EDP-DSI.024.BH04-0.5	3	1	1	-	7
010	EDP-DSI.024.BH04-1.5	3	1	1	-	7
011	EDP-DSI.024.BH04-3.0	-	-	1	-	-
012	EDP-DSI.024.BH07-0.4	3	1	1	30	7
013	EDP-DSI.024.BH07-3.0	3	1	1	-	7
014	EDP-DSI.024.QC01	-	1	1	-	7

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.

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.135-WX**
Order Number **S-05667.135**
Samples 14

LABORATORY DETAILS

Manager Shane McDermott
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 **SE273341 R0**
Date Received 29/10/2024
Date Reported 5/11/2024

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.

Sample #2,5,10: A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Sample #1,4,7-9,12,13: A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures due to large volume. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam

SIGNATORIES



Akheeqar BENIAMEEN
Chemist



Bennet LO
Senior Chemist



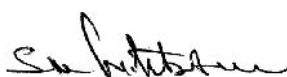
Kamrul AHSAN
Senior Chemist



Shane MCDERMOTT
Laboratory Manager



Teresa NGUYEN
Organic Chemist



Yusuf KUTHUPUDIN
Asbestos Analyst



Ying Ying ZHANG
Laboratory Technician

VOC's in Soil [AN433] Tested: 30/10/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH01-3	EDP-DSI.024.BH01-3	EDP-DSI.024.BH02-0	EDP-DSI.024.BH02-0	EDP-DSI.024.BH03-1
			5	0	5	8	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.001	SE273341.002	SE273341.004	SE273341.005	SE273341.007
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	0.7	0.4	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	0.8	0.5	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	1.0	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	0.1	0.1	<0.1

PARAMETER	UOM	LOR	EDP-DSI.024.BH03-3	EDP-DSI.024.BH04-0	EDP-DSI.024.BH04-1	EDP-DSI.024.BH07-0	EDP-DSI.024.BH07-3
			0	5	5	4	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.008	SE273341.009	SE273341.010	SE273341.012	SE273341.013
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	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
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	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
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	EDP-DSI.024.QC01
			SOIL
			-
			28/10/2024
			SE273341.014
Benzene	mg/kg	0.1	<0.1
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
Total Xylenes*	mg/kg	0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 30/10/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH01-0	EDP-DSI.024.BH01-3	EDP-DSI.024.BH02-0	EDP-DSI.024.BH02-0	EDP-DSI.024.BH03-1
			5	0	5	8	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.001	SE273341.002	SE273341.004	SE273341.005	SE273341.007
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	EDP-DSI.024.BH03-3	EDP-DSI.024.BH04-0	EDP-DSI.024.BH04-1	EDP-DSI.024.BH07-0	EDP-DSI.024.BH07-3
			0	5	5	4	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.008	SE273341.009	SE273341.010	SE273341.012	SE273341.013
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	EDP-DSI.024.QC01
			SOIL
			-
			28/10/2024
			SE273341.014
TRH C6-C9	mg/kg	20	<20
Benzene (F0)	mg/kg	0.1	<0.1
TRH C6-C10	mg/kg	25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 30/10/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH01-0	EDP-DSI.024.BH01-3	EDP-DSI.024.BH02-0	EDP-DSI.024.BH02-0	EDP-DSI.024.BH03-1
			5	0	5	8	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.001	SE273341.002	SE273341.004	SE273341.005	SE273341.007
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	46	110	<45
TRH C29-C36	mg/kg	45	<45	<45	52	170	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	110	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	210	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	180	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	280	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	390	<210

PARAMETER	UOM	LOR	EDP-DSI.024.BH03-3	EDP-DSI.024.BH04-0	EDP-DSI.024.BH04-1	EDP-DSI.024.BH07-0	EDP-DSI.024.BH07-3
			0	5	5	4	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.008	SE273341.009	SE273341.010	SE273341.012	SE273341.013
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	EDP-DSI.024.QC01
			SOIL
			-
			28/10/2024
			SE273341.014
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-C16	mg/kg	25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120
TRH C10-C36 Total	mg/kg	110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 30/10/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH01-0	EDP-DSI.024.BH01-3	EDP-DSI.024.BH02-0	EDP-DSI.024.BH02-0	EDP-DSI.024.BH03-1
			5	0	5	8	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.001	SE273341.002	SE273341.004	SE273341.005	SE273341.007
Naphthalene	mg/kg	0.1	<0.1	<0.1	0.2	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	0.2	<0.1	0.5	0.4	<0.1
1-methylnaphthalene	mg/kg	0.1	0.2	<0.1	0.3	0.3	<0.1
Acenaphthylene	mg/kg	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	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.1	<0.1	0.2	0.4	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	0.1	0.7	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	0.2	0.7	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.3	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	0.1	0.4	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.5	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.5	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	0.1	0.6	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	0.1	0.6	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	0.2	0.8	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	1.0	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	1.0	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	0.2	1.0	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	2.1	6.7	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	1.2	6.0	<0.8

PARAMETER	UOM	LOR	EDP-DSI.024.BH03-3	EDP-DSI.024.BH04-0	EDP-DSI.024.BH04-1	EDP-DSI.024.BH07-0	EDP-DSI.024.BH07-3
			0	5	5	4	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.008	SE273341.009	SE273341.010	SE273341.012	SE273341.013
Naphthalene	mg/kg	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	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	0.4	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	0.3	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	4.9	0.3	0.6	<0.1
Anthracene	mg/kg	0.1	<0.1	0.6	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	8.0	0.6	0.9	<0.1
Pyrene	mg/kg	0.1	<0.1	7.5	0.5	0.9	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	2.3	0.2	0.3	<0.1
Chrysene	mg/kg	0.1	<0.1	2.4	0.2	0.3	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	2.2	0.1	0.3	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	2.3	0.2	0.3	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	3.1	0.2	0.4	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	2.4	0.2	0.3	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	0.3	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	2.5	0.2	0.3	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	4.4	0.3	0.5	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	4.4	0.4	0.6	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	4.4	0.3	0.6	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	39	2.5	4.7	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	39	2.5	4.7	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 30/10/2024 (continued)

			EDP-DSI.024.QC01
			SOIL
			-
			28/10/2024
PARAMETER	UOM	LOR	SE273341.014
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(b&j)fluoranthene	mg/kg	0.1	<0.1
Benzo(k)fluoranthene	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
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 30/10/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH01-0	EDP-DSI.024.BH02-0	EDP-DSI.024.BH03-1	EDP-DSI.024.BH04-0	EDP-DSI.024.BH07-0
			5	5	0	5	4
			SOIL	SOIL	SOIL	SOIL	SOIL
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.001	SE273341.004	SE273341.007	SE273341.009	SE273341.012
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	-	-	-	-	-
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	-	-	-	-	-
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	-	-	-	-	-
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	-	-	-	-	-
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1



ANALYTICAL RESULTS

SE273341 R0

OP Pesticides in Soil [AN420] Tested: 30/10/2024

			EDP-DSI.024.BH01-0	EDP-DSI.024.BH02-0	EDP-DSI.024.BH03-1	EDP-DSI.024.BH04-0	EDP-DSI.024.BH07-0
			5	5	0	5	4
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.001	SE273341.004	SE273341.007	SE273341.009	SE273341.012
PARAMETER	UOM	LOR					
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7



ANALYTICAL RESULTS

SE273341 R0

PCBs in Soil [AN420] Tested: 30/10/2024

			EDP-DSI.024.BH01-0	EDP-DSI.024.BH02-0	EDP-DSI.024.BH03-1	EDP-DSI.024.BH04-0	EDP-DSI.024.BH07-0
			5	5	0	5	4
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.001	SE273341.004	SE273341.007	SE273341.009	SE273341.012
PARAMETER	UOM	LOR					
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

Conductivity and TDS by Calculation - Soil [AN106] Tested: 4/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH01-0	EDP-DSI.024.BH01-3	EDP-DSI.024.BH01-4	EDP-DSI.024.BH02-0	EDP-DSI.024.BH02-0
			5	0	5	5	8
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.001	SE273341.002	SE273341.003	SE273341.004	SE273341.005
Conductivity of Extract (1:5 as received)	µS/cm	1	130	360	400	140	140
Salinity (by calculation)*	mg/kg	5	460	1400	1600	500	480

PARAMETER	UOM	LOR	EDP-DSI.024.BH02-3	EDP-DSI.024.BH03-1	EDP-DSI.024.BH03-3	EDP-DSI.024.BH04-0	EDP-DSI.024.BH04-1
			0	0	0	5	5
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.006	SE273341.007	SE273341.008	SE273341.009	SE273341.010
Conductivity of Extract (1:5 as received)	µS/cm	1	240	290	410	130	460
Salinity (by calculation)*	mg/kg	5	970	1100	1500	570	1700

PARAMETER	UOM	LOR	EDP-DSI.024.BH04-3	EDP-DSI.024.BH07-0	EDP-DSI.024.BH07-3
			0	4	0
			SOIL	SOIL	SOIL
			-	-	-
			28/10/2024	28/10/2024	28/10/2024
			SE273341.011	SE273341.012	SE273341.013
Conductivity of Extract (1:5 as received)	µS/cm	1	380	360	460
Salinity (by calculation)*	mg/kg	5	1400	1300	1700

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/10/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH01-0	EDP-DSI.024.BH01-3	EDP-DSI.024.BH02-0	EDP-DSI.024.BH02-0	EDP-DSI.024.BH03-1
			5	0	5	8	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.001	SE273341.002	SE273341.004	SE273341.005	SE273341.007
Arsenic, As	mg/kg	1	5	5	4	5	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	5.6	17	7.3	12	12
Copper, Cu	mg/kg	0.5	25	27	29	30	46
Lead, Pb	mg/kg	1	14	18	17	16	13
Nickel, Ni	mg/kg	0.5	15	8.6	20	17	15
Zinc, Zn	mg/kg	2	81	52	77	66	73

PARAMETER	UOM	LOR	EDP-DSI.024.BH03-3	EDP-DSI.024.BH04-0	EDP-DSI.024.BH04-1	EDP-DSI.024.BH07-0	EDP-DSI.024.BH07-3
			0	5	5	4	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341.008	SE273341.009	SE273341.010	SE273341.012	SE273341.013
Arsenic, As	mg/kg	1	3	7	6	5	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	13	26	11	12	9.4
Copper, Cu	mg/kg	0.5	37	19	31	23	34
Lead, Pb	mg/kg	1	12	24	49	15	14
Nickel, Ni	mg/kg	0.5	16	19	7.6	9.1	25
Zinc, Zn	mg/kg	2	71	38	100	43	110

PARAMETER	UOM	LOR	EDP-DSI.024.QC01
			SOIL
			-
			28/10/2024
			SE273341.014
Arsenic, As	mg/kg	1	3
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	13
Copper, Cu	mg/kg	0.5	46
Lead, Pb	mg/kg	1	13
Nickel, Ni	mg/kg	0.5	15
Zinc, Zn	mg/kg	2	71



ANALYTICAL RESULTS

SE273341 R0

Mercury in Soil [AN312] Tested: 30/10/2024

			EDP-DSI.024.BH01-0	EDP-DSI.024.BH01-3	EDP-DSI.024.BH02-0	EDP-DSI.024.BH02-0	EDP-DSI.024.BH03-1
			5	0	5	8	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
PARAMETER	UOM	LOR	SE273341.001	SE273341.002	SE273341.004	SE273341.005	SE273341.007
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

			EDP-DSI.024.BH03-3	EDP-DSI.024.BH04-0	EDP-DSI.024.BH04-1	EDP-DSI.024.BH07-0	EDP-DSI.024.BH07-3
			0	5	5	4	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
PARAMETER	UOM	LOR	SE273341.008	SE273341.009	SE273341.010	SE273341.012	SE273341.013
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

			EDP-DSI.024.QC01
			SOIL
			-
			28/10/2024
PARAMETER	UOM	LOR	SE273341.014
Mercury	mg/kg	0.05	<0.05



ANALYTICAL RESULTS

SE273341 R0

Moisture Content [AN002] Tested: 31/10/2024

			EDP-DSI.024.BH01-0	EDP-DSI.024.BH01-3	EDP-DSI.024.BH01-4	EDP-DSI.024.BH02-0	EDP-DSI.024.BH02-0
			5	0	5	5	8
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
PARAMETER	UOM	LOR	SE273341.001	SE273341.002	SE273341.003	SE273341.004	SE273341.005
% Moisture	%w/w	1	8.5	18.0	17.5	7.3	4.6

			EDP-DSI.024.BH02-3	EDP-DSI.024.BH03-1	EDP-DSI.024.BH03-3	EDP-DSI.024.BH04-0	EDP-DSI.024.BH04-1
			0	0	0	5	5
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
PARAMETER	UOM	LOR	SE273341.006	SE273341.007	SE273341.008	SE273341.009	SE273341.010
% Moisture	%w/w	1	18.6	12.6	11.5	27.7	14.0

			EDP-DSI.024.BH04-3	EDP-DSI.024.BH07-0	EDP-DSI.024.BH07-3	EDP-DSI.024.QC01
			0	4	0	
			SOIL	SOIL	SOIL	SOIL
			-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024
PARAMETER	UOM	LOR	SE273341.011	SE273341.012	SE273341.013	SE273341.014
% Moisture	%w/w	1	9.5	10.9	9.4	13.2

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [AN404] Tested: 1/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH01-0	EDP-DSI.024.BH03-1	EDP-DSI.024.BH07-0
			5	0	4
			SOIL	SOIL	SOIL
			-	-	-
			28/10/2024	28/10/2024	28/10/2024
			SE273341.001	SE273341.007	SE273341.012
Perfluorobutanoic acid (PFBA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoropentanoic acid (PFPeA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorohexanoic acid (PFHxA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorooctanoic acid (PFOA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoropropane sulfonic acid (PFPrS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorononane sulfonic acid (PFNS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2)	mg/kg	0.005	<0.005	<0.005	<0.005
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.005	<0.005	<0.005	<0.005
Sum PFOS and PFHxS	mg/kg	0.005	<0.005	<0.005	<0.005
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.005	<0.005	<0.005	<0.005



ANALYTICAL RESULTS

SE273341 R0

Fibre Identification in soil [AS4964/AN602] Tested: 31/10/2024

			EDP-DSI.024.BH01-0	EDP-DSI.024.BH01-3	EDP-DSI.024.BH02-0	EDP-DSI.024.BH02-0	EDP-DSI.024.BH03-1
			5 SOIL - 28/10/2024 SE273341.001	0 SOIL - 28/10/2024 SE273341.002	5 SOIL - 28/10/2024 SE273341.004	8 SOIL - 28/10/2024 SE273341.005	0 SOIL - 28/10/2024 SE273341.007
PARAMETER	UOM	LOR					
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	01/11/2024 00:00	01/11/2024 00:00	01/11/2024 00:00	01/11/2024 00:00	01/11/2024 00:00

			EDP-DSI.024.BH03-3	EDP-DSI.024.BH04-0	EDP-DSI.024.BH04-1	EDP-DSI.024.BH07-0	EDP-DSI.024.BH07-3
			0 SOIL - 28/10/2024 SE273341.008	5 SOIL - 28/10/2024 SE273341.009	5 SOIL - 28/10/2024 SE273341.010	4 SOIL - 28/10/2024 SE273341.012	0 SOIL - 28/10/2024 SE273341.013
PARAMETER	UOM	LOR					
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	01/11/2024 00:00	01/11/2024 00:00	01/11/2024 00:00	01/11/2024 00:00	01/11/2024 00:00

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/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.
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 AAS or ICP as per USEPA Method 200.8.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract of as received sample with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2510 B.
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.
AN404	This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts. After spiking with isotopically labelled quantification surrogates and sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification. PFOS and PFHXS are determined as the total of linear and branched isomers.
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). Total PAH calculated from individual analyte detections at or above the limit of reporting.
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
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.
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.

AN602/AS4964

Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.

AN602/AS4964

AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602/AS4964

The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if-

- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres);
- (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and
- (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
		IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
***	Indicates that both * and ** apply.	LNR	Sample listed, but not received.		

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 calculated 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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.135-WX**
Order Number **S-05667.135**
Samples 10

LABORATORY DETAILS

Manager Shane McDermott
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 **SE273341 R0**
Date Received 29 Oct 2024
Date Reported 05 Nov 2024

COMMENTS

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

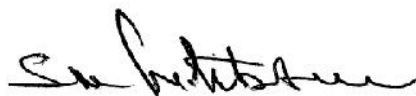
No respirable fibres detected in all soil samples using trace analysis technique.

Sample #2,5,10: A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Sample #1,4,7-9,12,13: A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures due to large volume. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam

SIGNATORIES



Yusuf KUTHPUDIN
Asbestos Analyst

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Date Analysed	Fibre Identification	Est.%w/w*
SE273341.001	EDP-DSI.024.BH 01-0.5	Soil	138g Clay, Sand, Rocks	28 Oct 2024	01 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273341.002	EDP-DSI.024.BH 01-3.0	Soil	106g Clay, Sand, Rocks	28 Oct 2024	01 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273341.004	EDP-DSI.024.BH 02-0.5	Soil	117g Clay	28 Oct 2024	01 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273341.005	EDP-DSI.024.BH 02-0.8	Soil	68g Clay, Sand, Soil, Rocks	28 Oct 2024	01 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273341.007	EDP-DSI.024.BH 03-1.0	Soil	135g Clay, Sand, Soil, Rocks	28 Oct 2024	01 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273341.008	EDP-DSI.024.BH 03-3.0	Soil	147g Clay, Sand, Rocks	28 Oct 2024	01 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273341.009	EDP-DSI.024.BH 04-0.5	Soil	149g Clay, Sand, Rocks	28 Oct 2024	01 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273341.010	EDP-DSI.024.BH 04-1.5	Soil	73g Clay, Sand, Soil, Rocks	28 Oct 2024	01 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273341.012	EDP-DSI.024.BH 07-0.4	Soil	143g Clay, Sand	28 Oct 2024	01 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273341.013	EDP-DSI.024.BH 07-3.0	Soil	134g Clay, Sand, Rocks	28 Oct 2024	01 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01

METHOD

METHODOLOGY SUMMARY

AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states: "Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres); (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.

Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.

Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

This test report shall not be reproduced, except in full.

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.137-WX**
Order Number **S-05667.137-WX**
Samples 3

LABORATORY DETAILS

Manager Shane McDermott
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 **SE274540 R0**
Date Received 21 Nov 2024
Date Reported 28 Nov 2024

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.

A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Cameron Smith.

SIGNATORIES



Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Date Analysed	Fibre Identification	Est.%w/w*
SE274540.001	EDP-DSI.024.BH 09-0.5	Soil	129g Clay, Sand, Rocks	20 Nov 2024	27 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE274540.004	EDP-DSI.024.BH 10-0.5	Soil	109g Clay, Sand, Rocks	20 Nov 2024	27 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE274540.008	EDP-DSI.024.BH 11-0.5	Soil	140g Clay, Sand, Rocks	20 Nov 2024	27 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01

METHOD

METHODOLOGY SUMMARY

AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states: "Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres); (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.

Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.

Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

This test report shall not be reproduced, except in full.



STATEMENT OF QA/QC PERFORMANCE

SE274540 R0

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.137-WX**
Order Number **S-05667.137-WX**
Samples 12

LABORATORY DETAILS

Manager Shane McDermott
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 **SE274540 R0**
Date Received 21 Nov 2024
Date Reported 28 Nov 2024

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

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

1 item

SAMPLE SUMMARY

Sample counts by matrix	9 Soil	Type of documentation received	COC
Date documentation received	21/11/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	10.1°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]JAN106

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330947	20 Nov 2024	21 Nov 2024	27 Nov 2024	25 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330947	20 Nov 2024	21 Nov 2024	27 Nov 2024	25 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330947	20 Nov 2024	21 Nov 2024	27 Nov 2024	25 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH10-3.0	SE274540.007	LB330947	20 Nov 2024	21 Nov 2024	27 Nov 2024	25 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH11-2.5	SE274540.010	LB330947	20 Nov 2024	21 Nov 2024	27 Nov 2024	25 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330947	20 Nov 2024	21 Nov 2024	27 Nov 2024	25 Nov 2024	27 Nov 2024	26 Nov 2024

Fibre Identification in soil

Method: ME-(AU)-[ENV]JAS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330761	20 Nov 2024	21 Nov 2024	20 Nov 2025	22 Nov 2024	20 Nov 2025	28 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330761	20 Nov 2024	21 Nov 2024	20 Nov 2025	22 Nov 2024	20 Nov 2025	28 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330761	20 Nov 2024	21 Nov 2024	20 Nov 2025	22 Nov 2024	20 Nov 2025	28 Nov 2024

Mercury in Soil

Method: ME-(AU)-[ENV]JAN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330702	20 Nov 2024	21 Nov 2024	18 Dec 2024	22 Nov 2024	18 Dec 2024	26 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330702	20 Nov 2024	21 Nov 2024	18 Dec 2024	22 Nov 2024	18 Dec 2024	26 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330702	20 Nov 2024	21 Nov 2024	18 Dec 2024	22 Nov 2024	18 Dec 2024	26 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330702	20 Nov 2024	21 Nov 2024	18 Dec 2024	22 Nov 2024	18 Dec 2024	26 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330702	20 Nov 2024	21 Nov 2024	18 Dec 2024	22 Nov 2024	18 Dec 2024	26 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330702	20 Nov 2024	21 Nov 2024	18 Dec 2024	22 Nov 2024	18 Dec 2024	26 Nov 2024
EDP-DSI.024.QC03	SE274540.012	LB330702	20 Nov 2024	21 Nov 2024	18 Dec 2024	22 Nov 2024	18 Dec 2024	26 Nov 2024

Moisture Content

Method: ME-(AU)-[ENV]JAN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330697	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330697	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330697	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330697	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH10-3.0	SE274540.007	LB330697	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330697	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH11-2.5	SE274540.010	LB330697	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330697	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	27 Nov 2024	26 Nov 2024
EDP-DSI.024.QC03	SE274540.012	LB330697	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	27 Nov 2024	26 Nov 2024

OC Pesticides in Soil

Method: ME-(AU)-[ENV]JAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.QC03	SE274540.012	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024

OP Pesticides in Soil

Method: ME-(AU)-[ENV]JAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.QC03	SE274540.012	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]JAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024



HOLDING TIME SUMMARY

SE274540 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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]JAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.QC03	SE274540.012	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024

PCBs in Soil

Method: ME-(AU)-[ENV]JAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	26 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.QC03	SE274540.012	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

Method: ME-(AU)-[ENV]JAN404

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330701	20 Nov 2024	21 Nov 2024	18 Dec 2024	22 Nov 2024	20 Dec 2024	26 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330701	20 Nov 2024	21 Nov 2024	18 Dec 2024	22 Nov 2024	20 Dec 2024	26 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330701	20 Nov 2024	21 Nov 2024	18 Dec 2024	22 Nov 2024	20 Dec 2024	26 Nov 2024

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

Method: ME-(AU)-[ENV]JAN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330698	20 Nov 2024	21 Nov 2024	19 May 2025	22 Nov 2024	19 May 2025	26 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330698	20 Nov 2024	21 Nov 2024	19 May 2025	22 Nov 2024	19 May 2025	26 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330698	20 Nov 2024	21 Nov 2024	19 May 2025	22 Nov 2024	19 May 2025	26 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330698	20 Nov 2024	21 Nov 2024	19 May 2025	22 Nov 2024	19 May 2025	26 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330698	20 Nov 2024	21 Nov 2024	19 May 2025	22 Nov 2024	19 May 2025	26 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330698	20 Nov 2024	21 Nov 2024	19 May 2025	22 Nov 2024	19 May 2025	26 Nov 2024
EDP-DSI.024.QC03	SE274540.012	LB330698	20 Nov 2024	21 Nov 2024	19 May 2025	22 Nov 2024	19 May 2025	26 Nov 2024

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]JAN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024
EDP-DSI.024.QC03	SE274540.012	LB330693	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	01 Jan 2025	27 Nov 2024

VOC's in Soil

Method: ME-(AU)-[ENV]JAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.QC03	SE274540.012	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]JAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH09-0.5	SE274540.001	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.BH09-2.5	SE274540.003	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.BH10-0.5	SE274540.004	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.BH10-1.0	SE274540.005	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.BH11-0.5	SE274540.008	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.BH11-4.0	SE274540.011	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024
EDP-DSI.024.QC03	SE274540.012	LB330696	20 Nov 2024	21 Nov 2024	04 Dec 2024	22 Nov 2024	04 Dec 2024	26 Nov 2024

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	60 - 130%	105
	EDP-DSI.024.BH10-0.5	SE274540.004	%	60 - 130%	94
	EDP-DSI.024.BH11-0.5	SE274540.008	%	60 - 130%	103

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	60 - 130%	106
	EDP-DSI.024.BH10-0.5	SE274540.004	%	60 - 130%	94
	EDP-DSI.024.BH11-0.5	SE274540.008	%	60 - 130%	103
d14-p-terphenyl (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	60 - 130%	104
	EDP-DSI.024.BH10-0.5	SE274540.004	%	60 - 130%	94
	EDP-DSI.024.BH11-0.5	SE274540.008	%	60 - 130%	103

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	70 - 130%	106
	EDP-DSI.024.BH09-2.5	SE274540.003	%	70 - 130%	91
	EDP-DSI.024.BH10-0.5	SE274540.004	%	70 - 130%	94
	EDP-DSI.024.BH10-1.0	SE274540.005	%	70 - 130%	87
	EDP-DSI.024.BH11-0.5	SE274540.008	%	70 - 130%	103
	EDP-DSI.024.BH11-4.0	SE274540.011	%	70 - 130%	118
	EDP-DSI.024..QC03	SE274540.012	%	70 - 130%	95
d14-p-terphenyl (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	70 - 130%	104
	EDP-DSI.024.BH09-2.5	SE274540.003	%	70 - 130%	95
	EDP-DSI.024.BH10-0.5	SE274540.004	%	70 - 130%	94
	EDP-DSI.024.BH10-1.0	SE274540.005	%	70 - 130%	88
	EDP-DSI.024.BH11-0.5	SE274540.008	%	70 - 130%	103
	EDP-DSI.024.BH11-4.0	SE274540.011	%	70 - 130%	117
	EDP-DSI.024..QC03	SE274540.012	%	70 - 130%	93
d5-nitrobenzene (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	70 - 130%	101
	EDP-DSI.024.BH09-2.5	SE274540.003	%	70 - 130%	82
	EDP-DSI.024.BH10-0.5	SE274540.004	%	70 - 130%	90
	EDP-DSI.024.BH10-1.0	SE274540.005	%	70 - 130%	83
	EDP-DSI.024.BH11-0.5	SE274540.008	%	70 - 130%	98
	EDP-DSI.024.BH11-4.0	SE274540.011	%	70 - 130%	110
	EDP-DSI.024..QC03	SE274540.012	%	70 - 130%	91

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	60 - 130%	105
	EDP-DSI.024.BH10-0.5	SE274540.004	%	60 - 130%	94
	EDP-DSI.024.BH11-0.5	SE274540.008	%	60 - 130%	103

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

Method: ME-(AU)-[ENV]AN404

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	40 - 300%	89
	EDP-DSI.024.BH10-0.5	SE274540.004	%	40 - 300%	84
	EDP-DSI.024.BH11-0.5	SE274540.008	%	40 - 300%	86
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	40 - 300%	92
	EDP-DSI.024.BH10-0.5	SE274540.004	%	40 - 300%	89
	EDP-DSI.024.BH11-0.5	SE274540.008	%	40 - 300%	90
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	40 - 300%	91
	EDP-DSI.024.BH10-0.5	SE274540.004	%	40 - 300%	95
	EDP-DSI.024.BH11-0.5	SE274540.008	%	40 - 300%	96
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	40 - 150%	95
	EDP-DSI.024.BH10-0.5	SE274540.004	%	40 - 150%	93
	EDP-DSI.024.BH11-0.5	SE274540.008	%	40 - 150%	96
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	40 - 150%	136
	EDP-DSI.024.BH10-0.5	SE274540.004	%	40 - 150%	130
	EDP-DSI.024.BH11-0.5	SE274540.008	%	40 - 150%	133
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	40 - 150%	85
	EDP-DSI.024.BH10-0.5	SE274540.004	%	40 - 150%	85
	EDP-DSI.024.BH11-0.5	SE274540.008	%	40 - 150%	90

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)

Method: ME-(AU)-[ENV]AN404

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	5 - 150%	93
	EDP-DSI.024.BH10-0.5	SE274540.004	%	5 - 150%	91
	EDP-DSI.024.BH11-0.5	SE274540.008	%	5 - 150%	96
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	40 - 150%	91
	EDP-DSI.024.BH10-0.5	SE274540.004	%	40 - 150%	88
	EDP-DSI.024.BH11-0.5	SE274540.008	%	40 - 150%	94
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	40 - 150%	91
	EDP-DSI.024.BH10-0.5	SE274540.004	%	40 - 150%	90
	EDP-DSI.024.BH11-0.5	SE274540.008	%	40 - 150%	93
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	35 - 150%	93
	EDP-DSI.024.BH10-0.5	SE274540.004	%	35 - 150%	92
	EDP-DSI.024.BH11-0.5	SE274540.008	%	35 - 150%	95
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.BH09-0.5	SE274540.001	%	40 - 150%	87
	EDP-DSI.024.BH10-0.5	SE274540.004	%	40 - 150%	86
	EDP-DSI.024.BH11-0.5	SE274540.008	%	40 - 150%	93

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	60 - 130%	88
	EDP-DSI.024.BH09-2.5	SE274540.003	%	60 - 130%	94
	EDP-DSI.024.BH10-0.5	SE274540.004	%	60 - 130%	100
	EDP-DSI.024.BH10-1.0	SE274540.005	%	60 - 130%	95
	EDP-DSI.024.BH11-0.5	SE274540.008	%	60 - 130%	104
	EDP-DSI.024.BH11-4.0	SE274540.011	%	60 - 130%	95
	EDP-DSI.024.QC03	SE274540.012	%	60 - 130%	99
d4-1,2-dichloroethane (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	60 - 130%	81
	EDP-DSI.024.BH09-2.5	SE274540.003	%	60 - 130%	83
	EDP-DSI.024.BH10-0.5	SE274540.004	%	60 - 130%	93
	EDP-DSI.024.BH10-1.0	SE274540.005	%	60 - 130%	85
	EDP-DSI.024.BH11-0.5	SE274540.008	%	60 - 130%	97
	EDP-DSI.024.BH11-4.0	SE274540.011	%	60 - 130%	83
	EDP-DSI.024.QC03	SE274540.012	%	60 - 130%	92
d8-toluene (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	60 - 130%	83
	EDP-DSI.024.BH09-2.5	SE274540.003	%	60 - 130%	85
	EDP-DSI.024.BH10-0.5	SE274540.004	%	60 - 130%	93
	EDP-DSI.024.BH10-1.0	SE274540.005	%	60 - 130%	87
	EDP-DSI.024.BH11-0.5	SE274540.008	%	60 - 130%	96
	EDP-DSI.024.BH11-4.0	SE274540.011	%	60 - 130%	84
	EDP-DSI.024.QC03	SE274540.012	%	60 - 130%	92

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	60 - 130%	88
	EDP-DSI.024.BH09-2.5	SE274540.003	%	60 - 130%	94
	EDP-DSI.024.BH10-0.5	SE274540.004	%	60 - 130%	100
	EDP-DSI.024.BH10-1.0	SE274540.005	%	60 - 130%	95
	EDP-DSI.024.BH11-0.5	SE274540.008	%	60 - 130%	104
	EDP-DSI.024.BH11-4.0	SE274540.011	%	60 - 130%	95
	EDP-DSI.024.QC03	SE274540.012	%	60 - 130%	99
d4-1,2-dichloroethane (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	60 - 130%	81
	EDP-DSI.024.BH09-2.5	SE274540.003	%	60 - 130%	83
	EDP-DSI.024.BH10-0.5	SE274540.004	%	60 - 130%	93
	EDP-DSI.024.BH10-1.0	SE274540.005	%	60 - 130%	85
	EDP-DSI.024.BH11-0.5	SE274540.008	%	60 - 130%	97
	EDP-DSI.024.BH11-4.0	SE274540.011	%	60 - 130%	83
	EDP-DSI.024.QC03	SE274540.012	%	60 - 130%	92
d8-toluene (Surrogate)	EDP-DSI.024.BH09-0.5	SE274540.001	%	60 - 130%	83
	EDP-DSI.024.BH09-2.5	SE274540.003	%	60 - 130%	85
	EDP-DSI.024.BH10-0.5	SE274540.004	%	60 - 130%	93
	EDP-DSI.024.BH10-1.0	SE274540.005	%	60 - 130%	87
	EDP-DSI.024.BH11-0.5	SE274540.008	%	60 - 130%	96
	EDP-DSI.024.BH11-4.0	SE274540.011	%	60 - 130%	84



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 identifier 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 %
d8-toluene (Surrogate)	EDP-DSI.024..QC03	SE274540.012	%	60 - 130%	92

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.

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result
LB330947.001	Conductivity of Extract (1:5 as received)	µS/cm	1	<1
	Salinity (by calculation)*	mg/kg	5	<5

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB330702.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB330693.001	Alpha BHC	mg/kg	0.1	<0.1
	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Lindane (gamma BHC)	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.1	<0.1
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.1	<0.1
	Endrin	mg/kg	0.1	<0.1
	Beta Endosulfan	mg/kg	0.1	<0.1
	p,p'-DDD	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endrin ketone	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
	Mirex	mg/kg	0.1	<0.1
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	105

OP Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB330693.001	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Bromophos Ethyl	mg/kg	0.2	<0.2
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
	Diazinon (Dimpylate)	mg/kg	0.5	<0.5
	Dichlorvos	mg/kg	0.5	<0.5
	Dimethoate	mg/kg	0.5	<0.5
	Ethion	mg/kg	0.2	<0.2
	Fenitrothion	mg/kg	0.2	<0.2
	Malathion	mg/kg	0.2	<0.2
	Methidathion	mg/kg	0.5	<0.5
	Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	2-fluorobiphenyl (Surrogate)	%	-	107
Surrogates	d14-p-terphenyl (Surrogate)	%	-	104

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB330693.001	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

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.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Number	Parameter	Units	LOR	Result
LB330693.001	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)	%	-	103
	2-fluorobiphenyl (Surrogate)	%	-	107
	d14-p-terphenyl (Surrogate)	%	-	104

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB330693.001	Arochlor 1016	mg/kg	0.1	<0.1
	Arochlor 1221	mg/kg	0.1	<0.1
	Arochlor 1232	mg/kg	0.1	<0.1
	Arochlor 1242	mg/kg	0.1	<0.1
	Arochlor 1248	mg/kg	0.1	<0.1
	Arochlor 1254	mg/kg	0.1	<0.1
	Arochlor 1260	mg/kg	0.1	<0.1
	Total PCBs	mg/kg	0.1	<0
	Surrogates			
	TCMX (Surrogate)	%	-	105

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

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

Sample Number	Parameter	Units	LOR	Result
LB330701.001	Perfluorobutanoic acid (PFBA)	mg/kg	0.005	<0.005
	Perfluoropentanoic acid (PFPeA)	mg/kg	0.005	<0.005
	Perfluorohexanoic acid (PFHxA)	mg/kg	0.005	<0.005
	Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005	<0.005
	Perfluorooctanoic acid (PFOA)	mg/kg	0.005	<0.005
	Perfluoropropane sulfonic acid (PFPrS)	mg/kg	0.005	<0.005
	Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.005	<0.005
	Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.005	<0.005
	Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.005	<0.005
	Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005	<0.005
	Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005	<0.005
	Perfluorononane sulfonic acid (PFNS)	mg/kg	0.005	<0.005
	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	mg/kg	0.005	<0.005
	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	mg/kg	0.005	<0.005
	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	mg/kg	0.005	<0.005
	1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2 FTS)	mg/kg	0.005	<0.005

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

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

Sample Number	Parameter	Units	LOR	Result
LB330698.001	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
LB330693.001	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
---------------	-----------	-------	-----

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.

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB330696.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		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 (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	94
		d8-toluene (Surrogate)	%	-	93
		Bromofluorobenzene (Surrogate)	%	-	103
	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
LB330696.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	94

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]AN106

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274540.011	LB330947.025	Conductivity of Extract (1:5 as received)	µS/cm	1	240	260	31	6
		Salinity (by calculation)*	mg/kg	5	940	1000	31	6

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274523.004	LB330702.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE274540.003	LB330702.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274523.003	LB330697.022	% Moisture	%w/w	1	5.7	5.4	48	5
SE274523.004	LB330697.024	% Moisture	%w/w	1	6.2	6.4	46	2
SE274540.003	LB330697.011	% Moisture	%w/w	1	19.9	18.8	35	6

OC Pesticides in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274523.004	LB330693.024	Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin	mg/kg	0.1	<0.1	<0.1	200	0
		Beta Endosulfan	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Total OC Pesticides	mg/kg	1	<1	<1	200	0
		Total OC VIC EPA IWRG621	mg/kg	1	<1	<1	200	0
		Total Other OCP VIC EPA IWRG621	mg/kg	1	<1	<1	200	0
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.55	0.56	30	3
SE274540.004	LB330693.026	Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin	mg/kg	0.1	<0.1	<0.1	200	0
		Beta Endosulfan	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274540.004	LB330693.026	Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Total OC Pesticides	mg/kg	1	<1	<1	200	0
		Total OC VIC EPA IWRG621	mg/kg	1	<1	<1	200	0
		Total Other OCP VIC EPA IWRG621	mg/kg	1	<1	<1	200	0
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.47	0.48	30	1

OP Pesticides in Soil

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274523.004	LB330693.024	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Methodathion	mg/kg	0.5	<0.5	<0.5	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
		Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.6	0.6	30	4
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.6	30	3
SE274540.004	LB330693.026	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Methodathion	mg/kg	0.5	<0.5	<0.5	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
		Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274523.004	LB330693.024	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	0.2	0.2	78	8
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	0.5	0.5	51	13
		Pyrene	mg/kg	0.1	0.5	0.4	51	12
		Benzo(a)anthracene	mg/kg	0.1	0.2	0.2	78	15
		Chrysene	mg/kg	0.1	0.2	0.2	79	12
		Benzo(b&j)fluoranthene	mg/kg	0.1	0.2	0.2	76	12
		Benzo(k)fluoranthene	mg/kg	0.1	0.3	0.2	71	12
		Benzo(a)pyrene	mg/kg	0.1	0.3	0.3	63	13
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.2	0.2	81	5
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	0.2	0.2	79	11
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0.4	0.4	61	12
		TEQ (mg/kg)		0.2	0.4	0.4	61	12
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.5	0.4	55	11

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274523.004	LB330693.024	Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	0.5	0.4	55	11
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.5	0.5	71	10
			TEQ (mg/kg)	0.3	0.5	0.5	71	10
		Total PAH (18)	mg/kg	0.8	2.9	2.6	34	12
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.6	0.6	30	4
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.6	30	3
SE274540.004	LB330693.026	Naphthalene	mg/kg	0.1	<0.1	<0.1	174	0
		2-methylnaphthalene	mg/kg	0.1	0.3	0.3	69	3
		1-methylnaphthalene	mg/kg	0.1	0.2	0.2	86	4
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	0.1	0.1	107	1
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		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	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	48	3
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	0
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0

PCBs in Soil

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274523.004	LB330693.024	Arochlor 1016	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1221	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1232	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1242	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1248	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1254	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1260	mg/kg	0.1	<0.1	<0.1	200	0
		Total PCBs	mg/kg	0.1	<0.1	<0.1	200	0
SE274540.004	LB330693.026	TCMX (Surrogate)	mg/kg	-	0.55	0.56	30	3
		Arochlor 1016	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1221	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1232	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1242	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1248	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1254	mg/kg	0.1	<0.1	<0.1	200	0
		Arochlor 1260	mg/kg	0.1	<0.1	<0.1	200	0
		TCMX (Surrogate)	mg/kg	-	0.47	0.48	30	1

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

Method: ME-(AU)-ENVJAN404

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274537.005	LB330701.015	Perfluorobutanoic acid (PFBA)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluoropentanoic acid (PFPeA)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorohexanoic acid (PFHxA)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorooctanoic acid (PFOA)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluoropropane sulfonic acid (PFPrS)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.005	<0.005	<0.005	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)

Method: ME-(AU)-[ENV]JAN404

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274537.005	LB330701.015	Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorononane sulfonic acid (PFNS)	mg/kg	0.005	<0.005	<0.005	200	0
		1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	mg/kg	0.005	<0.005	<0.005	200	0
		1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	mg/kg	0.005	<0.005	<0.005	200	0
		1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	mg/kg	0.005	<0.005	<0.005	200	0
		1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2)	mg/kg	0.005	<0.005	<0.005	200	0
		(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	93	92	200	1
		(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	89	93	200	4
		(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	88	90	200	2
		(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	92	94	200	2
		(13C4-PFOA) Isotopically Labelled Internal Recovery	%	-	93	91	200	3
		(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	91	92	200	1
		(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	130	132	200	2
		(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	91	96	200	5
		(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	81	83	200	2
		(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	82	88	200	7
		(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	86	96	200	11

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

Method: ME-(AU)-[ENV]JAN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274523.004	LB330698.024	Arsenic, As	mg/kg	1	2	2	94	6
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	2.0	2.9	50	37
		Copper, Cu	mg/kg	0.5	110	88	31	23
		Nickel, Ni	mg/kg	0.5	3.6	4.6	42	25
		Lead, Pb	mg/kg	1	5	8	45	35
		Zinc, Zn	mg/kg	2	24	23	39	8
SE274540.003	LB330698.014	Arsenic, As	mg/kg	1	4	5	51	28
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	15	16	33	8
		Copper, Cu	mg/kg	0.5	20	27	32	27
		Nickel, Ni	mg/kg	0.5	10	13	34	24
		Lead, Pb	mg/kg	1	16	18	36	10
		Zinc, Zn	mg/kg	2	41	58	34	34 @

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]JAN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274523.004	LB330693.024	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	<45	<45	200	0
		TRH C29-C36	mg/kg	45	<45	<45	196	0
		TRH C37-C40	mg/kg	100	<100	<100	200	0
		TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands						
		TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
SE274540.004	LB330693.026	TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
		TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	<45	<45	200	0
		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	<110	<110	200	0
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands						
		TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

VOC's in Soil

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE274523.004	LB330696.024	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200
			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 (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.8	8.9	50	2
			d8-toluene (Surrogate)	mg/kg	-	9.0	9.0	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.8	9.8	50	0
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
		SE274540.003	LB330696.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1
Aromatic	Toluene				mg/kg	0.1	<0.1	<0.1	200
	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 (VOC)*			mg/kg	0.1	<0.1	<0.1	200	0
Surrogates	d4-1,2-dichloroethane (Surrogate)			mg/kg	-	8.3	7.8	50	6
	d8-toluene (Surrogate)			mg/kg	-	8.5	7.9	50	7
	Bromofluorobenzene (Surrogate)			mg/kg	-	9.4	9.0	50	5
Totals	Total BTEX*			mg/kg	0.6	<0.6	<0.6	200	0
	Total Xylenes*			mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-ENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE274523.004	LB330696.024	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	-	8.8	8.9	50	2
		d8-toluene (Surrogate)	mg/kg	-	9.0	9.0	50	1	
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.8	9.8	50	0	
		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	
SE274540.003	LB330696.014	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	-	8.3	7.8	50	6
		d8-toluene (Surrogate)	mg/kg	-	8.5	7.9	50	7	
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	9.0	50	5	
		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.

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB330947.002	Conductivity of Extract (1:5 as received)	µS/cm	1	310	303	85 - 115	101

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB330702.002	Mercury	mg/kg	0.05	0.21	0.2	80 - 120	105

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB330693.002	Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	104
	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	101
	Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	101
	Dieldrin	mg/kg	0.1	0.2	0.2	60 - 140	105
	Endrin	mg/kg	0.1	0.2	0.2	60 - 140	93
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	100
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.53	0.5	40 - 130	106

OP Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB330693.002	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.3	2	60 - 140	115
	Diazinon (Dimpylate)	mg/kg	0.5	1.9	2	60 - 140	97
	Dichlorvos	mg/kg	0.5	1.7	2	60 - 140	87
	Ethion	mg/kg	0.2	2.3	2	60 - 140	114
	Surrogates						
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	109
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	99

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB330693.002	Naphthalene	mg/kg	0.1	4.2	4	60 - 140	105
	Acenaphthylene	mg/kg	0.1	4.5	4	60 - 140	112
	Acenaphthene	mg/kg	0.1	4.3	4	60 - 140	106
	Phenanthrene	mg/kg	0.1	4.7	4	60 - 140	117
	Anthracene	mg/kg	0.1	4.4	4	60 - 140	110
	Fluoranthene	mg/kg	0.1	4.4	4	60 - 140	109
	Pyrene	mg/kg	0.1	4.6	4	60 - 140	115
	Benzo(a)pyrene	mg/kg	0.1	5.4	4	60 - 140	136
	Surrogates						
	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	101
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	109
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	99

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB330693.002	Arochlor 1260	mg/kg	0.1	0.4	0.4	60 - 140	92
Surrogates	TCMX (Surrogate)	mg/kg	-	0.53	0.5	40 - 130	106

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

Method: ME-(AU)-[ENV]AN404

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB330701.002	Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005	<0.005	0.004	40 - 160	84
	Perfluorooctanoic acid (PFOA)	mg/kg	0.005	<0.005	0.004	40 - 160	84
	Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005	<0.005	0.004	40 - 160	78

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

Method: ME-(AU)-[ENV]AN404/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB330698.002	Arsenic, As	mg/kg	1	320	318.22	80 - 120	100
	Cadmium, Cd	mg/kg	0.3	3.9	4.81	70 - 130	82
	Chromium, Cr	mg/kg	0.5	35	38.31	80 - 120	91
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	102
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	96
	Lead, Pb	mg/kg	1	86	89.9	80 - 120	95
	Zinc, Zn	mg/kg	2	270	273	80 - 120	98

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.

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB330693.002	TRH C10-C14	mg/kg	20	42	40	60 - 140	106	
	TRH C15-C28	mg/kg	45	<45	40	60 - 140	87	
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	85	
	TRH F Bands	TRH >C10-C16	mg/kg	25	40	40	60 - 140	101
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	85
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	87

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB330696.002	Monocyclic	Benzene	mg/kg	0.1	4.2	5	60 - 140	84
	Aromatic	Toluene	mg/kg	0.1	4.3	5	60 - 140	86
		Ethylbenzene	mg/kg	0.1	4.4	5	60 - 140	87
		m/p-xylene	mg/kg	0.2	8.5	10	60 - 140	85
		o-xylene	ma/ka	0.1	4.5	5	60 - 140	89

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB330696.002	TRH C6-C10	mg/kg	25	73	92.5	60 - 140	78
	TRH C6-C9	mg/kg	20	63	80	60 - 140	78
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	47	62.5	60 - 140

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 identifier 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%
SE274349.020	LB330702.004	Mercury	mg/kg	0.05	0.27	<0.05	0.2	114

OC Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE274349.020	LB330693.004	Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
		Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
		Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	105
		Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	103
		Aldrin	mg/kg	0.1	0.2	<0.1	0.2	101
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Endosulfan	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
		Dieldrin	mg/kg	0.1	0.2	<0.1	0.2	102
		Endrin	mg/kg	0.1	0.2	<0.1	0.2	98
		Beta Endosulfan	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	109
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
		Mirex	mg/kg	0.1	<0.1	<0.1	-	-
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.51	0.53	-	102	

OP Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE274349.020	LB330693.004	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.3	<0.2	2	114
		Diazinon (Dimpylate)	mg/kg	0.5	1.9	<0.5	2	95
		Dichlorvos	mg/kg	0.5	1.7	<0.5	2	87
		Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
		Ethion	mg/kg	0.2	2.2	<0.2	2	112
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
		Malathion	mg/kg	0.2	<0.2	<0.2	-	-
		Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
		Total OP Pesticides*	mg/kg	1.7	8.2	<1.7	-	-
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	103
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	95

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE274349.020	LB330693.004	Naphthalene	mg/kg	0.1	4.1	<0.1	4	103
		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	4.3	<0.1	4	107
		Acenaphthene	mg/kg	0.1	4.1	<0.1	4	103
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	4.5	<0.1	4	113
		Anthracene	mg/kg	0.1	4.2	<0.1	4	105
		Fluoranthene	mg/kg	0.1	4.1	<0.1	4	104
		Pyrene	mg/kg	0.1	4.3	<0.1	4	108
		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	-	-

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]JAN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE274349.020	LB330693.004	Benzo(a)pyrene	mg/kg	0.1	5.3	<0.1	4	131
		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	5.3	<0.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	5.3	<0.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	5.4	<0.3	-	-
		Total PAH (18)	mg/kg	0.8	35	<0.8	-	-
		Surrogates						
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	96
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	103
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	95

PCBs in Soil

Method: ME-(AU)-[ENV]JAN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE274349.020	LB330693.004	Arochlor 1016	mg/kg	0.1	<0.1	<0.2	-	-
		Arochlor 1221	mg/kg	0.1	<0.1	<0.1	-	-
		Arochlor 1232	mg/kg	0.1	<0.1	<0.2	-	-
		Arochlor 1242	mg/kg	0.1	<0.1	<0.2	-	-
		Arochlor 1248	mg/kg	0.1	<0.1	<0.2	-	-
		Arochlor 1254	mg/kg	0.1	<0.1	<0.2	-	-
		Arochlor 1260	mg/kg	0.1	0.4	<0.2	0.4	92
		Surrogates	TCMX (Surrogate)	mg/kg	-	0.51	0.53	102

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

Method: ME-(AU)-[ENV]JAN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE274349.020	LB330698.004	Arsenic, As	mg/kg	1	43	2	50	81
		Cadmium, Cd	mg/kg	0.3	40	<0.3	50	79
		Chromium, Cr	mg/kg	0.5	42	6.9	50	71
		Copper, Cu	mg/kg	0.5	45	4.6	50	80
		Nickel, Ni	mg/kg	0.5	44	3.9	50	80
		Zinc, Zn	mg/kg	2	89	48	50	81

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]JAN403

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE274349.020	LB330693.004	TRH C10-C14	mg/kg	20	55	<20	40	101
		TRH C15-C28	mg/kg	45	200	170	40	63
		TRH C29-C36	mg/kg	45	210	170	40	101
		TRH C37-C40	mg/kg	100	<100	<100	-	-
		TRH C10-C36 Total	mg/kg	110	460	340	-	-
		TRH >C10-C40 Total (F bands)	mg/kg	210	530	440	-	-
		TRH >C10-C16	mg/kg	25	53	<25	40	93
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	53	<25	-	-
		TRH >C16-C34 (F3)	mg/kg	90	310	280	40	68
		TRH >C34-C40 (F4)	mg/kg	120	160	150	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]JAN433

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE274349.020	LB330696.004	Monocyclic	Benzen	mg/kg	0.1	<0.1	5	90
			Toluene	mg/kg	0.1	<0.1	5	92
		Aromatic	Ethylbenzene	mg/kg	0.1	<0.1	5	93
			m/p-xylene	mg/kg	0.2	<0.2	10	90
			o-xylene	mg/kg	0.1	<0.1	5	95
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.5	10.4	105
			d8-toluene (Surrogate)	mg/kg	-	10.2	10.3	102
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.0	11.2	100
		Totals	Total BTEX*	mg/kg	0.6	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]JAN433

QC Sample	Sample Number	Parameter	Units	LOR
-----------	---------------	-----------	-------	-----

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 identifier 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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE274349.020	LB330696.004	TRH C6-C10	mg/kg	25	79	<25	92.5	84
		TRH C6-C9	mg/kg	20	68	<20	80	84
		Surrogates						
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.5	10.4	-	105
		d8-toluene (Surrogate)	mg/kg	-	10.2	10.3	-	102
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.0	11.2	-	100
		VPH F						
		Benzene (F0)	mg/kg	0.1	4.5	<0.1	-	-
	Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	51	<25	62.5	80

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the

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.
- *** Indicates that both * and ** apply.
- 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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law .

This test report shall not be reproduced, except in full.

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.137-WX**
Order Number **S-05667.137-WX**
Samples 12

LABORATORY DETAILS

Manager Shane McDermott
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 **SE274540 R0**
Date Received 21/11/2024
Date Reported 28/11/2024

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.

A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Cameron Smith.

SIGNATORIES



Dong LIANG
Metals/Inorganics Team Leader



Ly Kim HA
Organic Section Head



Ravee SIVASUBRAMANIAM
Hygiene Team Leader



Shane MCDERMOTT
Laboratory Manager



Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 22/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH09-0	EDP-DSI.024.BH09-2	EDP-DSI.024.BH10-0	EDP-DSI.024.BH10-1	EDP-DSI.024.BH11-0
			5	5	5	0	5
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
			SE274540.001	SE274540.003	SE274540.004	SE274540.005	SE274540.008
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	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
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	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
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	EDP-DSI.024.BH11-4	EDP-DSI.024..QC03
			0	
			SOIL	SOIL
			-	-
			20/11/2024	20/11/2024
			SE274540.011	SE274540.012
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 22/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH09-0	EDP-DSI.024.BH09-2	EDP-DSI.024.BH10-0	EDP-DSI.024.BH10-1	EDP-DSI.024.BH11-0
			5	5	5	0	5
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
			SE274540.001	SE274540.003	SE274540.004	SE274540.005	SE274540.008
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	EDP-DSI.024.BH11-4	EDP-DSI.024.QC03
			0	
			SOIL	SOIL
			-	-
			20/11/2024	20/11/2024
			SE274540.011	SE274540.012
TRH C6-C9	mg/kg	20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 22/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH09-0	EDP-DSI.024.BH09-2	EDP-DSI.024.BH10-0	EDP-DSI.024.BH10-1	EDP-DSI.024.BH11-0
			5	5	5	0	5
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
			SE274540.001	SE274540.003	SE274540.004	SE274540.005	SE274540.008
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	EDP-DSI.024.BH11-4	EDP-DSI.024.QC03
			0	
			SOIL	SOIL
			-	-
			20/11/2024	20/11/2024
			SE274540.011	SE274540.012
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 22/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH09-0	EDP-DSI.024.BH09-2	EDP-DSI.024.BH10-0	EDP-DSI.024.BH10-1	EDP-DSI.024.BH11-0
			5 SOIL -	5 SOIL -	5 SOIL -	0 SOIL -	5 SOIL -
			20/11/2024 SE274540.001	20/11/2024 SE274540.003	20/11/2024 SE274540.004	20/11/2024 SE274540.005	20/11/2024 SE274540.008
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	0.2	<0.1	0.3	0.3	0.4
1-methylnaphthalene	mg/kg	0.1	0.2	<0.1	0.2	0.2	0.3
Acenaphthylene	mg/kg	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	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.1	<0.1	0.1	0.1	0.2
Anthracene	mg/kg	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	<0.1
Pyrene	mg/kg	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	<0.1
Chrysene	mg/kg	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	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<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	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	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
Benzo(ghi)perylene	mg/kg	0.1	<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	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<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	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	0.9
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	EDP-DSI.024.BH11-4	EDP-DSI.024..QC03
			0 SOIL -	SOIL -
			20/11/2024 SE274540.011	20/11/2024 SE274540.012
Naphthalene	mg/kg	0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	0.4
1-methylnaphthalene	mg/kg	0.1	<0.1	0.3
Acenaphthylene	mg/kg	0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	0.2
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1
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	<0.1	<0.1
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	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 22/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH09-0	EDP-DSI.024.BH10-0	EDP-DSI.024.BH11-0
			5 SOIL - 20/11/2024 SE274540.001	5 SOIL - 20/11/2024 SE274540.004	5 SOIL - 20/11/2024 SE274540.008
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1
Total OC Pesticides	mg/kg	1	<1	<1	<1
Total OC VIC EPA IWRG621	mg/kg	1	<1	<1	<1
Total Other OCP VIC EPA IWRG621	mg/kg	1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 22/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH09-0	EDP-DSI.024.BH10-0	EDP-DSI.024.BH11-0
			5	5	5
			SOIL	SOIL	SOIL
			-	-	-
			20/11/2024	20/11/2024	20/11/2024
			SE274540.001	SE274540.004	SE274540.008
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7



ANALYTICAL RESULTS

SE274540 R0

PCBs in Soil [AN420] Tested: 22/11/2024

			EDP-DSI.024.BH09-0	EDP-DSI.024.BH10-0	EDP-DSI.024.BH11-0
			5 SOIL - 20/11/2024 SE274540.001	5 SOIL - 20/11/2024 SE274540.004	5 SOIL - 20/11/2024 SE274540.008
PARAMETER	UOM	LOR			
Arochlor 1016	mg/kg	0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	0.1	<0.1	<0.1	<0.1
Total PCBs	mg/kg	0.1	<0.1	<0.1	<0.1



ANALYTICAL RESULTS

SE274540 R0

Conductivity and TDS by Calculation - Soil [AN106] Tested: 25/11/2024

			EDP-DSI.024.BH09-0	EDP-DSI.024.BH09-2	EDP-DSI.024.BH10-1	EDP-DSI.024.BH10-3	EDP-DSI.024.BH11-2
			5 SOIL - 20/11/2024 SE274540.001	5 SOIL - 20/11/2024 SE274540.003	0 SOIL - 20/11/2024 SE274540.005	0 SOIL - 20/11/2024 SE274540.007	5 SOIL - 20/11/2024 SE274540.010
PARAMETER	UOM	LOR					
Conductivity of Extract (1:5 as received)	µS/cm	1	130	290	190	350	230
Salinity (by calculation)*	mg/kg	5	460	1200	690	1300	880

			EDP-DSI.024.BH11-4
			0 SOIL - 20/11/2024 SE274540.011
PARAMETER	UOM	LOR	
Conductivity of Extract (1:5 as received)	µS/cm	1	240
Salinity (by calculation)*	mg/kg	5	940

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 22/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH09-0	EDP-DSI.024.BH09-2	EDP-DSI.024.BH10-0	EDP-DSI.024.BH10-1	EDP-DSI.024.BH11-0
			5	5	5	0	5
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
			SE274540.001	SE274540.003	SE274540.004	SE274540.005	SE274540.008
Arsenic, As	mg/kg	1	5	4	4	5	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.5	15	7.2	8.9	6.7
Copper, Cu	mg/kg	0.5	28	20	29	30	21
Lead, Pb	mg/kg	1	16	16	13	13	12
Nickel, Ni	mg/kg	0.5	22	10	13	15	12
Zinc, Zn	mg/kg	2	60	41	51	66	50

PARAMETER	UOM	LOR	EDP-DSI.024.BH11-4	EDP-DSI.024..QC03
			0	
			SOIL	SOIL
			-	-
			20/11/2024	20/11/2024
			SE274540.011	SE274540.012
Arsenic, As	mg/kg	1	7	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	17	8.9
Copper, Cu	mg/kg	0.5	20	31
Lead, Pb	mg/kg	1	26	14
Nickel, Ni	mg/kg	0.5	11	14
Zinc, Zn	mg/kg	2	43	60



ANALYTICAL RESULTS

SE274540 R0

Mercury in Soil [AN312] Tested: 22/11/2024

			EDP-DSI.024.BH09-0	EDP-DSI.024.BH09-2	EDP-DSI.024.BH10-0	EDP-DSI.024.BH10-1	EDP-DSI.024.BH11-0
			5 SOIL - 20/11/2024 SE274540.001	5 SOIL - 20/11/2024 SE274540.003	5 SOIL - 20/11/2024 SE274540.004	0 SOIL - 20/11/2024 SE274540.005	5 SOIL - 20/11/2024 SE274540.008
PARAMETER	UOM	LOR					
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

			EDP-DSI.024.BH11-4	EDP-DSI.024..QC03
			0 SOIL - 20/11/2024 SE274540.011	SOIL - 20/11/2024 SE274540.012
PARAMETER	UOM	LOR		
Mercury	mg/kg	0.05	<0.05	<0.05



ANALYTICAL RESULTS

SE274540 R0

Moisture Content [AN002] Tested: 22/11/2024

			EDP-DSI.024.BH09-0	EDP-DSI.024.BH09-2	EDP-DSI.024.BH10-0	EDP-DSI.024.BH10-1	EDP-DSI.024.BH10-3
			5	5	5	0	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
PARAMETER	UOM	LOR	SE274540.001	SE274540.003	SE274540.004	SE274540.005	SE274540.007
% Moisture	%w/w	1	9.2	19.9	10.4	11.1	13.7

			EDP-DSI.024.BH11-0	EDP-DSI.024.BH11-2	EDP-DSI.024.BH11-4	EDP-DSI.024..QC03
			5	5	0	
			SOIL	SOIL	SOIL	SOIL
			-	-	-	-
			20/11/2024	20/11/2024	20/11/2024	20/11/2024
PARAMETER	UOM	LOR	SE274540.008	SE274540.010	SE274540.011	SE274540.012
% Moisture	%w/w	1	7.5	13.9	16.5	7.8

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [AN404] Tested: 22/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH09-0	EDP-DSI.024.BH10-0	EDP-DSI.024.BH11-0
			5	5	5
			SOIL	SOIL	SOIL
			-	-	-
			20/11/2024	20/11/2024	20/11/2024
			SE274540.001	SE274540.004	SE274540.008
Perfluorobutanoic acid (PFBA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoropentanoic acid (PFPeA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorohexanoic acid (PFHxA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorooctanoic acid (PFOA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoropropane sulfonic acid (PFPrS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorononane sulfonic acid (PFNS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2)	mg/kg	0.005	<0.005	<0.005	<0.005
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.005	<0.005	<0.005	<0.005
Sum PFOS and PFHxS	mg/kg	0.005	<0.005	<0.005	<0.005
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.005	<0.005	<0.005	<0.005



ANALYTICAL RESULTS

SE274540 R0

Fibre Identification in soil [AS4964/AN602] Tested: 22/11/2024

			EDP-DSI.024.BH09-0	EDP-DSI.024.BH10-0	EDP-DSI.024.BH11-0
			5 SOIL - 20/11/2024 SE274540.001	5 SOIL - 20/11/2024 SE274540.004	5 SOIL - 20/11/2024 SE274540.008
PARAMETER	UOM	LOR			
Asbestos Detected	No unit	-	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	27/11/2024 00:00	27/11/2024 00:00	27/11/2024 00:00

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/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.
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 AAS or ICP as per USEPA Method 200.8.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as $\mu\text{mhos/cm}$ or $\mu\text{S/cm}$ @ 25°C. For soils, an extract of as received sample with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2510 B.
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.
AN404	This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts. After spiking with isotopically labelled quantification surrogates and sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification. PFOS and PFHXS are determined as the total of linear and branched isomers.
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). Total PAH calculated from individual analyte detections at or above the limit of reporting.
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
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.
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602/AS4964

The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if-

- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres);
- (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and
- (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
		IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
***	Indicates that both * and ** apply.	LNR	Sample listed, but not received.		

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 calculated 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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

This report must not be reproduced, except in full.



SAMPLE RECEIPT ADVICE

SE274540

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.137-WX**
Order Number **S-05667.137-WX**
Samples 12

LABORATORY DETAILS

Manager Shane McDermott
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 Thu 21/11/2024
Report Due Thu 28/11/2024
SGS Reference **SE274540**

SUBMISSION DETAILS

This is to confirm that 12 samples were received on Thursday 21/11/2024. Results are expected to be ready by COB Thursday 28/11/2024. Please quote SGS reference SE274540 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	9 Soil	Type of documentation received	COC
Date documentation received	21/11/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	10.1°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

pHf/pHfox reported in SE274540A.
A separate portion was not supplied for Asbestos analysis. A sub-sample will be used from the jar provided.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



SAMPLE RECEIPT ADVICE

SE274540

CLIENT DETAILS

Client EDP CONSULTANTS PTY LTD

Project S-05667.137-WX

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	EDP-DSI.024.BH09-0.5	2	25	14	26	9	10	11	7
003	EDP-DSI.024.BH09-2.5	2	-	-	26	-	10	11	7
004	EDP-DSI.024.BH10-0.5	-	25	14	26	9	10	11	7
005	EDP-DSI.024.BH10-1.0	2	-	-	26	-	10	11	7
007	EDP-DSI.024.BH10-3.0	2	-	-	-	-	-	-	-
008	EDP-DSI.024.BH11-0.5	-	25	14	26	9	10	11	7
010	EDP-DSI.024.BH11-2.5	2	-	-	-	-	-	-	-
011	EDP-DSI.024.BH11-4.0	2	-	-	26	-	10	11	7
012	EDP-DSI.024..QC03	-	-	-	26	-	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

SE274540

CLIENT DETAILS

Client EDP CONSULTANTS PTY LTD

Project S-05667.137-WX

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Per- and Polyfluoroalkyl Substances (PFAS) in	Total Recoverable Elements in Soil/Waste
001	EDP-DSI.024.BH09-0.5	3	1	1	30	7
003	EDP-DSI.024.BH09-2.5	-	1	1	-	7
004	EDP-DSI.024.BH10-0.5	3	1	1	30	7
005	EDP-DSI.024.BH10-1.0	-	1	1	-	7
007	EDP-DSI.024.BH10-3.0	-	-	1	-	-
008	EDP-DSI.024.BH11-0.5	3	1	1	30	7
010	EDP-DSI.024.BH11-2.5	-	-	1	-	-
011	EDP-DSI.024.BH11-4.0	-	1	1	-	7
012	EDP-DSI.024..QC03	-	1	1	-	7

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 .

Request for Laboratory Services and Chain of Custody Form

Received Date: 2/11/2024	Received By: [Signature]	Time of Receipt: 11:15
Laboratory Section		
COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge		
Invoice To:		
Name: Cristiane Flondo	Company: EDP Consultants Pty Ltd	Address: Level 4 38 Oxley Street, St Leonards NSW 2065
Email: invoices@edp-pty.com , Project.admin@edp-pty.com , Cristiane.Flondo@edp-pty.com	Phone: 0413 378 102	Fax:
Client Information		
Project No.: S-05667.137 - WX	PO No.:	
Company Name: EDP Consultants Pty Ltd		
Contact Name: Cristiane Flondo	Sampers: William Xu	Address: Level 4 38 Oxley Street, St Leonards NSW 2065
Phone Number: 0413 378 102 / 0452 316 267	After Hours Phone Number: NA	Fax Number: NA
Notes: Standard TA for all analytes except pH/pHTox (24 Hours)		
Results Required By: Standard TA except pH/pHTox ☐ yes ☒ no		
Replacement Sample Containers Required: ☐ yes ☒ no		
Attached Parameter List: ☐ yes ☒ no		
Quote #:		

Company Name: EDP Consultants Pty Ltd	
Contact Name: Cristiane Flondo	Sampers: William Xu
Address: Level 4 38 Oxley Street, St Leonards NSW 2065	
Phone Number: 0413 378 102 / 0452 316 267	After Hours Phone Number: NA
Fax Number: NA	Cristiane.Flondo@edp-pty.com , Project.admin@edp-pty.com , William.Xu@edp-pty.com , mf12@edp-pty.com
Note: Results will be sent via email to an unlisted number of addresses for no additional fee. In the absence of email, fax is available upon request.	
Indicate results format (please check one): ☐ Email & Fax ☐ Fax	
SAMPLE INFORMATION	
Analysis Requested	

Lab Sample ID	Sample Identifier	Date Sampled	Matrix: Soil Water Other	# of Bags	Bottles	C17	C10	Asbestos (presence / absence)	PFAS Short suite	CRS	Salinity	TRH/HTX	pH/pHox (24 Hour TAT)	Notes
1	EDP-OSI.024.BH09 - 0.5	20/11/2024	S			X		X	X		X		X	All CRS Samples on hold please
2	EDP-OSI.024.BH09 - 1.5	20/11/2024	S										X	
3	EDP-OSI.024.BH09 - 2.5	20/11/2024	S			X					X		X	
4	EDP-OSI.024.BH10 - 0.5	20/11/2024	S			X		X	X					
5	EDP-OSI.024.BH10 - 1.0	20/11/2024	S				X				X		X	
6	EDP-OSI.024.BH10 - 2.0	20/11/2024	S										X	
7	EDP-OSI.024.BH10 - 3.0	20/11/2024	S								X		X	
8	EDP-OSI.024.BH11 - 0.5	20/11/2024	S			X		X	X				X	
9	EDP-OSI.024.BH11 - 1.5	20/11/2024	S										X	
11	EDP-OSI.024.BH11 - 2.5	20/11/2024	S								X			
11	EDP-OSI.024.BH11 - 4.0	20/11/2024	S				X				X		X	
12	EDP-OSI.024.QC03	20/11/2024	S					X						

Sampled By: William Xu	Date: 20/11/2024
Relinquished By:	Date: 21/11/2024
Courier Pick-up	Date: 21/11/2024
Time:	

SGS EHS Sydney COC
SE274540

CONFIDENTIAL

Revision #: 1



STATEMENT OF QA/QC PERFORMANCE

SE273472A R0

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.136-WX**
Order Number **S-05667.136-WX**
Samples 9

LABORATORY DETAILS

Manager Shane McDermott
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 **SE273472A R0**
Date Received 01 Nov 2024
Date Reported 04 Nov 2024

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 (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	8 Soil	Type of documentation received	COC
Date documentation received	1/11/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	4.8°C
Sample container provider	SGS	Turnaround time requested	Next Day
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		



HOLDING TIME SUMMARY

SE273472A 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

Field pH for Acid Sulphate Soil

Method: ME-(AU)-ENVJAN104

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472A.001	LB328671	01 Nov 2024	01 Nov 2024	29 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472A.002	LB328671	01 Nov 2024	01 Nov 2024	29 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472A.003	LB328671	01 Nov 2024	01 Nov 2024	29 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024
EDP-DSI.024.TP06-1.0	SE273472A.004	LB328671	01 Nov 2024	01 Nov 2024	29 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472A.005	LB328671	01 Nov 2024	01 Nov 2024	29 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024
EDP-DSI.024.BH08-0.1	SE273472A.006	LB328671	01 Nov 2024	01 Nov 2024	29 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024
EDP-DSI.024.BH08-0.5	SE273472A.007	LB328671	01 Nov 2024	01 Nov 2024	29 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024
EDP-DSI.024.BH08-1.0	SE273472A.008	LB328671	01 Nov 2024	01 Nov 2024	29 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No surrogates were required for this job.

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.

No method blanks were required for this job.

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Field pH for Acid Sulphate Soil

Method: ME-(AU)-[ENV]AN104

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472A.004	LB328671.012	pHf	pH Units	-	6.1	5.4	30	11
		pHfox	pH Units	-	4.9	4.5	30	10
SE273472A.008	LB328671.017	pHf	pH Units	-	5.9	5.8	30	2
		pHfox	pH Units	-	4.3	4.5	30	5



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.

Sample Number	Parameter	Units	LOR
---------------	-----------	-------	-----

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spikes were required for this job.

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the

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.
- *** Indicates that both * and ** apply.
- 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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law .

This test report shall not be reproduced, except in full.

Request for Laboratory Services and Chain of Custody Form

Received Date: 01/11/24 Received By: B. Subany Laboratory Section: ☐ Ice ☒ Liquid ☐ Snow Samples Intact: ☒ Yes ☐ No
 Logged-In Date: _____ Time of Receipt: 3:25 Cooler Sealed: ☒ Yes ☐ No ☐ N/A Temperature: ☐ Ambient ☒ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge.

INVOICE TO:	Name: <u>Cristiane Florido</u>	Quote #:
	Company: <u>EDP Consultants Pty Ltd</u>	Attached Parameter List: ☐ Yes ☐ No
	Address: <u>Level 4 38 Oxley Street</u>	Replacement Sample Containers Required: ☐ Yes ☒ No
	SI Leonards NSW 2065	Results Required By: ☒ Standard TA except pH/pHox ☐ Urgent TA requires lab approval
	Email: <u>invoicess@edp-au.com; Project.admin@edp-au.com; Cristiane.Florido@edp-au.com</u>	Notes: Standard TA for all analytes except pH/pHox (24 Hours)
Phone: <u>0413 378 102</u>	Fax:	

Client Information: PO No.: _____ Project No.: S-05667.136 - WX

Company Name: EDP Consultants Pty Ltd

Contact Name: Cristiane Florido Samplers: Tary Mathew

Address: Level 4 38 Oxley Street, St Leonards NSW 2065

Phone Number: 0413 378 102 / 0452 316 267 After Hours Phone Number: NA

Fax Number: NA cristiane.florido@edp-au.com; william.xu@edp-au.com; m7m12@edp-au.com

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email & Esc ☒ Fax ☐

SAMPLE INFORMATION											Analysis Requested				Notes
Lab Sample ID	Sample Identifier	Date Sampled	Matrix: Soil Water Other	# of Bags	# of Bottles	C17	C10	Asbestos (presence / absence)	PFAS Short suite	CRS	Salinity	TRH/TEX	RhPtox (24 Hour TAT)	HOLD	
1	EDP-DSI.024.TP05 - 0.1	1/11/2024	S			X		X	X		X		X		All CRS Samples on hold please
2	EDP-DSI.024.BH05 - 1.0	1/11/2024	S				X	X			X		X		
3	EDP-DSI.024.TP06 - 0.2	1/11/2024	S			X		X	X		X		X		
4	EDP-DSI.024.TP06 - 1.0	1/11/2024	S								X		X		
5	EDP-DSI.024.TP06 - 2.0	1/11/2024	S				X	X			X		X		
6	EDP-DSI.024.BH08 - 0.1	1/11/2024	S			X		X	X		X		X		
7	EDP-DSI.024.BH08 - 0.5	1/11/2024	S				X	X			X		X		
8	EDP-DSI.024.BH08 - 1.0	1/11/2024	S								X		X		
9	EDP-DSI.024.QC02	1/11/2024	S				X								
						3	4	6	3	0	0		0	0	

Samples By: _____

William Xu Date: 1/11/2024

Relinquished By: _____

Courier Pick-up Date: 1/11/2024 Time: _____

SGS EHS Alexandria Laboratory



SE273472A COC
Received: 01 - Nov - 2024



SAMPLE RECEIPT ADVICE

SE273472A

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.136-WX**
Order Number **S-05667.136-WX**
Samples 9

LABORATORY DETAILS

Manager Shane McDermott
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 Fri 1/11/2024
Report Due Mon 4/11/2024
SGS Reference **SE273472A**

SUBMISSION DETAILS

This is to confirm that 9 samples were received on Friday 1/11/2024. Results are expected to be ready by COB Monday 4/11/2024. Please quote SGS reference SE273472A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	8 Soil	Type of documentation received	COC
Date documentation received	1/11/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	4.8°C
Sample container provider	SGS	Turnaround time requested	Next Day
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



SAMPLE RECEIPT ADVICE

SE273472A

CLIENT DETAILS

Client **EDP CONSULTANTS PTY LTD**

Project **S-05667.136-WX**

SUMMARY OF ANALYSIS

No.	Sample ID	Field pH for Acid Sulphate Soil
001	EDP-DSI.024.TP05-0.1	4
002	EDP-DSI.024.BH05-1.0	4
003	EDP-DSI.024.TP06-0.2	4
004	EDP-DSI.024.TP06-1.0	4
005	EDP-DSI.024.TP06-2.0	4
006	EDP-DSI.024.BH08-0.1	4
007	EDP-DSI.024.BH08-0.5	4
008	EDP-DSI.024.BH08-1.0	4

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 .



ANALYTICAL REPORT



Accreditation No. 2562

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.136-WX**
Order Number **S-05667.136-WX**
Samples 9

LABORATORY DETAILS

Manager Shane McDermott
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 **SE273472A R0**
Date Received 1/11/2024
Date Reported 4/11/2024

COMMENTS

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

SIGNATORIES

Ying Ying ZHANG
Laboratory Technician

Field pH for Acid Sulphate Soil [AN104] Tested: 1/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.TP05-0	EDP-DSI.024.BH05-1	EDP-DSI.024.TP06-0	EDP-DSI.024.TP06-1	EDP-DSI.024.TP06-2
			1	0	2	0	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024
			SE273472A.001	SE273472A.002	SE273472A.003	SE273472A.004	SE273472A.005
pHf	pH Units	-	8.5	7.4	5.6	6.1	5.2
pHfox	pH Units	-	7.2	5.7	3.8	4.9	3.8
Reaction Rate (pHfox)*	No unit	-	4	3	4	3	2
pH Difference*	pH Units	-10	1.3	1.7	1.7	1.1	1.4

PARAMETER	UOM	LOR	EDP-DSI.024.BH08-0	EDP-DSI.024.BH08-0	EDP-DSI.024.BH08-1
			1	5	0
			SOIL	SOIL	SOIL
			-	-	-
			1/11/2024	1/11/2024	1/11/2024
			SE273472A.006	SE273472A.007	SE273472A.008
pHf	pH Units	-	7.3	5.4	5.9
pHfox	pH Units	-	5.3	4.2	4.3
Reaction Rate (pHfox)*	No unit	-	4	2	2
pH Difference*	pH Units	-10	2.0	1.2	1.7

METHOD

METHODOLOGY SUMMARY

AN104

pHF is determined on an extract of approximately 2g of as received sample in approximately 10 mL of deionised water with pH determined after standing 30 minutes.

AN104

pHFox is determined on an extract of approximately 2g of as received sample with a few mLs of 30% hydrogen peroxide (adjusted to pH 4.5 to 5.5) with the extract reaction being rated from slight to extreme, with pH determined after reaction is complete and extract has cooled. Referenced to ASS Laboratory Methods Guidelines, method 23Af-Bf, 2004.

- 0 No Reaction
- 1 Slight Reaction
- 2 Moderate Reaction
- 3 Strong/High Reaction
- 4 Extreme/Vigorous Reaction (gas evolution and heat generation)

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

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 calculated 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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or

Request for Laboratory Services and Chain of Custody Form

Received Date: <u>01-11-24</u>		Received By: <u>VL</u>		Laboratory Section	
Logged-in Date:		Time of Receipt: <u>3.25</u>		Cooling Method: ☐ Ice ☒ Ambient ☐ None	Samples Intact: ☒ Yes ☐ No
				Cooler Sealed: ☒ Yes ☐ No ☐ N/A	Temperature: ☐ Ambient ☒ Other

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:	Name: <u>Cristiane Florido</u>		Quote #:
	Company: <u>EDP Consultants Pty Ltd</u>		Attached Parameter List: ☐ Yes ☐ No
	Address: <u>Level 4 38 Oxley Street</u>		Replacement Sample Containers Required: ☐ Yes ☒ No
	St Leonards NSW 2065		Results Required By: <u>Standard TA except pH/pHox</u> ☐ Urgent TA requires lab approval
	Email: <u>invoices@edo-au.com; Project.admin@edo-au.com; Cristiane.Florido@edo-au.com</u>		Notes: <u>Standard TA for all analytes except pH/pHox (24 Hours)</u>
	Phone: <u>0413 378 102</u>		Fax:

Client Information		PO No.:	Project No.: <u>S-05687.136 - WX</u>
Company Name: <u>EDP Consultants Pty Ltd</u>			
Contact Name: <u>Cristiane Florido</u>		Samplers:	<u>Tary Mathew</u>
Address: <u>Level 4 38 Oxley Street, St Leonards NSW 2065</u>			
Phone Number: <u>0413 378 102 / 0452 316 267</u>		After Hours Phone Number: <u>NA</u>	
Fax Number: <u>NA</u>		<u>cristiane.florido@edo-au.com; william.xu@edo-au.com; m7m12@edo-au.com</u>	

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email & Excel ☒ Fax ☐

Print/Export/Resend Form/Print (please check first)

Cancel

SAMPLE INFORMATION															
Lab Sample ID	Sample Identifier	Date Sampled	Matrix: Soil Water Other	# of Bags	# of Bottles	Analysis Requested									Notes
						C17	C10	Asbestos (presence / absence)	PFAS Short suite	CRS	Salinity	TRH/BTEX	pH/Plox (24 Hour TAT)	HOLD	
1	EDP-DSI.024.TP05 - 0.1	1/11/2024	S			X		X	X		X		X	All CRS Samples on hold please	
2	EDP-DSI.024.BH05 - 1.0	1/11/2024	S				X	X			X		X		
3	EDP-DSI.024.TP06 - 0.2	1/11/2024	S			X		X	X		X		X		
4	EDP-DSI.024.TP06 - 1.0	1/11/2024	S								X		X		
5	EDP-DSI.024.TP06 - 2.0	1/11/2024	S				X	X			X		X		
6	EDP-DSI.024.TP08 - 0.1	1/11/2024	S			X		X	X		X		X		
7	EDP-DSI.024.TP08 - 0.5	1/11/2024	S				X	X			X		X		
8	EDP-DSI.024.TP08 - 1.0	1/11/2024	S								X		X		
9	EDP-DSI.024.QC02	1/11/2024	S				X								
						5	1	0	3	0	8		8	0	

Sampled By:		<u>William Xu</u>		Date: <u>1/11/2024</u>
Relinquished By:				
Courier Pick-up		Date: <u>1/11/2024</u>	Time:	

SGS EHS Alexandria Laboratory



SE273472 COC
Received: 01 - Nov - 2024



SAMPLE RECEIPT ADVICE

SE273472

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.136-WX**
Order Number **S-05667.136-WX**
Samples 9

LABORATORY DETAILS

Manager Shane McDermott
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 Fri 1/11/2024
Report Due Fri 8/11/2024
SGS Reference **SE273472**

SUBMISSION DETAILS

This is to confirm that 9 samples were received on Friday 1/11/2024. Results are expected to be ready by COB Friday 8/11/2024. Please quote SGS reference SE273472 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	9 Soil	Type of documentation received	COC
Date documentation received	1/11/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	4.8°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

Ph/Pfox reported in SE273472A.
A separate portion was not supplied for Asbestos analysis. A sub-sample will be used from the jar provided.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



SAMPLE RECEIPT ADVICE

SE273472

CLIENT DETAILS

Client EDP CONSULTANTS PTY LTD

Project S-05667.136-WX

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	EDP-DSI.024.TP05-0.1	2	25	14	26	9	10	11	7
002	EDP-DSI.024.BH05-1.0	2	-	-	26	-	10	11	7
003	EDP-DSI.024.TP06-0.2	2	25	14	26	9	10	11	7
004	EDP-DSI.024.TP06-1.0	2	-	-	-	-	-	-	-
005	EDP-DSI.024.TP06-2.0	2	-	-	26	-	10	11	7
006	EDP-DSI.024.TP08-0.1	2	25	14	26	9	10	11	7
007	EDP-DSI.024.TP08-0.5	2	-	-	26	-	10	11	7
008	EDP-DSI.024.TP08-1.0	2	-	-	-	-	-	-	-
009	EDP-DSI.024.QC02	-	-	-	26	-	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

SE273472

CLIENT DETAILS

Client EDP CONSULTANTS PTY LTD

Project S-05667.136-WX

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Per- and Polyfluoroalkyl Substances (PFAS) in	Total Recoverable Elements in Soil/Waste
001	EDP-DSI.024.TP05-0.1	3	1	1	30	7
002	EDP-DSI.024.BH05-1.0	3	1	1	-	7
003	EDP-DSI.024.TP06-0.2	3	1	1	30	7
004	EDP-DSI.024.TP06-1.0	-	-	1	-	-
005	EDP-DSI.024.TP06-2.0	3	1	1	-	7
006	EDP-DSI.024.TP08-0.1	3	1	1	30	7
007	EDP-DSI.024.TP08-0.5	3	1	1	-	7
008	EDP-DSI.024.TP08-1.0	-	-	1	-	-
009	EDP-DSI.024.QC02	-	1	1	-	7

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 .

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.136-WX**
Order Number **S-05667.136-WX**
Samples 9

LABORATORY DETAILS

Manager Shane McDermott
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 **SE273472 R0**
Date Received 1/11/2024
Date Reported 8/11/2024

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.

A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin

SIGNATORIES



Akheeqar BENIAMEEN
Chemist



Dong LIANG
Metals/Inorganics Team Leader



Kamrul AHSAN
Senior Chemist



Ravee SIVASUBRAMANIAM
Hygiene Team Leader



Teresa NGUYEN
Organic Chemist



Ying Ying ZHANG
Laboratory Technician



ANALYTICAL RESULTS

SE273472 R0

VOC's in Soil [AN433] Tested: 5/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.TP05-0	EDP-DSI.024.BH05-1	EDP-DSI.024.TP06-0	EDP-DSI.024.TP06-2	EDP-DSI.024.TP08-0
			1	0	2	0	1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024
			SE273472.001	SE273472.002	SE273472.003	SE273472.005	SE273472.006
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	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
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	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
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	EDP-DSI.024.TP08-0	EDP-DSI.024.QC02
			5	
			SOIL	SOIL
			-	-
			1/11/2024	1/11/2024
			SE273472.007	SE273472.009
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 5/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.TP05-0	EDP-DSI.024.BH05-1	EDP-DSI.024.TP06-0	EDP-DSI.024.TP06-2	EDP-DSI.024.TP08-0
			1	0	2	0	1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024
			SE273472.001	SE273472.002	SE273472.003	SE273472.005	SE273472.006
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	EDP-DSI.024.TP08-0	EDP-DSI.024.QC02
			5	
			SOIL	SOIL
			-	-
			1/11/2024	1/11/2024
			SE273472.007	SE273472.009
TRH C6-C9	mg/kg	20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 5/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.TP05-0	EDP-DSI.024.BH05-1	EDP-DSI.024.TP06-0	EDP-DSI.024.TP06-2	EDP-DSI.024.TP08-0
			1	0	2	0	1
			SOIL	SOIL	SOIL	SOIL	SOIL
			1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024
			SE273472.001	SE273472.002	SE273472.003	SE273472.005	SE273472.006
TRH C10-C14	mg/kg	20	<20	<20	57	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	200	<45	120
TRH C29-C36	mg/kg	45	130	<45	240	<45	230
TRH C37-C40	mg/kg	100	110	<100	100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	90	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	90	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	130	<90	350	<90	300
TRH >C34-C40 (F4)	mg/kg	120	150	<120	150	<120	<120
TRH C10-C36 Total	mg/kg	110	130	<110	490	<110	350
TRH >C10-C40 Total (F bands)	mg/kg	210	280	<210	590	<210	300

PARAMETER	UOM	LOR	EDP-DSI.024.TP08-0	EDP-DSI.024.QC02
			5	
			SOIL	SOIL
			1/11/2024	1/11/2024
			SE273472.007	SE273472.009
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	<45	51
TRH C29-C36	mg/kg	45	<45	140
TRH C37-C40	mg/kg	100	<100	120
TRH >C10-C16	mg/kg	25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	150
TRH >C34-C40 (F4)	mg/kg	120	<120	160
TRH C10-C36 Total	mg/kg	110	<110	190
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	310

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 5/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.TP05-0	EDP-DSI.024.BH05-1	EDP-DSI.024.TP06-0	EDP-DSI.024.TP06-2	EDP-DSI.024.TP08-0
			1	0	2	0	1
			SOIL	SOIL	SOIL	SOIL	SOIL
			1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024
			SE273472.001	SE273472.002	SE273472.003	SE273472.005	SE273472.006
Naphthalene	mg/kg	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	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	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	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	0.1	<0.1	0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.1	<0.1	0.3	<0.1	0.1
Pyrene	mg/kg	0.1	0.1	<0.1	0.3	<0.1	0.2
Benzo(a)anthracene	mg/kg	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	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	0.1	<0.1	0.2	<0.1	0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	0.3	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	0.4	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	0.3	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	1.9	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	1.9	<0.8	<0.8

PARAMETER	UOM	LOR	EDP-DSI.024.TP08-0	EDP-DSI.024.QC02
			5	
			SOIL	SOIL
			1/11/2024	1/11/2024
			SE273472.007	SE273472.009
Naphthalene	mg/kg	0.1	<0.1	<0.1
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	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	0.1
Pyrene	mg/kg	0.1	<0.1	0.1
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	<0.1	0.1
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	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	0.2
Total PAH (18)	mg/kg	0.8	<0.8	0.9
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	0.9

OC Pesticides in Soil [AN420] Tested: 5/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.TP05-0	EDP-DSI.024.TP06-0	EDP-DSI.024.TP08-0
			1	2	1
			SOIL	SOIL	SOIL
			-	-	-
			1/11/2024	1/11/2024	1/11/2024
			SE273472.001	SE273472.003	SE273472.006
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	-	-	-
Total OC VIC EPA	mg/kg	1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 5/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.TP05-0	EDP-DSI.024.TP06-0	EDP-DSI.024.TP08-0
			1	2	1
			SOIL	SOIL	SOIL
			-	-	-
			1/11/2024	1/11/2024	1/11/2024
			SE273472.001	SE273472.003	SE273472.006
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7



ANALYTICAL RESULTS

SE273472 R0

PCBs in Soil [AN420] Tested: 5/11/2024

			EDP-DSI.024.TP05-0	EDP-DSI.024.TP06-0	EDP-DSI.024.TP08-0
			1	2	1
			SOIL	SOIL	SOIL
			-	-	-
			1/11/2024	1/11/2024	1/11/2024
			SE273472.001	SE273472.003	SE273472.006
PARAMETER	UOM	LOR			
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1



ANALYTICAL RESULTS

SE273472 R0

Conductivity and TDS by Calculation - Soil [AN106] Tested: 7/11/2024

			EDP-DSI.024.TP05-0	EDP-DSI.024.BH05-1	EDP-DSI.024.TP06-0	EDP-DSI.024.TP06-1	EDP-DSI.024.TP06-2
			1	0	2	0	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024
			SE273472.001	SE273472.002	SE273472.003	SE273472.004	SE273472.005
PARAMETER	UOM	LOR					
Conductivity of Extract (1:5 as received)	µS/cm	1	260	310	150	82	350
Salinity (by calculation)*	mg/kg	5	920	1200	550	290	1300

			EDP-DSI.024.TP08-0	EDP-DSI.024.TP08-0	EDP-DSI.024.TP08-1
			1	5	0
			SOIL	SOIL	SOIL
			-	-	-
			1/11/2024	1/11/2024	1/11/2024
			SE273472.006	SE273472.007	SE273472.008
PARAMETER	UOM	LOR			
Conductivity of Extract (1:5 as received)	µS/cm	1	180	440	550
Salinity (by calculation)*	mg/kg	5	670	1700	1900

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 5/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.TP05-0	EDP-DSI.024.BH05-1	EDP-DSI.024.TP06-0	EDP-DSI.024.TP06-2	EDP-DSI.024.TP08-0
			1	0	2	0	1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024
			SE273472.001	SE273472.002	SE273472.003	SE273472.005	SE273472.006
Arsenic, As	mg/kg	1	4	4	5	2	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	10	14	14	9.2	14
Copper, Cu	mg/kg	0.5	28	23	19	16	78
Lead, Pb	mg/kg	1	14	18	19	9	26
Nickel, Ni	mg/kg	0.5	14	9.0	7.4	3.5	9.9
Zinc, Zn	mg/kg	2	57	48	61	19	220

PARAMETER	UOM	LOR	EDP-DSI.024.TP08-0	EDP-DSI.024.QC02
			5	
			SOIL	SOIL
			-	-
			1/11/2024	1/11/2024
			SE273472.007	SE273472.009
Arsenic, As	mg/kg	1	3	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	12	10
Copper, Cu	mg/kg	0.5	29	25
Lead, Pb	mg/kg	1	11	14
Nickel, Ni	mg/kg	0.5	9.9	12
Zinc, Zn	mg/kg	2	42	66



ANALYTICAL RESULTS

SE273472 R0

Mercury in Soil [AN312] Tested: 5/11/2024

			EDP-DSI.024.TP05-0	EDP-DSI.024.BH05-1	EDP-DSI.024.TP06-0	EDP-DSI.024.TP06-2	EDP-DSI.024.TP08-0
			1	0	2	0	1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024
PARAMETER	UOM	LOR	SE273472.001	SE273472.002	SE273472.003	SE273472.005	SE273472.006
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	0.20

			EDP-DSI.024.TP08-0	EDP-DSI.024.QC02
			5	
			SOIL	SOIL
			-	-
			1/11/2024	1/11/2024
PARAMETER	UOM	LOR	SE273472.007	SE273472.009
Mercury	mg/kg	0.05	<0.05	<0.05



ANALYTICAL RESULTS

SE273472 R0

Moisture Content [AN002] Tested: 5/11/2024

			EDP-DSI.024.TP05-0	EDP-DSI.024.BH05-1	EDP-DSI.024.TP06-0	EDP-DSI.024.TP06-1	EDP-DSI.024.TP06-2
			1	0	2	0	0
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			1/11/2024	1/11/2024	1/11/2024	1/11/2024	1/11/2024
PARAMETER	UOM	LOR	SE273472.001	SE273472.002	SE273472.003	SE273472.004	SE273472.005
% Moisture	%w/w	1	7.6	12.3	10.3	8.7	13.8

			EDP-DSI.024.TP08-0	EDP-DSI.024.TP08-0	EDP-DSI.024.TP08-1	EDP-DSI.024.QC02
			1	5	0	
			SOIL	SOIL	SOIL	SOIL
			-	-	-	-
			1/11/2024	1/11/2024	1/11/2024	1/11/2024
PARAMETER	UOM	LOR	SE273472.006	SE273472.007	SE273472.008	SE273472.009
% Moisture	%w/w	1	11.0	16.3	7.3	8.6



ANALYTICAL RESULTS

SE273472 R0

Fibre Identification in soil [AS4964/AN602] Tested: 8/11/2024

			EDP-DSI.024.TP05-0	EDP-DSI.024.BH05-1	EDP-DSI.024.TP06-0	EDP-DSI.024.TP06-2	EDP-DSI.024.TP08-0
			1 SOIL - 1/11/2024 SE273472.001	0 SOIL - 1/11/2024 SE273472.002	2 SOIL - 1/11/2024 SE273472.003	0 SOIL - 1/11/2024 SE273472.005	1 SOIL - 1/11/2024 SE273472.006
PARAMETER	UOM	LOR					
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	06/11/2024 00:00	06/11/2024 00:00	06/11/2024 00:00	06/11/2024 00:00	06/11/2024 00:00

			EDP-DSI.024.TP08-0
			5 SOIL - 1/11/2024 SE273472.007
PARAMETER	UOM	LOR	
Asbestos Detected	No unit	-	No
Estimated Fibres*	%w/w	0.01	<0.01
Date Analysed*	No unit	-	06/11/2024 00:00

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [AN404] Tested: 4/11/2024

PARAMETER	UOM	LOR	EDP-DSI.024.TP05-0	EDP-DSI.024.TP06-0	EDP-DSI.024.TP08-0
			1	2	1
			SOIL	SOIL	SOIL
			-	-	-
			1/11/2024	1/11/2024	1/11/2024
			SE273472.001	SE273472.003	SE273472.006
Perfluorobutanoic acid (PFBA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoropentanoic acid (PFPeA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorohexanoic acid (PFHxA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorooctanoic acid (PFOA)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoropropane sulfonic acid (PFPrS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005	<0.005	<0.005	<0.005
Perfluorononane sulfonic acid (PFNS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	mg/kg	0.005	<0.005	<0.005	<0.005
1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2)	mg/kg	0.005	<0.005	<0.005	<0.005
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.005	<0.005	<0.005	<0.005
Sum PFOS and PFHxS	mg/kg	0.005	<0.005	<0.005	<0.005
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.005	<0.005	<0.005	<0.005

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/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.

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 AAS or ICP as per USEPA Method 200.8.

AN106

Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as $\mu\text{mhos/cm}$ or $\mu\text{S/cm}$ @ 25°C. For soils, an extract of as received sample with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2510 B.

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.

AN404

This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts. After spiking with isotopically labelled quantification surrogates and sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification. PFOS and PFHXS are determined as the total of linear and branched isomers.

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).

Total PAH calculated from individual analyte detections at or above the limit of reporting.

AN420

SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

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.

AN602/AS4964

Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.

AN602/AS4964

Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.

AN602/AS4964

AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602/AS4964

The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if-

- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres);
- (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and
- (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
		IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
***	Indicates that both * and ** apply.	LNR	Sample listed, but not received.		

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 calculated 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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or



STATEMENT OF QA/QC PERFORMANCE

SE273472 R0

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.136-WX**
Order Number **S-05667.136-WX**
Samples 9

LABORATORY DETAILS

Manager Shane McDermott
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 **SE273472 R0**
Date Received 01 Nov 2024
Date Reported 08 Nov 2024

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	1 item
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items

SAMPLE SUMMARY

Sample counts by matrix	9 Soil	Type of documentation received	COC
Date documentation received	1/11/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	4.8°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		



HOLDING TIME SUMMARY

SE273472 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

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]JAN106

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB329142	01 Nov 2024	01 Nov 2024	08 Nov 2024	07 Nov 2024	08 Nov 2024	07 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB329142	01 Nov 2024	01 Nov 2024	08 Nov 2024	07 Nov 2024	08 Nov 2024	07 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB329142	01 Nov 2024	01 Nov 2024	08 Nov 2024	07 Nov 2024	08 Nov 2024	07 Nov 2024
EDP-DSI.024.TP06-1.0	SE273472.004	LB329142	01 Nov 2024	01 Nov 2024	08 Nov 2024	07 Nov 2024	08 Nov 2024	07 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB329142	01 Nov 2024	01 Nov 2024	08 Nov 2024	07 Nov 2024	08 Nov 2024	07 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB329142	01 Nov 2024	01 Nov 2024	08 Nov 2024	07 Nov 2024	08 Nov 2024	07 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB329142	01 Nov 2024	01 Nov 2024	08 Nov 2024	07 Nov 2024	08 Nov 2024	07 Nov 2024
EDP-DSI.024.TP08-1.0	SE273472.008	LB329142	01 Nov 2024	01 Nov 2024	08 Nov 2024	07 Nov 2024	08 Nov 2024	07 Nov 2024

Fibre Identification in soil

Method: ME-(AU)-[ENV]JAS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328751	01 Nov 2024	01 Nov 2024	01 Nov 2025	08 Nov 2024	01 Nov 2025	08 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328751	01 Nov 2024	01 Nov 2024	01 Nov 2025	08 Nov 2024	01 Nov 2025	08 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328751	01 Nov 2024	01 Nov 2024	01 Nov 2025	08 Nov 2024	01 Nov 2025	08 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328751	01 Nov 2024	01 Nov 2024	01 Nov 2025	08 Nov 2024	01 Nov 2025	08 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328751	01 Nov 2024	01 Nov 2024	01 Nov 2025	08 Nov 2024	01 Nov 2025	08 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328751	01 Nov 2024	01 Nov 2024	01 Nov 2025	08 Nov 2024	01 Nov 2025	08 Nov 2024

Mercury in Soil

Method: ME-(AU)-[ENV]JAN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328858	01 Nov 2024	01 Nov 2024	29 Nov 2024	05 Nov 2024	29 Nov 2024	08 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328858	01 Nov 2024	01 Nov 2024	29 Nov 2024	05 Nov 2024	29 Nov 2024	08 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328858	01 Nov 2024	01 Nov 2024	29 Nov 2024	05 Nov 2024	29 Nov 2024	08 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328858	01 Nov 2024	01 Nov 2024	29 Nov 2024	05 Nov 2024	29 Nov 2024	08 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328858	01 Nov 2024	01 Nov 2024	29 Nov 2024	05 Nov 2024	29 Nov 2024	08 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328858	01 Nov 2024	01 Nov 2024	29 Nov 2024	05 Nov 2024	29 Nov 2024	08 Nov 2024
EDP-DSI.024.QC02	SE273472.009	LB328858	01 Nov 2024	01 Nov 2024	29 Nov 2024	05 Nov 2024	29 Nov 2024	08 Nov 2024

Moisture Content

Method: ME-(AU)-[ENV]JAN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328854	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	10 Nov 2024	07 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328854	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	10 Nov 2024	07 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328854	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	10 Nov 2024	07 Nov 2024
EDP-DSI.024.TP06-1.0	SE273472.004	LB328854	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	10 Nov 2024	07 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328854	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	10 Nov 2024	07 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328854	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	10 Nov 2024	07 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328854	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	10 Nov 2024	07 Nov 2024
EDP-DSI.024.TP08-1.0	SE273472.008	LB328854	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	10 Nov 2024	07 Nov 2024
EDP-DSI.024.QC02	SE273472.009	LB328854	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	10 Nov 2024	07 Nov 2024

OC Pesticides in Soil

Method: ME-(AU)-[ENV]JAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.QC02	SE273472.009	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024

OP Pesticides in Soil

Method: ME-(AU)-[ENV]JAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.QC02	SE273472.009	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]JAN420

Sample Name	Sample No.	QC Ref
-------------	------------	--------

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.QC02	SE273472.009	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024

PCBs in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024
EDP-DSI.024.QC02	SE273472.009	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	08 Nov 2024

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

Method: ME-(AU)-ENVJAN404

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328754	01 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024	02 Dec 2024	07 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328754	01 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024	02 Dec 2024	07 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328754	01 Nov 2024	01 Nov 2024	29 Nov 2024	04 Nov 2024	02 Dec 2024	07 Nov 2024

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

Method: ME-(AU)-ENVJAN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328855	01 Nov 2024	01 Nov 2024	30 Apr 2025	05 Nov 2024	30 Apr 2025	08 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328855	01 Nov 2024	01 Nov 2024	30 Apr 2025	05 Nov 2024	30 Apr 2025	08 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328855	01 Nov 2024	01 Nov 2024	30 Apr 2025	05 Nov 2024	30 Apr 2025	08 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328855	01 Nov 2024	01 Nov 2024	30 Apr 2025	05 Nov 2024	30 Apr 2025	08 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328855	01 Nov 2024	01 Nov 2024	30 Apr 2025	05 Nov 2024	30 Apr 2025	08 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328855	01 Nov 2024	01 Nov 2024	30 Apr 2025	05 Nov 2024	30 Apr 2025	08 Nov 2024
EDP-DSI.024.QC02	SE273472.009	LB328855	01 Nov 2024	01 Nov 2024	30 Apr 2025	05 Nov 2024	30 Apr 2025	08 Nov 2024

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	07 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	07 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	07 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	07 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	07 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	07 Nov 2024
EDP-DSI.024.QC02	SE273472.009	LB328852	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Dec 2024	07 Nov 2024

VOC's in Soil

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.QC02	SE273472.009	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.TP05-0.1	SE273472.001	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.BH05-1.0	SE273472.002	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.TP06-0.2	SE273472.003	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.TP06-2.0	SE273472.005	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.TP08-0.1	SE273472.006	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.TP08-0.5	SE273472.007	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024
EDP-DSI.024.QC02	SE273472.009	LB328853	01 Nov 2024	01 Nov 2024	15 Nov 2024	05 Nov 2024	15 Nov 2024	07 Nov 2024

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	60 - 130%	98
	EDP-DSI.024.TP06-0.2	SE273472.003	%	60 - 130%	102
	EDP-DSI.024.TP08-0.1	SE273472.006	%	60 - 130%	99

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	60 - 130%	96
	EDP-DSI.024.TP06-0.2	SE273472.003	%	60 - 130%	96
	EDP-DSI.024.TP08-0.1	SE273472.006	%	60 - 130%	95
d14-p-terphenyl (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	60 - 130%	91
	EDP-DSI.024.TP06-0.2	SE273472.003	%	60 - 130%	94
	EDP-DSI.024.TP08-0.1	SE273472.006	%	60 - 130%	92

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	70 - 130%	96
	EDP-DSI.024.BH05-1.0	SE273472.002	%	70 - 130%	109
	EDP-DSI.024.TP06-0.2	SE273472.003	%	70 - 130%	96
	EDP-DSI.024.TP06-2.0	SE273472.005	%	70 - 130%	96
	EDP-DSI.024.TP08-0.1	SE273472.006	%	70 - 130%	95
	EDP-DSI.024.TP08-0.5	SE273472.007	%	70 - 130%	97
	EDP-DSI.024.QC02	SE273472.009	%	70 - 130%	96
d14-p-terphenyl (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	70 - 130%	91
	EDP-DSI.024.BH05-1.0	SE273472.002	%	70 - 130%	104
	EDP-DSI.024.TP06-0.2	SE273472.003	%	70 - 130%	94
	EDP-DSI.024.TP06-2.0	SE273472.005	%	70 - 130%	92
	EDP-DSI.024.TP08-0.1	SE273472.006	%	70 - 130%	92
	EDP-DSI.024.TP08-0.5	SE273472.007	%	70 - 130%	95
	EDP-DSI.024.QC02	SE273472.009	%	70 - 130%	91
d5-nitrobenzene (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	70 - 130%	88
	EDP-DSI.024.BH05-1.0	SE273472.002	%	70 - 130%	101
	EDP-DSI.024.TP06-0.2	SE273472.003	%	70 - 130%	89
	EDP-DSI.024.TP06-2.0	SE273472.005	%	70 - 130%	92
	EDP-DSI.024.TP08-0.1	SE273472.006	%	70 - 130%	91
	EDP-DSI.024.TP08-0.5	SE273472.007	%	70 - 130%	95
	EDP-DSI.024.QC02	SE273472.009	%	70 - 130%	92

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	60 - 130%	98
	EDP-DSI.024.TP06-0.2	SE273472.003	%	60 - 130%	102
	EDP-DSI.024.TP08-0.1	SE273472.006	%	60 - 130%	99

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

Method: ME-(AU)-[ENV]AN404

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	40 - 300%	85
	EDP-DSI.024.TP06-0.2	SE273472.003	%	40 - 300%	106
	EDP-DSI.024.TP08-0.1	SE273472.006	%	40 - 300%	87
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	40 - 300%	84
	EDP-DSI.024.TP06-0.2	SE273472.003	%	40 - 300%	98
	EDP-DSI.024.TP08-0.1	SE273472.006	%	40 - 300%	84
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	40 - 300%	72
	EDP-DSI.024.TP06-0.2	SE273472.003	%	40 - 300%	82
	EDP-DSI.024.TP08-0.1	SE273472.006	%	40 - 300%	79
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	40 - 150%	90
	EDP-DSI.024.TP06-0.2	SE273472.003	%	40 - 150%	115
	EDP-DSI.024.TP08-0.1	SE273472.006	%	40 - 150%	99
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	40 - 150%	127
	EDP-DSI.024.TP06-0.2	SE273472.003	%	40 - 150%	147
	EDP-DSI.024.TP08-0.1	SE273472.006	%	40 - 150%	143
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	40 - 150%	82
	EDP-DSI.024.TP06-0.2	SE273472.003	%	40 - 150%	96
	EDP-DSI.024.TP08-0.1	SE273472.006	%	40 - 150%	96

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)

Method: ME-(AU)-[ENV]AN404

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	5 - 150%	94
	EDP-DSI.024.TP06-0.2	SE273472.003	%	5 - 150%	134
	EDP-DSI.024.TP08-0.1	SE273472.006	%	5 - 150%	105
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	40 - 150%	82
	EDP-DSI.024.TP06-0.2	SE273472.003	%	40 - 150%	96
	EDP-DSI.024.TP08-0.1	SE273472.006	%	40 - 150%	96
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	40 - 150%	89
	EDP-DSI.024.TP06-0.2	SE273472.003	%	40 - 150%	104
	EDP-DSI.024.TP08-0.1	SE273472.006	%	40 - 150%	104
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	35 - 150%	83
	EDP-DSI.024.TP06-0.2	SE273472.003	%	35 - 150%	105
	EDP-DSI.024.TP08-0.1	SE273472.006	%	35 - 150%	94
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	EDP-DSI.024.TP05-0.1	SE273472.001	%	40 - 150%	76
	EDP-DSI.024.TP06-0.2	SE273472.003	%	40 - 150%	90
	EDP-DSI.024.TP08-0.1	SE273472.006	%	40 - 150%	81

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	60 - 130%	98
	EDP-DSI.024.BH05-1.0	SE273472.002	%	60 - 130%	91
	EDP-DSI.024.TP06-0.2	SE273472.003	%	60 - 130%	93
	EDP-DSI.024.TP06-2.0	SE273472.005	%	60 - 130%	82
	EDP-DSI.024.TP08-0.1	SE273472.006	%	60 - 130%	91
	EDP-DSI.024.TP08-0.5	SE273472.007	%	60 - 130%	88
	EDP-DSI.024.QC02	SE273472.009	%	60 - 130%	85
d4-1,2-dichloroethane (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	60 - 130%	99
	EDP-DSI.024.BH05-1.0	SE273472.002	%	60 - 130%	92
	EDP-DSI.024.TP06-0.2	SE273472.003	%	60 - 130%	92
	EDP-DSI.024.TP06-2.0	SE273472.005	%	60 - 130%	78
	EDP-DSI.024.TP08-0.1	SE273472.006	%	60 - 130%	91
	EDP-DSI.024.TP08-0.5	SE273472.007	%	60 - 130%	77
	EDP-DSI.024.QC02	SE273472.009	%	60 - 130%	82
d8-toluene (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	60 - 130%	99
	EDP-DSI.024.BH05-1.0	SE273472.002	%	60 - 130%	91
	EDP-DSI.024.TP06-0.2	SE273472.003	%	60 - 130%	92
	EDP-DSI.024.TP06-2.0	SE273472.005	%	60 - 130%	80
	EDP-DSI.024.TP08-0.1	SE273472.006	%	60 - 130%	92
	EDP-DSI.024.TP08-0.5	SE273472.007	%	60 - 130%	79
	EDP-DSI.024.QC02	SE273472.009	%	60 - 130%	84

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	60 - 130%	98
	EDP-DSI.024.BH05-1.0	SE273472.002	%	60 - 130%	91
	EDP-DSI.024.TP06-0.2	SE273472.003	%	60 - 130%	93
	EDP-DSI.024.TP06-2.0	SE273472.005	%	60 - 130%	82
	EDP-DSI.024.TP08-0.1	SE273472.006	%	60 - 130%	91
	EDP-DSI.024.TP08-0.5	SE273472.007	%	60 - 130%	88
	EDP-DSI.024.QC02	SE273472.009	%	60 - 130%	85
d4-1,2-dichloroethane (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	60 - 130%	99
	EDP-DSI.024.BH05-1.0	SE273472.002	%	60 - 130%	92
	EDP-DSI.024.TP06-0.2	SE273472.003	%	60 - 130%	92
	EDP-DSI.024.TP06-2.0	SE273472.005	%	60 - 130%	78
	EDP-DSI.024.TP08-0.1	SE273472.006	%	60 - 130%	91
	EDP-DSI.024.TP08-0.5	SE273472.007	%	60 - 130%	77
	EDP-DSI.024.QC02	SE273472.009	%	60 - 130%	82
d8-toluene (Surrogate)	EDP-DSI.024.TP05-0.1	SE273472.001	%	60 - 130%	99
	EDP-DSI.024.BH05-1.0	SE273472.002	%	60 - 130%	91
	EDP-DSI.024.TP06-0.2	SE273472.003	%	60 - 130%	92
	EDP-DSI.024.TP06-2.0	SE273472.005	%	60 - 130%	80
	EDP-DSI.024.TP08-0.1	SE273472.006	%	60 - 130%	92
	EDP-DSI.024.TP08-0.5	SE273472.007	%	60 - 130%	79



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 identifier 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 %
d8-toluene (Surrogate)	EDP-DSI.024.QC02	SE273472.009	%	60 - 130%	84

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.

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result
LB329142.001	Conductivity of Extract (1:5 as received)	µS/cm	1	1
	Salinity (by calculation)*	mg/kg	5	<5

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB328858.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB328852.001	Alpha BHC	mg/kg	0.1	<0.1
	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Lindane (gamma BHC)	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	Endrin aldehyde	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endrin ketone	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
	Mirex	mg/kg	0.1	<0.1
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	117

OP Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB328852.001	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Bromophos Ethyl	mg/kg	0.2	<0.2
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
	Diazinon (Dimpylate)	mg/kg	0.5	<0.5
	Dichlorvos	mg/kg	0.5	<0.5
	Dimethoate	mg/kg	0.5	<0.5
	Ethion	mg/kg	0.2	<0.2
	Fenitrothion	mg/kg	0.2	<0.2
	Malathion	mg/kg	0.2	<0.2
	Methidathion	mg/kg	0.5	<0.5
	Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	2-fluorobiphenyl (Surrogate)	%	-	117
	d14-p-terphenyl (Surrogate)	%	-	112

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB328852.001	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

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.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Number	Parameter	Units	LOR	Result
LB328852.001	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)	%	-	104
	2-fluorobiphenyl (Surrogate)	%	-	117
	d14-p-terphenyl (Surrogate)	%	-	112

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB328852.001	Arochlor 1016	mg/kg	0.2	<0.2
	Arochlor 1221	mg/kg	0.2	<0.2
	Arochlor 1232	mg/kg	0.2	<0.2
	Arochlor 1242	mg/kg	0.2	<0.2
	Arochlor 1248	mg/kg	0.2	<0.2
	Arochlor 1254	mg/kg	0.2	<0.2
	Arochlor 1260	mg/kg	0.2	<0.2
	Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates			
	TCMX (Surrogate)	%	-	117

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

Method: ME-(AU)-[ENV]AN404

Sample Number	Parameter	Units	LOR	Result
LB328754.001	Perfluorobutanoic acid (PFBA)	mg/kg	0.005	<0.005
	Perfluoropentanoic acid (PFPeA)	mg/kg	0.005	<0.005
	Perfluorohexanoic acid (PFHxA)	mg/kg	0.005	<0.005
	Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005	<0.005
	Perfluorooctanoic acid (PFOA)	mg/kg	0.005	<0.005
	Perfluoropropane sulfonic acid (PFPrS)	mg/kg	0.005	<0.005
	Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.005	<0.005
	Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.005	<0.005
	Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.005	<0.005
	Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005	<0.005
	Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005	<0.005
	Perfluorononane sulfonic acid (PFNS)	mg/kg	0.005	<0.005
	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	mg/kg	0.005	<0.005
	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	mg/kg	0.005	<0.005
	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	mg/kg	0.005	<0.005
	1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2 FTS)	mg/kg	0.005	<0.005

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

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

Sample Number	Parameter	Units	LOR	Result
LB328855.001	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
LB328852.001	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
---------------	-----------	-------	-----

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.

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB328853.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		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 (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	75
		d8-toluene (Surrogate)	%	-	90
		Bromofluorobenzene (Surrogate)	%	-	94
	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
LB328853.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	75

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]AN106

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472.008	LB329142.019	Conductivity of Extract (1:5 as received)	µS/cm	1	550	500	30	9
		Salinity (by calculation)*	mg/kg	5	1900	1700	31	9
SE273496.005	LB329142.018	Conductivity of Extract (1:5 as received)	µS/cm	1	19	22	40	15

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472.007	LB328858.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE273534.002	LB328858.024	Mercury	mg/kg	0.05	0.01630613590	0.0145021455	200	0

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472.006	LB328854.011	% Moisture	%w/w	1	11.0	12.3	39	11
SE273534.001	LB328854.022	% Moisture	%w/w	1	15.39087947882	15.7045235803	37	19
SE273534.002	LB328854.024	% Moisture	%w/w	1	25.07739938086	25.1240310077	34	4

OC Pesticides in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472.006	LB328852.027	Alpha BHC	mg/kg	0.1	<0.1	0.0005265769	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	0.0015232224	200	0
		Beta BHC	mg/kg	0.1	<0.1	0.0233923295	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	0.0024425524	200	0
		Delta BHC	mg/kg	0.1	<0.1	0.0080902013	200	0
		Heptachlor	mg/kg	0.1	<0.1	0.0009022708	200	0
		Aldrin	mg/kg	0.1	<0.1	0.0060097762	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	0.0002913189	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	0.0003138237	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	0.0001928355	200	0
		Alpha Endosulfan	mg/kg	0.2	<0.2	0.0748643315	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	0.0011273158	200	0
		Dieldrin	mg/kg	0.2	<0.2	0.0040960781	200	0
		Endrin	mg/kg	0.2	<0.2	0.0026321080	200	0
		Beta Endosulfan	mg/kg	0.2	<0.2	0.0109344455	200	0
		p,p'-DDD	mg/kg	0.1	<0.1	0.0014548201	200	0
		Endrin aldehyde	mg/kg	0.1	<0.1	0.0055840123	200	0
		Endosulfan sulphate	mg/kg	0.1	<0.1	0.0060338645	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	0.0300169073	200	0
		Endrin ketone	mg/kg	0.1	<0.1	0	200	0
		Methoxychlor	mg/kg	0.1	<0.1	0.0030090077	200	0
		Mirex	mg/kg	0.1	<0.1	0.0122963273	200	0
		Total OC VIC EPA	mg/kg	1	<1	0	200	0
SE273534.002	LB328852.028	Surrogates	mg/kg	-	0.15	0.14954955	30	0
		Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.14954955	30	0
		Alpha BHC	mg/kg	0.1	0.01235267030	0.0765926888	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	6.17967364667	5.265059283	200	0
		Beta BHC	mg/kg	0.1	0.0136751540	0	200	0
		Lindane (gamma BHC)	mg/kg	0.1	0.0139762180	0	200	0
		Delta BHC	mg/kg	0.1	0.0146209139	0	200	0
		Heptachlor	mg/kg	0.1	0.01096860560	0.0036211838	200	0
		Aldrin	mg/kg	0.1	0.00317243550	0.0042334792	200	0
		Heptachlor epoxide	mg/kg	0.1	4.2504802733	0	200	0
		Gamma Chlordane	mg/kg	0.1	0.00166362870	0.0005615913	200	0
		Alpha Chlordane	mg/kg	0.1	0.00197727200	0.0006674679	200	0
		Alpha Endosulfan	mg/kg	0.2	0.00466823330	0.0065833102	200	0
		p,p'-DDE	mg/kg	0.1	8.46594207123	19.16828507	200	0
		Dieldrin	mg/kg	0.2	0.00011638080	0.0022156585	200	0
		Endrin	mg/kg	0.2	0.00012195480	0.0023217226	200	0
		Beta Endosulfan	mg/kg	0.2	0.02583630360	0.0134206457	200	0
		p,p'-DDD	mg/kg	0.1	0.00043738159	5.519959622	200	0
		Endrin aldehyde	mg/kg	0.1	0.00140888760	0.0002050536	200	0
		Endosulfan sulphate	mg/kg	0.1	0	0.0008897062	200	0
		p,p'-DDT	mg/kg	0.1	0.00061382980	0.0013799757	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]JAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE273534.002	LB328852.028	Endrin ketone	mg/kg	0.1	0.0007322327	0.0012260940	200	0	
		Methoxychlor	mg/kg	0.1	0.0002811749	0.0004269559	200	0	
		Mirex	mg/kg	0.1	0.0003189363	0.0012697107	200	0	
		Total OC VIC EPA	mg/kg	1	0	0	200	0	
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.156756757	0.147447447	30	6

OP Pesticides in Soil

Method: ME-(AU)-[ENV]JAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE273472.006	LB328852.027	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	0.0021155006	200	0	
		Bromophos Ethyl	mg/kg	0.2	<0.2	0.0011849398	200	0	
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	0.0053990968	200	0	
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	0.0010241680	200	0	
		Dichlorvos	mg/kg	0.5	<0.5	0.0050541645	200	0	
		Dimethoate	mg/kg	0.5	<0.5	0.0008287331	200	0	
		Ethion	mg/kg	0.2	<0.2	0.0028733392	200	0	
		Fenitrothion	mg/kg	0.2	<0.2	0.0004592332	200	0	
		Malathion	mg/kg	0.2	<0.2	0.0040389976	200	0	
		Methodathion	mg/kg	0.5	<0.5	0.0017843582	200	0	
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	5.6838139690	200	0	
		Total OP Pesticides*	mg/kg	1.7	<1.7	0	200	0	
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4726946527	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4528315132	30	1
SE273534.002	LB328852.028	Azinphos-methyl (Guthion)	mg/kg	0.2	0	0.0005147134	200	0	
		Bromophos Ethyl	mg/kg	0.2	0.0003752376	0.0029836367	200	0	
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0.0009600483	0.0013709657	200	0	
		Diazinon (Dimpylate)	mg/kg	0.5	6.8098228606	0	200	0	
		Dichlorvos	mg/kg	0.5	0.0019934556	0.0005393315	200	0	
		Dimethoate	mg/kg	0.5	0.0010993214	0.0018391280	200	0	
		Ethion	mg/kg	0.2	5.1142042780	4.9361084728	200	0	
		Fenitrothion	mg/kg	0.2	0.0003073799	0.0003127791	200	0	
		Malathion	mg/kg	0.2	0.0005277075	0.0002085397	200	0	
		Methodathion	mg/kg	0.5	0.0004762256	0.0009895760	200	0	
		Parathion-ethyl (Parathion)	mg/kg	0.2	0.0001349126	0.0001522619	200	0	
		Total OP Pesticides*	mg/kg	1.7	0	0	200	0	
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5064708406	0.4705776023	30	7
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4946791863	0.4621482161	30	7

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]JAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472.006	LB328852.027	Naphthalene	mg/kg	0.1	<0.1	0.0132082394	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	0.0178663545	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	0.0161181274	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	0.0160634854	200	0
		Acenaphthene	mg/kg	0.1	<0.1	0.0026353991	200	0
		Fluorene	mg/kg	0.1	<0.1	0.0064210765	200	0
		Phenanthrene	mg/kg	0.1	0.1	0.0807827001	138	5
		Anthracene	mg/kg	0.1	<0.1	0.0156330923	200	0
		Fluoranthene	mg/kg	0.1	0.1	0.1238658488	105	13
		Pyrene	mg/kg	0.1	0.2	0.1293587787	101	15
		Benzo(a)anthracene	mg/kg	0.1	<0.1	0.0520147853	200	0
		Chrysene	mg/kg	0.1	<0.1	0.0583764426	190	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	0.0747252603	171	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.0498614936	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	0.0724263054	162	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.0585431890	198	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	0.0142892185	200	0
		Benzo(ghi)perylene	mg/kg	0.1	0.1	0.0993869814	127	6
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	0	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	0.121	175	0
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	0.242	134	0		
		Total PAH (18)	mg/kg	0.8	<0.8	0.2532246276	56	66 ☹
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4645106691	30	2

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-ENVJAN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472.006	LB328852.027	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4726946527	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4528315132	30	1
SE273534.002	LB328852.028		Naphthalene	mg/kg	0.1	0.0002279826	0.0003197358	200	0
			2-methylnaphthalene	mg/kg	0.1	4.5347151849	0.0003683661	200	0
			1-methylnaphthalene	mg/kg	0.1	9.0088998448	0.0001260953	200	0
			Acenaphthylene	mg/kg	0.1	0.0002155130	0.0002434723	200	0
			Acenaphthene	mg/kg	0.1	0.0005307740	3.3728420724	200	0
			Fluorene	mg/kg	0.1	0.0001303657	0.0001702321	200	0
			Phenanthrene	mg/kg	0.1	0.0006150969	0.0009480758	200	0
			Anthracene	mg/kg	0.1	0.0003246207	0.0013705544	200	0
			Fluoranthene	mg/kg	0.1	0.0013317149	0.0013713301	200	0
			Pyrene	mg/kg	0.1	0.0013956096	0.0013474167	200	0
			Benzo(a)anthracene	mg/kg	0.1	0.0087356017	0.0085171763	200	0
			Chrysene	mg/kg	0.1	0.0009359093	0.0013845099	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.0006921882	0.0016692608	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	0.0006543380	0.0015779875	200	0
			Benzo(a)pyrene	mg/kg	0.1	0.0008052353	0.0006325202	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.0008147965	0.0006836148	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	0.0001570467	0.0001850282	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.0006470769	0.0005613174	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0	0	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.121	0.121	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.242	0.242	134	0
			Total PAH (18)	mg/kg	0.8	0	0	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4756976466	0.4338378432	30	9
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5064708406	0.4705776023	30	7
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4946791863	0.4621482161	30	7

PCBs in Soil

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472.006	LB328852.027	Arochlor 1016	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1221	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1232	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1242	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1248	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1254	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1260	mg/kg	0.2	<0.2	0	200	0
		Total PCBs (Arochlors)	mg/kg	1	<1	0	200	0
	Surrogates	TCMX (Surrogate)	mg/kg	-	0	0.14954955	30	0
SE273534.002	LB328852.028	Arochlor 1016	mg/kg	0.2	0	0	200	0
		Arochlor 1221	mg/kg	0.2	0	0	200	0
		Arochlor 1232	mg/kg	0.2	0	0	200	0
		Arochlor 1242	mg/kg	0.2	0	0	200	0
		Arochlor 1248	mg/kg	0.2	0	0	200	0
		Arochlor 1254	mg/kg	0.2	0	0	200	0
		Arochlor 1260	mg/kg	0.2	0	0	200	0
		Total PCBs (Arochlors)	mg/kg	1	0	0	200	0
	Surrogates	TCMX (Surrogate)	mg/kg	-	0.156756757	0.147447447	30	6

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

Method: ME-(AU)-ENVJAN404

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273342.001	LB328754.004	Perfluorobutanoic acid (PFBA)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluoropentanoic acid (PFPeA)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorohexanoic acid (PFHxA)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorooctanoic acid (PFOA)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluoropropane sulfonic acid (PFPrS)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005	<0.005	<0.005	200	0
		Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005	<0.005	<0.005	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)

Method: ME-(AU)-[ENV]AN404

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273342.001	LB328754.004	Perfluorononane sulfonic acid (PFNS)	mg/kg	0.005	<0.005	<0.005	200	0
		1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	mg/kg	0.005	<0.005	<0.005	200	0
		1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	mg/kg	0.005	<0.005	<0.005	200	0
		1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	mg/kg	0.005	<0.005	<0.005	200	0
		1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2	mg/kg	0.005	<0.005	<0.005	200	0
		(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	89	96	200	8
		(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	83	94	200	12
		(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	86	95	200	10
		(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	87	99	200	13
		(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	82	98	200	18
		(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	84	91	200	8
		(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	115	131	200	13
		(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	77	88	200	13
		(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	82	93	200	12
		(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	82	92	200	12
		(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	91	98	200	7

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 %
SE273472.007	LB328855.014	Arsenic, As	mg/kg	1	3	3	66	4
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	12	12	34	2
		Copper, Cu	mg/kg	0.5	29	29	32	1
		Nickel, Ni	mg/kg	0.5	9.9	10	35	1
		Lead, Pb	mg/kg	1	11	12	39	2
		Zinc, Zn	mg/kg	2	42	47	35	11
SE273534.002	LB328855.024	Arsenic, As	mg/kg	1	5.5835399449	5.79815925	48	4
		Cadmium, Cd	mg/kg	0.3	0.0517329745	0.0333675	200	0
		Chromium, Cr	mg/kg	0.5	11.799774168710	5.32451375	34	11
		Copper, Cu	mg/kg	0.5	12.3419357422	12.06680025	34	2
		Nickel, Ni	mg/kg	0.5	5.6518274713	5.71140375	39	1
		Lead, Pb	mg/kg	1	15.461951438214	8.92471375	37	4
		Zinc, Zn	mg/kg	2	20.3243337177	19.53889575	40	4

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472.006	LB328852.026	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	120	110	69	11
		TRH C29-C36	mg/kg	45	230	230	49	1
		TRH C37-C40	mg/kg	100	<100	<100	161	0
		TRH C10-C36 Total	mg/kg	110	350	340	62	4
		TRH >C10-C40 Total (F bands)	mg/kg	210	300	420	88	35
		TRH >C10-C16	mg/kg	25	<25	<25	198	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	300	290	61	2
		TRH >C34-C40 (F4)	mg/kg	120	<120	130	126	9
SE273534.002	LB328852.024	TRH C10-C14	mg/kg	20	1.1031109858	0	200	0
		TRH C15-C28	mg/kg	45	5.7431385064	0	200	0
		TRH C29-C36	mg/kg	45	7.0872203387	0	200	0
		TRH C37-C40	mg/kg	100	1.1968218705	0	200	0
		TRH C10-C36 Total	mg/kg	110	0	0	200	0
		TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH >C10-C16	mg/kg	25	1.5207937863	0	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
		TRH >C16-C34 (F3)	mg/kg	90	10.6857183115	0	200	0
		TRH >C34-C40 (F4)	mg/kg	120	2.6372920414	0	200	0

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472.007	LB328853.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

VOC's in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273472.007	LB328853.014	Monocyclic	m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
		Aromatic	o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.7	7.7	50	1
			d8-toluene (Surrogate)	mg/kg	-	7.9	7.8	50	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.8	9.3	50	6
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
		SE273534.002	LB328853.024	Monocyclic	Benzene	mg/kg	0.1	0.0010620647	0.0010481877
Aromatic	Toluene			mg/kg	0.1	0.0148712601	0.0148305810	200	0
	Ethylbenzene			mg/kg	0.1	0.0008318714	0.0007932704	200	0
	m/p-xylene			mg/kg	0.2	0.0022153861	0.0021913019	200	0
	o-xylene			mg/kg	0.1	0.0008800101	0.0008297559	200	0
Polycyclic	Naphthalene (VOC)*			mg/kg	0.1	0.0078014485	0.0064259325	200	0
Surrogates	d4-1,2-dichloroethane (Surrogate)			mg/kg	-	8.6579601704	8.9781090127	50	4
	d8-toluene (Surrogate)			mg/kg	-	8.7085051282	9.1192322043	50	5
	Bromofluorobenzene (Surrogate)			mg/kg	-	8.2421612032	7.9553314727	50	4
Totals	Total BTEX*			mg/kg	0.6	0	0	200	0
	Total Xylenes*			mg/kg	0.3	0.0030953963	0.0030210578	200	0

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %		
SE273472.007	LB328853.014	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	-	7.7	7.7	50	1	
		d8-toluene (Surrogate)	mg/kg	-	7.9	7.8	50	0		
		Bromofluorobenzene (Surrogate)	mg/kg	-	8.8	9.3	50	6		
		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		
		SE273534.002	LB328853.024	TRH C6-C10	mg/kg	25	1.1616184277	1.0970836086	200	0
				TRH C6-C9	mg/kg	20	0.5089242898	0.4552508149	200	0
Surrogates	d4-1,2-dichloroethane (Surrogate)			mg/kg	-	8.6579601704	8.9781090127	50	4	
d8-toluene (Surrogate)	mg/kg			-	8.7085051282	9.1192322043	50	5		
Bromofluorobenzene (Surrogate)	mg/kg			-	8.2421612032	7.9553314727	50	4		
VPH F Bands	Benzene (F0)			mg/kg	0.1	0.0010620647	0.0010481877	200	0	
TRH C6-C10 minus BTEX (F1)	mg/kg			25	1.1616184277	1.0970836086	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.

Conductivity and TDS by Calculation - Soil

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB329142.002	Conductivity of Extract (1:5 as received)	µS/cm	1	290	303	85 - 115	95

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB328858.002	Mercury	mg/kg	0.05	0.19	0.2	80 - 120	95

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB328852.002	Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	110
	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	107
	Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	109
	Dieldrin	mg/kg	0.2	0.2	0.2	60 - 140	119
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	70
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	120
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	40 - 130	98

OP Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB328852.002	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.0	2	60 - 140	98
	Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	100
	Dichlorvos	mg/kg	0.5	1.5	2	60 - 140	76
	Ethion	mg/kg	0.2	1.8	2	60 - 140	90
	Surrogates						
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	99
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	98

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB328852.002	Naphthalene	mg/kg	0.1	4.3	4	60 - 140	108
	Acenaphthylene	mg/kg	0.1	4.3	4	60 - 140	107
	Acenaphthene	mg/kg	0.1	4.3	4	60 - 140	108
	Phenanthrene	mg/kg	0.1	4.8	4	60 - 140	120
	Anthracene	mg/kg	0.1	4.5	4	60 - 140	111
	Fluoranthene	mg/kg	0.1	4.9	4	60 - 140	122
	Pyrene	mg/kg	0.1	5.2	4	60 - 140	129
	Benzo(a)pyrene	mg/kg	0.1	5.4	4	60 - 140	135
	Surrogates						
	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	93
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	99
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	98

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB328852.002	Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	115

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

Method: ME-(AU)-[ENV]AN404

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB328754.002	Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005	<0.005	0.004	40 - 160	84
	Perfluorooctanoic acid (PFOA)	mg/kg	0.005	<0.005	0.004	40 - 160	90
	Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005	<0.005	0.004	40 - 160	85

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

Method: ME-(AU)-[ENV]AN404/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB328855.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	103
	Cadmium, Cd	mg/kg	0.3	4.2	4.81	70 - 130	87
	Chromium, Cr	mg/kg	0.5	35	38.31	80 - 120	91
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	106
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	97
	Lead, Pb	mg/kg	1	88	89.9	80 - 120	97
	Zinc, Zn	mg/kg	2	260	273	80 - 120	96

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.

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB328852.002	TRH C10-C14	mg/kg	20	45	40	60 - 140	112	
	TRH C15-C28	mg/kg	45	<45	40	60 - 140	105	
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	87	
	TRH F Bands	TRH >C10-C16	mg/kg	25	44	40	60 - 140	111
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	96
		TRH >C34-C40 (F4)	mg/ka	120	<120	20	60 - 140	87

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB328853.002	Monocyclic	Benzene	mg/kg	0.1	4.2	5	60 - 140	84
	Aromatic	Toluene	mg/kg	0.1	4.3	5	60 - 140	87
		Ethylbenzene	mg/kg	0.1	4.4	5	60 - 140	87
		m/p-xylene	mg/kg	0.2	8.4	10	60 - 140	84
		o-xylene	mg/kg	0.1	4.4	5	60 - 140	88

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB328853.002	TRH C6-C10	mg/kg	25	73	92.5	60 - 140	79
	TRH C6-C9	mg/kg	20	64	80	60 - 140	80
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	47	62.5	60 - 140

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 identifier 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%
SE273502.001	LB328858.004	Mercury	mg/kg	0.05	0.18	0.00399207920	0.2	88

OC Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Original	Spike	Recovery%
SE273502.001	LB328852.026	Alpha BHC	mg/kg	0.1	0.00067555779	-	-
		Hexachlorobenzene (HCB)	mg/kg	0.1	0.00018448295	-	-
		Beta BHC	mg/kg	0.1	0.00098879994	-	-
		Lindane (gamma BHC)	mg/kg	0.1	0.00059231937	-	-
		Delta BHC	mg/kg	0.1	0.00075005504	0.2	121
		Heptachlor	mg/kg	0.1	4.87269210767	0.2	123
		Aldrin	mg/kg	0.1	0.00013853170	0.2	121
		Heptachlor epoxide	mg/kg	0.1	3.49039642458	-	-
		Gamma Chlordane	mg/kg	0.1	0	-	-
		Alpha Chlordane	mg/kg	0.1	0	-	-
		Alpha Endosulfan	mg/kg	0.2	0.00191380068	-	-
		p,p'-DDE	mg/kg	0.1	2.52367862663	-	-
		Dieldrin	mg/kg	0.2	0.00080135434	0.2	127
		Endrin	mg/kg	0.2	9.62962030726	0.2	61
		Beta Endosulfan	mg/kg	0.2	0.00650125047	-	-
		p,p'-DDD	mg/kg	0.1	5.78150532766	-	-
		Endrin aldehyde	mg/kg	0.1	0	-	-
		Endosulfan sulphate	mg/kg	0.1	0.00074818024	-	-
		p,p'-DDT	mg/kg	0.1	0.00080008856	0.2	113
		Endrin ketone	mg/kg	0.1	3.93073483128	-	-
		Methoxychlor	mg/kg	0.1	0.00021674789	-	-
		Mirex	mg/kg	0.1	0.00261464895	-	-
		Total OC VIC EPA	mg/kg	1	0	-	-
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.146846847	-	100

OP Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Original	Spike	Recovery%
SE273502.001	LB328852.026	Azinphos-methyl (Guthion)	mg/kg	0.2	0.00024277172	-	-
		Bromophos Ethyl	mg/kg	0.2	0.00026882376	-	-
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0.00071074707	2	98
		Diazinon (Dimpylate)	mg/kg	0.5	3.16250849445	2	97
		Dichlorvos	mg/kg	0.5	0.00195885279	2	78
		Dimethoate	mg/kg	0.5	0.00040204651	-	-
		Ethion	mg/kg	0.2	0.00055659260	2	89
		Fenitrothion	mg/kg	0.2	0.00030873932	-	-
		Malathion	mg/kg	0.2	0.00090397443	-	-
		Methidathion	mg/kg	0.5	1.28186405237	-	-
		Parathion-ethyl (Parathion)	mg/kg	0.2	2.16284849097	-	-
		Total OP Pesticides*	mg/kg	1.7	0	-	-
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.48137915314	-	98
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.47026243060	-	95
	Surrogates						

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Original	Spike	Recovery%
SE273502.001	LB328852.026	Naphthalene	mg/kg	0.1	0.00022048961	4	101
		2-methylnaphthalene	mg/kg	0.1	0.00014386588	-	-
		1-methylnaphthalene	mg/kg	0.1	0.00015624037	-	-
		Acenaphthylene	mg/kg	0.1	0.00021668621	4	100
		Acenaphthene	mg/kg	0.1	3.42542172304	4	100
		Fluorene	mg/kg	0.1	4.08449874121	-	-
		Phenanthrene	mg/kg	0.1	0.00048008739	4	112
		Anthracene	mg/kg	0.1	0.00046835566	4	104
		Fluoranthene	mg/kg	0.1	0.00109871062	4	106
		Pyrene	mg/kg	0.1	0.00128216775	4	115
		Benzo(a)anthracene	mg/kg	0.1	0.00735302313	-	-
		Chrysene	mg/kg	0.1	0.00087578309	-	-

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number	Parameter	Units	LOR	Original	Spike	Recovery%
SE273502.001	LB328852.026	Benzo(b&j)fluoranthene	mg/kg	0.1	0.00119010324	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	0.00112502884	-	-
		Benzo(a)pyrene	mg/kg	0.1	0.00075303609	4	126
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.00061559679	-	-
		Dibenzo(ah)anthracene	mg/kg	0.1	0.00052703338	-	-
		Benzo(ghi)perylene	mg/kg	0.1	0.00061249192	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	0	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	0.121	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	0.242	-	-
		Total PAH (18)	mg/kg	0.8	0	-	-
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.44304202269	-	90
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.48137915314	-	98
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.47026243060	-	95

PCBs in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Original	Spike	Recovery%
SE273502.001	LB328852.026	Arochlor 1016	mg/kg	0.2	0	-	-
		Arochlor 1221	mg/kg	0.2	0	-	-
		Arochlor 1232	mg/kg	0.2	0	-	-
		Arochlor 1242	mg/kg	0.2	0	-	-
		Arochlor 1248	mg/kg	0.2	0	-	-
		Arochlor 1254	mg/kg	0.2	0	-	-
		Arochlor 1260	mg/kg	0.2	0	0.4	121
		Total PCBs (Arochlors)	mg/kg	1	0	-	-
	Surrogates	TCMX (Surrogate)	mg/kg	-	0.146846847	-	100

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%
SE273502.001	LB328855.004	Arsenic, As	mg/kg	1	44	5.07213114754	50	78
		Cadmium, Cd	mg/kg	0.3	40	0.05324590163	50	80
		Chromium, Cr	mg/kg	0.5	45	6.17468852459	50	78
		Copper, Cu	mg/kg	0.5	48	6.69062295081	50	83
		Nickel, Ni	mg/kg	0.5	42	0.67888524590	50	83
		Lead, Pb	mg/kg	1	50	18.45842622950	50	63 @
		Zinc, Zn	mg/kg	2	44	16.45481967210	50	54 @

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE273502.001	LB328852.004	TRH C10-C14	mg/kg	20	47	12.85158208950	40	85
		TRH C15-C28	mg/kg	45	49	11.61456716417	40	95
		TRH C29-C36	mg/kg	45	50	13.36421890547	40	92
		TRH C37-C40	mg/kg	100	<100	1.70730348258	-	-
		TRH C10-C36 Total	mg/kg	110	150	0	-	-
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	0	-	-
	TRH F Bands	TRH >C10-C16	mg/kg	25	47	16.19263681590	40	78
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	47	0	-	-
		TRH >C16-C34 (F3)	mg/kg	90	<90	18.00023880597	40	89
		TRH >C34-C40 (F4)	mg/kg	120	<120	5.09293532338	-	-

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE273502.001	LB328853.004	Monocyclic	Benzene	mg/kg	0.1	5.2	0.01409807729	5	103
			Aromatic	Toluene	mg/kg	0.1	5.1	0.02433610226	5
		Ethylbenzene		mg/kg	0.1	5.3	0.01912872942	5	105
		m/p-xylene		mg/kg	0.2	10	0.04710082527	10	101
		o-xylene		mg/kg	0.1	5.3	0.02479620205	5	106
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	0.00332328349	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.4	8.79312694147	-	104
			d8-toluene (Surrogate)	mg/kg	-	9.8	8.56399211529	-	98
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.5	8.89017120748	-	95
		Totals	Total BTEX*	mg/kg	0.6	31	0	-	-
			Total Xylenes*	mg/kg	0.3	15	0.07189702733	-	-

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE273502.001	LB328853.004	TRH C6-C10	mg/kg	25	72	0.94545099060	92.5	77
		TRH C6-C9	mg/kg	20	60	0.57609227219	80	74
		Surrogates						
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.4	8.79312694147	-	104
		d8-toluene (Surrogate)	mg/kg	-	9.8	8.56399211529	-	98
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.5	8.89017120748	-	95
		VPH F						
		Benzene (F0)	mg/kg	0.1	5.2	0.01409807729	-	-
	Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	41	0.94545099060	62.5	64

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the

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.
- *** Indicates that both * and ** apply.
- 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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law .

This test report shall not be reproduced, except in full.

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.136-WX**
Order Number **S-05667.136-WX**
Samples 6

LABORATORY DETAILS

Manager Shane McDermott
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 **SE273472 R0**
Date Received 01 Nov 2024
Date Reported 08 Nov 2024

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.

A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin

SIGNATORIES



Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Date Analysed	Fibre Identification	Est.%w/w*
SE273472.001	EDP-DSI.024.TP 05-0.1	Soil	131g Clay, Sand, Soil, Rocks, Bitumen	01 Nov 2024	06 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273472.002	EDP-DSI.024.BH 05-1.0	Soil	140g Clay, Sand, Rocks	01 Nov 2024	06 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273472.003	EDP-DSI.024.TP 06-0.2	Soil	125g Clay, Sand, Rocks	01 Nov 2024	06 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273472.005	EDP-DSI.024.TP 06-2.0	Soil	146g Clay, Rocks	01 Nov 2024	06 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE273472.006	EDP-DSI.024.TP 08-0.1	Soil	113g Clay, Sand, Soil, Rocks, Plant Matter	01 Nov 2024	06 Nov 2024	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE273472.007	EDP-DSI.024.TP 08-0.5	Soil	136g Clay, Sand, Rocks	01 Nov 2024	06 Nov 2024	No Asbestos Found at RL of 0.1g/kg	<0.01

METHOD

METHODOLOGY SUMMARY

AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states: "Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres); (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.

Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.

Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

This test report shall not be reproduced, except in full.

Request for Laboratory Services and Chain of Custody Form

Received Date: 29/10/24 Received By: N Laboratory Section: ✓ Cooling Method: ✓ Ice ✓ Impact ✓ None ✓ Samples Intact: ✓ Yes ✓ No ✓
Logged-In Date: 29/10/24 Time of Receipt: 2:40 pm Cooler Sealed: ✓ Yes ✓ No ✓ Temperature: ✓ Ambient ✓ Chilled ✓

COC must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

Name: Cristiane Florido Quote #:
Company: EDP Consultants Pty Ltd Attached Parameter List: ✓ Yes ✓ No ✓
Address: Level 4 38 Oxley Street Replacement Sample Containers Required: ✓ Yes ✓ No ✓
St Leonards NSW 2065 Results Required By: Standard TA except pH/pHfox Urgent TA requires lab approval
Email: invoices@edp-au.com; Project.admin@edp-au.com; Cristiane.Florido@edp-au.com Notes: Standard TA for all analytes except pH/pHfox (24 Hours)
Phone: 0413 378 102 Fax:

PO No.: Project No.: S-05667.135 - WX

Company Name: EDP Consultants Pty Ltd

Contact Name: Cristiane Florido Samplers: Tary Mathew

Address: Level 4 38 Oxley Street, St Leonards NSW 2065

Phone Number: 0413 378 102 / 0452 316 267 After Hours Phone Number: NA

Number: NA cristiane.florido@edp-au.com; william.xu@edp-au.com; m7m12@edp-au.com

Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

State results format (please check one): Email & Esd ✓ Fax ✓

SAMPLE INFORMATION

Sample Identifier	Date Sampled	Matrix: Soil Water Other	# of Bags	# of Bottles	Analysis Requested									Notes
					C17	C10	Asbestos (presence / absence)	PFAS Short suite	CRS	Salinity	TRH/TEX	Ph/Pfox (24 Hour TAT)	HOLD	
EDP-DSI.024.BH01 - 0.5 ✓	28/10/2024	S	+3		X		X	X		X		X		All CRS Samples on hold please
EDP-DSI.024.BH01 - 3.0	28/10/2024	S	0			X	X			X		X		
EDP-DSI.024.BH01 - 4.5	28/10/2024	S	3							X		X		
EDP-DSI.024.BH02 - 0.5	28/10/2024	S	32		X		X			X		X		
EDP-DSI.024.BH02 - 0.8	28/10/2024	S	0			X	X			X		X		
EDP-DSI.024.BH02 - 3.0	28/10/2024	S	32							X		X		
EDP-DSI.024.BH03 - 1.0	28/10/2024	S	32		X		X	X		X		X		
EDP-DSI.024.BH03 - 3.0	28/10/2024	S	32			X	X			X		X		
EDP-DSI.024.BH04 - 0.5	28/10/2024	S	2		X		X			X		X		
EDP-DSI.024.BH04 - 1.5	28/10/2024	S	0			X	X			X		X		
EDP-DSI.024.BH04 - 3.0	28/10/2024	S	3							X		X		
EDP-DSI.024.BH07 - 0.4	28/10/2024	S	3		X		X	X		X		X		
EDP-DSI.024.BH07 - 3.0	28/10/2024	S	3			X	X			X		X		
EDP-DSI.024.QC01	28/10/2024	S				X								
					5	6	10	3	0	13		13	0	

Prepared By: Tary Mathew Date: 28/10/2024

Requested By: Courier Pick-up Date: 29/10/2024 Time:

SGS EHS Alexandria Laboratory



SE273341A COC
Received: 30 - Oct - 2024



STATEMENT OF QA/QC PERFORMANCE

SE273341A R0

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.135-WX - pHf/pHfox**
Order Number **S-05667.135**
Samples 14

LABORATORY DETAILS

Manager Shane McDermott
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 **SE273341A R0**
Date Received 29 Oct 2024
Date Reported 31 Oct 2024

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 (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	13 Soil	Type of documentation received	COC
Date documentation received	29/10/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	5.4°C
Sample container provider	SGS	Turnaround time requested	Two Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		



HOLDING TIME SUMMARY

SE273341A 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

Field pH for Acid Sulphate Soil

Method: ME-(AU)-[ENV]AN104

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EDP-DSI.024.BH01-0.5	SE273341A.001	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH01-3.0	SE273341A.002	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH01-4.5	SE273341A.003	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH02-0.5	SE273341A.004	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH02-0.8	SE273341A.005	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH02-3.0	SE273341A.006	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH03-1.0	SE273341A.007	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH03-3.0	SE273341A.008	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH04-0.5	SE273341A.009	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH04-1.5	SE273341A.010	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH04-3.0	SE273341A.011	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH07-0.4	SE273341A.012	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024
EDP-DSI.024.BH07-3.0	SE273341A.013	LB328398	28 Oct 2024	29 Oct 2024	25 Nov 2024	31 Oct 2024	25 Nov 2024	31 Oct 2024

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No surrogates were required for this job.

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.

No method blanks were required for this job.

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Field pH for Acid Sulphate Soil

Method: ME-(AU)-[ENV]AN104

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE273341A.010	LB328398.012	pHf	pH Units	-	6.1	6.0	30	2
		pHfox	pH Units	-	5.0	4.9	30	2
SE273341A.013	LB328398.016	pHf	pH Units	-	6.1	6.1	30	1
		pHfox	pH Units	-	5.3	5.8	30	9



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.

Sample Number	Parameter	Units	LOR
---------------	-----------	-------	-----

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spikes were required for this job.

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the

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.
- *** Indicates that both * and ** apply.
- 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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law .

This test report shall not be reproduced, except in full.

CLIENT DETAILS

Contact Cristiane Florido
 Client EDP CONSULTANTS PTY LTD
 Address LEVEL 4, 38 OXLEY STREET
 ST LEONARDS NSW 2065

Telephone 61 2 84845810
 Facsimile (Not specified)
 Email cristiane.florido@edp-au.com

Project **S-05667.135-WX - pHf/pHfox**
 Order Number **S-05667.135**
 Samples 14

LABORATORY DETAILS

Manager Shane McDermott
 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 **SE273341A R0**
 Date Received 29/10/2024
 Date Reported 31/10/2024

COMMENTS

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

SIGNATORIES



Dong LIANG
 Metals/Inorganics Team Leader

Field pH for Acid Sulphate Soil [AN104] Tested: 31/10/2024

PARAMETER	UOM	LOR	EDP-DSI.024.BH01-0	EDP-DSI.024.BH01-3	EDP-DSI.024.BH01-4	EDP-DSI.024.BH02-0	EDP-DSI.024.BH02-0
			5	0	5	5	8
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341A.001	SE273341A.002	SE273341A.003	SE273341A.004	SE273341A.005
pHf	pH Units	-	8.0	5.8	5.4	8.7	8.4
pHfox	pH Units	-	7.8	3.9	4.0	8.4	7.7
Reaction Rate (pHfox)*	No unit	-	4	3	2	4	4
pH Difference*	pH Units	-10	0.3	2.0	1.4	0.3	0.7

PARAMETER	UOM	LOR	EDP-DSI.024.BH02-3	EDP-DSI.024.BH03-1	EDP-DSI.024.BH03-3	EDP-DSI.024.BH04-0	EDP-DSI.024.BH04-1
			0	0	0	5	5
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
			SE273341A.006	SE273341A.007	SE273341A.008	SE273341A.009	SE273341A.010
pHf	pH Units	-	5.9	5.2	7.1	8.1	6.1
pHfox	pH Units	-	4.2	3.7	6.1	7.5	5.0
Reaction Rate (pHfox)*	No unit	-	2	2	4	4	3
pH Difference*	pH Units	-10	1.6	1.4	1.0	0.6	1.1

PARAMETER	UOM	LOR	EDP-DSI.024.BH04-3	EDP-DSI.024.BH07-0	EDP-DSI.024.BH07-3
			0	4	0
			SOIL	SOIL	SOIL
			-	-	-
			28/10/2024	28/10/2024	28/10/2024
			SE273341A.011	SE273341A.012	SE273341A.013
pHf	pH Units	-	7.1	8.6	6.1
pHfox	pH Units	-	6.9	7.9	5.3
Reaction Rate (pHfox)*	No unit	-	4	4	4
pH Difference*	pH Units	-10	0.2	0.7	0.8

METHOD

METHODOLOGY SUMMARY

AN104

pHF is determined on an extract of approximately 2g of as received sample in approximately 10 mL of deionised water with pH determined after standing 30 minutes.

AN104

pHFox is determined on an extract of approximately 2g of as received sample with a few mLs of 30% hydrogen peroxide (adjusted to pH 4.5 to 5.5) with the extract reaction being rated from slight to extreme, with pH determined after reaction is complete and extract has cooled. Referenced to ASS Laboratory Methods Guidelines, method 23Af-Bf, 2004.

- 0 No Reaction
- 1 Slight Reaction
- 2 Moderate Reaction
- 3 Strong/High Reaction
- 4 Extreme/Vigorous Reaction (gas evolution and heat generation)

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
		IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
***	Indicates that both * and ** apply.	LNR	Sample listed, but not received.		

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 calculated 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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or



SAMPLE RECEIPT ADVICE

SE273341A

CLIENT DETAILS

Contact Cristiane Florido
Client EDP CONSULTANTS PTY LTD
Address LEVEL 4, 38 OXLEY STREET
ST LEONARDS NSW 2065

Telephone 61 2 84845810
Facsimile (Not specified)
Email cristiane.florido@edp-au.com

Project **S-05667.135-WX - pHf/pHfox**
Order Number **S-05667.135**
Samples 14

LABORATORY DETAILS

Manager Shane McDermott
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 29/10/2024
Report Due Thu 31/10/2024
SGS Reference **SE273341A**

SUBMISSION DETAILS

This is to confirm that 14 samples were received on Tuesday 29/10/2024. Results are expected to be ready by COB Thursday 31/10/2024. Please quote SGS reference SE273341A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	13 Soil	Type of documentation received	COC
Date documentation received	29/10/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	5.4°C
Sample container provider	SGS	Turnaround time requested	Two Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



SAMPLE RECEIPT ADVICE

SE273341A

CLIENT DETAILS

Client EDP CONSULTANTS PTY LTD

Project S-05667.135-WX - pHf/pHfox

SUMMARY OF ANALYSIS

No.	Sample ID	Field pH for Acid Sulphate Soil
001	EDP-DSI.024.BH01-0.5	4
002	EDP-DSI.024.BH01-3.0	4
003	EDP-DSI.024.BH01-4.5	4
004	EDP-DSI.024.BH02-0.5	4
005	EDP-DSI.024.BH02-0.8	4
006	EDP-DSI.024.BH02-3.0	4
007	EDP-DSI.024.BH03-1.0	4
008	EDP-DSI.024.BH03-3.0	4
009	EDP-DSI.024.BH04-0.5	4
010	EDP-DSI.024.BH04-1.5	4
011	EDP-DSI.024.BH04-3.0	4
012	EDP-DSI.024.BH07-0.4	4
013	EDP-DSI.024.BH07-3.0	4

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 .

APPENDIX G: TABLE OF RESULTS

TABLE A: SUMMARY OF SOIL ANALYTICAL RESULTS

[illegible]

APPENDIX H: QUALITY ASSURANCE / QUALITY CONTROL

QUALITY ASSURANCE / QUALITY CONTROL

Field Quality Assurance Sampling Procedures

EDP acknowledges an oversight in the quality assurance / quality control sampling process for this DSI. Due to the urgent response time to the client's request for sampling in the subject area, Trip blank, trip spike sample were not used and analysed and the sample integrity during travel or cross-contamination from sampling equipment could not be assessed for this DSI.

Fieldwork was undertaken by experienced EDP environmental consultants in accordance with work practices defined by industry accepted standard practice and NEPM 2013.

Disposable nitrile gloves were used during the sampling process and changed between each sample collected. Samples were collected directly from the bottom of the test pit and end of auger after advancement using an excavator and drill rig.

Phosphate-free detergent was used to clean sampling instruments between sample locations. The sampling instruments were rinsed in deionised water and then sprayed with deionised water to minimise the potential for cross-contamination to occur.

Samples were placed directly into laboratory supplied jars and bags. The samples were stored on ice before being transported to the laboratory along with CoC documentation, which is included in Appendix G.

Field Quality Control Samples

Field Duplicate Samples

The purpose of duplicate samples was to estimate the variability of a given characteristic or contaminant associated with a population.

Field duplicate samples were collected from samples concurrently during the collection of the primary sample by placing approximately equal portions of the primary sample into two additional sample jars/bottles. Samples were labelled so as to conceal their relationship to the primary sample from the laboratory.

The blind and split duplicate samples analysed is outlined in **Table I-1**.

Table I-1: Field Blind and Split Duplicate Samples Analysed

Medium	Primary Sample	Field Duplicate	Analysis
Soil	EDP-DSI.024.BH03-I.0	EDP-DSI.024.QC01	TRH, BTEX, Metals, PAH
Soil	EDP-DSI.024.TP05-0.1	EDP-DSI.024.QC02	TRH, BTEX, Metals, PAH
Soil	EDP-DSI.024.BH10-0.5	EDP-DSI.024..QC03	TRH, BTEX, Metals, PAH

The quantity of duplicate samples analysed conformed to the frequency set in the DQI outlined in **Table I-2**.

RPDs were calculated for each of the duplicate samples analysed. RPDs were calculated by dividing the difference between the primary sample and duplicate sample by the average of the two, as shown below:

$$RPD = \frac{(X_1 - X_2)}{(X_1 + X_2)/2} \times 100\%$$

Where: X_1 = Primary sample result; and

X_2 = Replicate sample result.

When calculating the RPDs, the following procedures were also considered:

- RPDs were only considered when a concentration was greater than the LOR; and
- In instances where results were greater than the LOR for the one sample, but below LOR for the corresponding primary or duplicate sample, a result equal to the LOR value was adopted where necessary in order to make a calculation possible.

RPDs for duplicate samples were calculated and the results are attached in **Table I-3** provided in **Attachment I**.

RPDs for primary and duplicate samples were generally found to be within the acceptable limits and suitable for this DSI, as summarised in **Table I-2**. Elevated RPDs were all considered acceptable as they were associated with statistical variance being caused by small fluctuations in concentration in results at the same order of magnitude as the limit of reporting.

Table I-2: Field Blind and Split Duplicate RPD Results

Primary Sample	Field Duplicate	Results
EDP-DSI.024.BH03-1.0	EDP-DSI.024.QC01	RPD results were within the acceptable ranges set out in the DQIs.
EDP-DSI.024.TP05-0.1	EDP-DSI.024.QC02	RPD results were within the acceptable ranges set out in the DQIs.
EDP-DSI.024.BH10-0.5	EDP-DSI.024..QC03	RPD results were within the acceptable ranges set out in the DQIs.

Laboratory Quality Assurance/Quality Control

The laboratories conducted their own internal quality program for assessment of the repeatability of the analytical procedures and instrument accuracy under their NATA accreditation. This included analysis of laboratory blank samples, duplicate samples, spike samples, control samples and surrogate spikes. The laboratory QA/QC procedures and results are described within the laboratory reports presented in **Attachment G**.

The laboratory internal QA/QC sample results were reviewed and were consistent with the laboratory's NATA guidelines. Furthermore, the adoption of the general advisory ranges for specific recoveries has been used to screen laboratory data. Where recoveries were outside these ranges the data was assessed in relation to specific laboratory comments, published industry 'norms' for specific parameters and/or the likely impact on the interpretation of the meaning of the results.

Based on the reported laboratory QA/QC samples and methods used, the results were considered to be acceptable.

Quality Statement

Despite the limitations raised above, the data was appropriate for the objectives of the assessment based on the conclusions of the risk assessment. Given the level of field and laboratory QA measures adhered to, the level of QC analysis conducted was considered to be appropriate based on the sampling frequency and nature of the assessment and as such the DQIs outlined in **Table 7** are considered to have been met.

TABLE A: SUMMARY OF QUALITY CONTROL SAMPLE RESULTS



Lab Report Number			SE273341		SE273341		SE273472		SE273472		SE274540		SE274540		
Field ID			EDP-DSI.024.BH03-1.0		EDP-DSI.024.QC01		EDP-DSI.024.TP05-0.1		EDP-DSI.024.QC02		EDP-DSI.024.BH10-0.5		EDP-DSI.024.QC03		
Date			28 Oct 2024		28 Oct 2024		01 Nov 2024		01 Nov 2024		20 Nov 2024		20 Nov 2024		
Matrix Type			Soil		Soil		Soil		Soil		Soil		Soil		
			RPD		RPD		RPD		RPD		RPD		RPD		
	Unit	EQL													
BTEX	Naphthalene (VOC)	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Benzene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Toluene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Ethylbenzene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Xylene (m & p)	mg/kg	0.2	<0.2	<0.2	NC	<0.2	<0.2	NC	<0.2	<0.2	NC	<0.2	<0.2	NC
	Xylene (o)	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Xylene Total	mg/kg	0.3	<0.3	<0.3	NC	<0.3	<0.3	NC	<0.3	<0.3	NC	<0.3	<0.3	NC
	Total BTEX	mg/kg	0.6	<0.6	<0.6	NC	<0.6	<0.6	NC	<0.6	<0.6	NC	<0.6	<0.6	NC
TRH	C6-C10 Fraction (F1)	mg/kg	25	<25	<25	NC	<25	<25	NC	<25	<25	NC	<25	<25	NC
	C6-C10 (F1 minus BTEX)	mg/kg	25	<25	<25	NC	<25	<25	NC	<25	<25	NC	<25	<25	NC
	>C10-C16 Fraction (F2)	mg/kg	25	<25	<25	NC	<25	<25	NC	<25	<25	NC	<25	<25	NC
	>C10-C16 Fraction (F2 minus Naphthalene)	mg/kg	25	<25	<25	NC	<25	<25	NC	<25	<25	NC	<25	<25	NC
	>C16-C34 Fraction (F3)	mg/kg	90	<90	<90	NC	130	150	14	<90	<90	NC	<90	<90	NC
	>C34-C40 Fraction (F4)	mg/kg	120	<120	<120	NC	150	160	6	<120	<120	NC	<120	<120	NC
	>C10-C40 Fraction (Sum)	mg/kg	210	<210	<210	NC	280	310	10	<210	<210	NC	<210	<210	NC
Metals	Arsenic	mg/kg	1	3	3	0	4	4	0	4	5	22			
	Cadmium	mg/kg	0.3	<0.3	<0.3	NC	<0.3	<0.3	NC	<0.3	<0.3	NC	<0.3	<0.3	NC
	Chromium (III+VI)	mg/kg	0.5	12	13	8	10	10	0	7.2	8.9	21			
	Copper	mg/kg	0.5	46	46	0	28	25	11	29	31	7			
	Lead	mg/kg	1	13	13	0	14	14	0	13	14	7			
	Mercury	mg/kg	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
	Nickel	mg/kg	0.5	15	15	0	14	12	15	13	14	7			
	Zinc	mg/kg	2	73	71	3	57	66	15	51	60	16			
PAH	1-Methylnaphthalene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	0.2	0.3	40			
	2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	0.3	0.4	29			
	Acenaphthene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Acenaphthylene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Anthracene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Benzo(a) pyrene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Benzo(b+h)fluoranthene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	NC	0.1	0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Chrysene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Dibenz(a,h)anthracene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Fluoranthene	mg/kg	0.1	<0.1	<0.1	NC	0.1	0.1	0	<0.1	<0.1	NC	<0.1	<0.1	NC
	Fluorene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Naphthalene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Phenanthrene	mg/kg	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	0.1	0.2	67			
	Pyrene	mg/kg	0.1	<0.1	<0.1	NC	0.1	0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC
	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.2	<0.2	<0.2	NC	<0.2	0.2	NC	<0.2	<0.2	NC	<0.2	<0.2	NC
	Benzo(a)pyrene TEQ (LOR)	mg/kg	0.3	<0.3	<0.3	NC	<0.3	<0.3	NC	<0.3	<0.3	NC	<0.3	<0.3	NC
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.2	<0.2	<0.2	NC	<0.2	<0.2	NC	<0.2	<0.2	NC	<0.2	<0.2	NC
	PAHs (Sum of total)	mg/kg	0.8	<0.8	<0.8	NC	<0.8	0.9	12	<0.8	0.8	0			
	PAHs (Sum of positives)	mg/kg	0.8	<0.8	<0.8	NC	<0.8	0.9	12	<0.8	<0.8	NC			

NC denotes not calculated.

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 81 (1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory



Level 4, 38 Oxley Street
St Leonards, NSW 2065, Australia

email: enquiries@edp-au.com
www.edp-au.com

Office: +612 8484 5810

ABN: 13624867509