Soil Contamination Assessment

Northcote Public Golf Course, 143 Normanby Avenue, Thornbury, Victoria

City of Darebin
July 2023

prensa
property > environment > safety >

Executive Summary

Prensa Pty Ltd (Prensa) was engaged by City of Darebin (Council) to conduct a Detailed Site Investigation (SCA) of a nominated portion of the Northcote Public Golf Course, 143 Normanby Avenue, Thornbury, Victoria with an area of approximately 2,000 m^2, where proposed development works are to occur (the Site).

Prensa previously completed a site inspection and identified several raised areas as well as a refuse pile. During the site inspection, several fragments of non-friable fibre cement sheet were identified. One (1) fragment was submitted for laboratory analysis and was confirmed to be asbestos-containing. The extent of asbestos containing materials (ACM) within these raised areas was unknown and therefore further assessment was recommended.

Based on the information provided, it is understood that Council is currently in the process of redeveloping the community facilities at the Site. The redevelopment works will comprise the construction of a new public recreation space, including the installation of recreational equipment (i.e. outdoor gym equipment or playground).

To facilitate the redevelopment works, ground disturbance will be required, the extent of which is unknown. For the purposes of this SCA, Prensa has assumed that the proposed excavation works will extend to a maximum depth of 1.0 metres below ground level (m bgl).

The objectives of the SCA were to:

- Assess the contamination status of soil at the Site prior to its development as a recreational space (i.e. outdoor gym equipment or playground);
- Estimate the extent of asbestos contamination within the in-situ soil at the Site and evaluate the potential health risk posed to future users of the Site;
- Based on the findings, provide recommendations to manage contamination at the Site; and
- Classify in-situ soil in accordance with the *Environment Protection Regulations 2021* and relevant subordinate EPA Victoria guidelines prior to its proposed off-site disposal.

Prensa established sixteen (16) gridded test pits to 0.5 m bgl, with eight (8) of these advanced further to 1.0 m bgl using hand sampling equipment across the Site to assess the extent of asbestos and the contamination status of the soil. Fill was generally identified to approximately 0.7 m below ground level (bgl) across the Site and natural soil was predominantly identified from 0.7 m bgl to 1.0 m bgl.

Asbestos was identified at one (1) location (TP07), which has been defined as the 'Nominated Area', and exceeded the adopted human screening levels. However, based on observations made during the fieldworks for the assessment, which did not identify visible evidence of asbestos-containing materials in the other sampling locations, it is considered unlikely that the asbestos contamination is widespread across the Site. Based on the findings of this assessment, it is recommended that a soil management plan (SMP) be developed to manage asbestos (and soil contamination) at the Site during the proposed redevelopment works.

The classification of fill soil assessed at the Site was Category D contaminated soil, with the fill in the Nominated Area classified as Category D with asbestos, both of which are Reportable Priority Waste (Waste Code N120).

The classification of up to 75 m^3 natural soil is Category D contaminated soil, which is Reportable Priority Waste (Waste Code N120).

Based on the reported soil contaminant concentrations the 'Duty to Manage' contamination under Section 39 of the *Environmental Protection Act 2017* applies to the Site. EPA Publication 1834 should be referred to during the construction process for a general approach to managing potential environmental and human risks.

Statement of Limitations

This document has been prepared in response to specific instructions from City of Darebin 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 City of Darebin 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, Prensa advises that the report should only be relied upon by City of Darebin and those parties expressly referred to in the introduction of the report. The report should not be separated or reproduced in part and Prensa 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.

Prensa 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

Prensa acknowledges that any scientifically designed sampling program cannot guarantee all sub-surface 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. City of Darebin must therefore accept a level of risk associated with the possible failure to detect certain sub-surface contamination where the sampling and analytical program misses such contamination. Prensa 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.

City of Darebin 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, City of Darebin recognises this risk and waives any claims against Prensa and agrees to defend, indemnify and hold Prensa 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

Prensa notes that where information has been provided by other parties in order for the works to be undertaken, Prensa cannot guarantee the accuracy or completeness of this information. City of Darebin therefore waives any claim against the company and agrees to indemnify Prensa for any loss, claim or liability arising from inaccuracies or omissions in information provided to Prensa by third parties. No indications were found during our investigations that information contained in this report, as provided to Prensa, 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 City of Darebin and Prensa recognises that City of Darebin will consider their specific needs and the business risks involved. Prensa does not accept any liability for losses incurred as a result of City of Darebin not accepting the recommendations made within this report.

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1 Introduction

Prensa Pty Ltd (Prensa) was engaged by City of Darebin (Council) to conduct a Soil Contamination Assessment (SCA) of a nominated portion of the Northcote Public Golf Course, 143 Normanby Avenue, Thornbury, Victoria with an area of approximately 2,000 m^2, where development works are to occur (the Site). The location of the Site has been illustrated in **Figure 1** in the '**Figures**' section of this report.

2 Background

Prensa previously completed a site inspection and identified several raised areas as well as a refuse pile. During the site inspection, several fragments of non-friable fibre cement sheet were identified. One (1) fragment was submitted for laboratory analysis and was confirmed to be asbestos-containing. The extent of asbestos containing materials (ACM) within these raised areas was unknown and therefore further assessment was recommended.

Based on the information provided, it is understood that Council is currently in the process of redeveloping the community facilities at the Site. The redevelopment works comprise the construction of a new public recreation space, including the installation of recreational equipment (i.e. outdoor gym equipment or children's playground).

To facilitate the redevelopment works, ground disturbance will be required, the extent of which is unknown. For the purposes of this SCA, Prensa has assumed that the proposed excavation works will extend to a maximum depth of 1.0 metres below ground level (m bgl).

Council is currently in the process of finalising management options for soil generated during works. It is understood that Council would prefer to reuse soils onsite, where possible. However, where soil is surplus to Council's needs, offsite disposal of soils will be required.

As such, Council requested Prensa undertake this SCA to provide an indication of the contamination status of soils and the presence and extent of asbestos contamination. This will inform the potential risks posed to the future users of the Site and the opportunities to reuse the material onsite.

Council has further requested that Prensa provide a classification of in-situ soils in accordance with the *Environment Protection Regulations 2021* and relevant EPA Victoria Guidelines as outlined in **Section 4.3**.

3 Objectives

The objectives of the SCA were to:

- Assess the contamination status of soil at the Site prior to its development as a recreational space (i.e. outdoor gym equipment or playground);
- Estimate the extent of asbestos contamination within the in-situ soil at the Site and evaluate the potential health risk posted to future users of the Site;
- Based on the findings, provide recommendations to manage contamination at the Site; and
- Classify in-situ soil in accordance with the *Environment Protection Regulations 2021* and relevant subordinate EPA Victoria guidelines prior to its proposed off-site disposal.

4 Scope of Works

4.1 Key Undertakings

To complete the SCA, Prensa undertook the following scope of works:

- Site inspection;
- A desktop review of a range of available resources including those relevant to the environmental setting and historical uses/activities. The findings applicable to the contamination potential and sources reviewed for the Site are discussed and detailed in **Section 5**;
- Establishment of a Preliminary Conceptual Site Model (PSCM);
- Intrusive soil assessment, including:
    - Supervision of underground service locations of sixteen (16) sampling locations;
    - Establishment of sixteen (16) gridded test pit locations to a maximum depth of 0.5 m bgl using a shovel, with eight (8) of these locations advanced further to a maximum depth of 1.0 m bgl using a hand auger;
    - Collection of soil samples throughout the soil profile (including quality control samples) at each borehole for chemical analysis;
    - Sieving of ten (10) litre (L) representative soil samples from sixteen (16) test pits, collecting representative suspected asbestos-containing material (ACM) samples (where identified);
    - Logged soil observed at each test pit location;
    - Conducted onsite screening of soil at each sampling location for potential volatile contamination; and
    - Reinstatement of sampling locations using soil cuttings.
- Arranged analysis of samples at a National Association of Testing Authorities (NATA), Australia accredited laboratory (including QA/QC checks);
- Compared the field observations and analytical results against:
    - Adopted environmental value objectives and ecological human health and investigation screening levels;
    - Characteristics and contaminant thresholds to determine the waste disposal category; and
- Prepared this SCA report.

4.2 Assessment Boundaries

The SCA was limited to an assessment of the Site, the location of which has been illustrated in **Figure 1** in the '**Figures**' section of this report.

4.3 Regulatory Framework

The SCA was conducted with reference to and in general accordance with the methodologies outlined in the following:

- Victorian Government, *Occupational Health and Safety Act 2004*;
- Victorian Government, *Occupational Health and Safety Regulations 2017*;
- Victorian Government, *Environment Protection Act 2017* (the Act);
- Victorian Government, *Environment Protection Regulations 2021* (the Regulations);
- Victorian Government, *Environment Reference Standard*, 2021 (the ERS);
- National Environmental Protection Council, *National Environment Protection (Assessment of Site Contamination) Measure 1999*, 2013 (NEPM (ASC));
- EPA Victoria, Industrial Waste Resource Guidelines, *Sampling and Analysis of Waters, Wastewaters, Soils and Waste*, 2009 (IWRG701);
- EPA Victoria, Industrial Waste Resource Guidelines, *Soil Sampling*, 2009 (IWRG702);
- EPA Victoria, Publication 1968.1, *Guide to classifying industrial waste,* 2021*;*
- EPA Victoria, Publication 1827.2, *Waste Classification Assessment Protocol*, 2021;
- EPA Victoria, Publication 1828.2, *Waste Disposal Categories – Characteristics and Thresholds*, 2021;
- Victorian Government, *Specifications Acceptable to the Authority for Receiving Fill Material*, 2021 (EPA Determination S301);
- WorkSafe Victoria, *Compliance Code, Removing asbestos in workplaces,* 2019;
- Western Australian Department of Health, *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia*, 2021 (WA DoH 2021);
- Australian Government, *Model Code of Practice: How to Manage and Control Asbestos in the Workplace,* 2020;
- Standards Australia, Australian Standard 2159, *Piling – Design and installation*, 2009 (AS 2159-2009);
- Standards Australia, Australian Standard 4482.1, *Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 1: Non-volatile and semi-volatile compounds*, 2005[1];
- Standards Australia, Australian Standard 4482.2, *Guide to the Sampling and Investigation of Potentially Contaminated Soil*, Part 2: Volatile Substances, 1999[1]; and
- The 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*, 2011 (CRC CARE 2011).

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[1] It is noted that AS 4482.1 and AS 4482.2 have been withdrawn. The withdrawn standards have been considered in this document as they add to the 'state of knowledge' without a replacement available. These documents are also referenced in relevant guidelines such as the NEPM (ASC) 2013 and IWRG702.

5   Desktop Review

5.1   Site Location and Description

The Site was located approximately 8 kilometres (km) north from the Melbourne Central Business District. The location of the Site has been illustrated in **Figure 1** provided in the '**Figures**' section of this report.

A description of the Site has been provided in **Table 1** below.

Table 1: Site Description	
Aspect	**Details**
Site Address	143 Normanby Avenue, Thornbury, Victoria.
Total Area of Site	Approximately 2,000 m^2 (0.2 hectares).
Lot and Plan Details	Lot A on Title Plan (TP) LP211948.
Local Council	City of Darebin.
Planning Zone	Public Park and Recreation Zone (PPRZ).
Planning Overlays and Information	• Special Building Overlay (SBO); • Erosion Management Overly (EMO); • Environmental Significance Overlay (ESO); • Land Subject to Inundation Overlay (LSIO); and • Development Contributions Plan Overlay (DCPO).
Current Site Use	Public recreation space.
Proposed Use	Specific development plans have not been provided for development proposed at the Site. However it is understood that the likely use will comprise public recreation open space with either a children's playground, which is characterised as a sensitive use, or outdoor gym equipment.

Planning Property Reports for the Site sourced online (DEECA (VicUnearthed), 2023) are provided in **Appendix A.**

5.2   Environmental Setting

5.2.1   Key Findings

A summary of the environmental setting for the Site has been outlined in **Table 2.** The information below was obtained from online databases outlined in **Section 15**.

Table 2: Environmental Setting	
Aspect	**Details**
Surrounding Land Uses	North: Mayer Park and high-density residential buildings.
	East: High-density residential buildings.
	South: High-density residential buildings and Northcote public golf course.
	West: Northcote public golf course.
Topography	The surface topography of the Site undulates between 50 m on the east and 34 m to the west. The surrounding area generally grades up/down to the west.
Geology	Newer Volcanic Group (VVG, 2019).
Acid Sulfate Soils Likelihood	Extremely low probability/moderate confidence (ASRIS, 2014).
Surface Water Receptors	Stormwater catchment draining into the Merri Creek, approximately 15 m west of the Site at its nearest point.
Groundwater Depth	Groundwater has not previously been investigated at the Site or within the public golf course. Surrounding audit reports and bores indicate that groundwater would likely be encountered between 5.8 to 25 m bgl, while the Groundwater Resource Report provided in **Appendix B** indicated that the likely depth to groundwater was between 5 and 10 m bgl.
Groundwater TDS	Between 500– 1,000 mg/L (VVG, 2019).
Groundwater Segment	A1 - A2.
Nearby Groundwater Bores	Fifty (50) registered bores were identified within a 2 km radius of the Site were listed for the following uses: • Thirteen (13) bores listed for observation; • Fifteen (15) bores listed for groundwater investigation; and • Five (5) bores listed for domestic and stock (VVG, 2019).

5.2.2   Surrounding Environmental Audit Reports

A search of completed online environmental audits was conducted on the 6th June 2023. The search identified twenty-two (22) properties located within a 1 km radius of the Site for which an environmental audit had been completed.

A summary of findings for audit reports for the two (2) closest properties to the Site are presented in **Table 3** on the following page.

Table 3: Nearby Completed Audit Reports								
Audit Site Address and (CARMs Ref.)	Completion Date, Outcome.	Distance & Direction from Site	Former Land Use	Soil Contaminants	Groundwater Contaminants	Depth to GW (m bgl)	GW Flow Direction	GW Salinity (TDS mg/L) & Segment
152 Shaftesbury Parade, Thornbury (53969-1)	12 October 2004, site condition is acceptable for all potential land uses.	200 m northeast	Comprised four (4) existing site uses; engineering workshop, small service station, ferrous foundry and non-ferrous foundry.	Chromium, copper, lead, manganese, nickel, selenium and zinc.	Fluoride	5.81	Unknown	7,100 to 8,000 Segment C
24 Leinster Grove, Northcote (69553-1)	29 June 2012, insufficient information to assess risks to workers and residents on soil contamination. Beneficial uses of groundwater for primary contact recreation.	280 m east	Construction on the site commenced during the 1950s, including a commercial laundry in the western portion of the site.	PAHs and TRHs.	Copper, nickel, zinc and manganese, TRH,TPH and PCE	6.7 to 15.2	Southwest	3,501 – 13,000 Segment C

Notes: Total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene, naphthalene (BTEXN), 2-butanone (MEK), 1,1-dichloroethene (1,1-DCE), cis 1,2-dichlorethene (1,2-DCE), trichloroethene (TCE), polycyclic biphenyl (PCB), tetrachloroethene (PCE), total petroleum Hydrocarbons (TPH), benzo(a)pyrene (BaP), total dissolved solids (TDS), electrical conductivity (EC).

5.3 Historical Sources of Potentially Contaminated Land

5.3.1 Aerial Photographs

Aerial photographs dating back to 1945 were reviewed as part of the SCA. Significant observations from the aerial photographs pertaining to changes to site layout and potentially contaminating uses on- and off-site are presented in **Table 4.** Copies of the aerial photographs reviewed are provided in **Appendix C** of this report.

Table 4: Aerial Photographs		
Date	**Observations On-Site**	**Observations Off-Site**
1945	Aerial photograph has poor resolution. The Site appeared to comprise vacant grassland.	Aerial photograph has poor resolution. North: Predominately vacant grassland with one (1) small rectangular structure. East: Low density residential properties. South: Low density residential properties and vacant land. West: Likely vacant grassland
1967	Aerial photograph has poor resolution. The Site appears to be vacant grassland.	Aerial photograph has poor resolution. North: Predominately vacant land with heavier vegetation. Small rectangular structure appears to have been demolished. East: Low density residential properties. South: Low density residential properties and vacant land. West: Northcote Golf Course.
1984	The Site appears to remain vacant grassland. The Site appears to have some tree clearing with a driveway/path leading into the Site.	North: Cleared land with a driveway/path leading into the Site. East: Surrounding land use cut off in aerial photograph. South: Residential properties. West: Northcote Golf Course in operation.
2001	No driveway/path leading into the Site. The remainder of the Site appeared to still relatively unchanged	North: Recreation park (Mayer Park), golf course and low density residential properties. East: Residential properties with commercial buildings to the southeast. South: Low density residential properties and high density residential (retirement village). West: Northcote Public Golf Course.
2011	The Site appeared to remain relatively unchanged.	The surrounding use appeared to remain relatively unchanged.
2023	The Site appeared to remain relatively unchanged.	The surrounding use appeared to remain relatively unchanged.

5.3.2   Sands and McDougall Directories

Prensa undertook an independent review of selected Sands and McDougall Directories (S&MD) available via the VicUnearthed online database as part of the historical review of the Site. Based on the review of available data online, no directories were within the Site boundary. However, information was available pertaining to the surrounding properties.

The information obtained is outlined from the review is outlined in **Table 5.**

<table>
<tr><th colspan="3">Table 5: Sands and McDougall Directories</th></tr>
<tr><th>Dates</th><th>Address</th><th>Historical Occupants land use</th></tr>
<tr><td>1925</td><td>138 Normanby Avenue</td><td>Bruce W.O. – Grocers Retail</td></tr>
<tr><td>1935</td><td>138 Normanby Avenue</td><td>Maginn, E.T. - Grocers Retail</td></tr>
<tr><td>1945</td><td>138 Normanby Avenue</td><td>Chesterfield, H.C. – Grocers Retail</td></tr>
<tr><td>1955</td><td>Leinster Grove
Leinster Grove
184 Normanby Avneue
138 Normanby Avenue</td><td>Scott's Service Station – fuel retailing
Madden, H & Son - Iron Founders and Iron Workers
Harrison, W.C. – Motor Engineers
Chesterfield, H.C. – Grocers Retail</td></tr>
<tr><td>1965</td><td>Leinster Grove
138 Normanby Avenue</td><td>Madden, H & Son - Iron Founders and Iron Workers
King, R.C. – Grocers Retail</td></tr>
<tr><td>1974</td><td>Leinster Grove
Leinster Grove
138 Normanby Avenue</td><td>Mckinlay, A & Son - Iron Founders and Iron Workers
Scott's Service Station – fuel retailing
Aindilis G. – Grocers Retail</td></tr>
</table>

5.4   Current Sources of Potentially Contaminated Land

5.4.1   EPA Database Search

EPA Victoria online databases were reviewed on 26 June 2023, with the relevant details pertaining to current sources of potential contaminated land obtained from the review summarised in **Table 6**.

<table>
<tr><th colspan="2">Table 6: EPA Database Results</th></tr>
<tr><th>Aspect</th><th>Details</th></tr>
<tr><td>EPAV Groundwater Quality Restricted Use Zones (GQRUZ)</td><td>The Site was located within 1km of three (3) designated GQRUZ, but it not located within a GQRUZ.
The closest property for which a GQRUZ was applied is located approximately 450 m south of the Site. The GQRUZ applies for drinking water, irrigation of crops (which includes domestic gardens) and parks, livestock water supply and water used for recreational purposes (e.g. swimming).</td></tr>
<tr><td>EPAV Priority Sites Register (PSR)</td><td>The Site was not listed on or within the vicinity of a property listed on the Priority Sites Register. The PSR extract is provided in **Appendix D.**</td></tr>
<tr><td>EPAV Landfill Register</td><td>The Site was listed within 500 m of a landfill (Ceres Community Environmental Park) which was historically used to quarry bluestone was turned into a landfill for household and construction waste. This property is known by or assessed by EPA Victoria. The status of this landfill is currently listed as 'not operating'.</td></tr>
<tr><td>EPAV Environmental Audits</td><td>There was no reference to an environmental audit having been completed for the Site.</td></tr>
</table>

6   Site Inspection

On 17 March 2023 and 24 April 2023, Prensa conducted a visual inspection of the Site and made the following observations:

- The Site was unoccupied at the time of the inspections, with the surface cover of the Site primarily consisted of grass and vegetation with minor anthropogenic waste in surface soils;
- The Site generally sloped downwards from the south-east towards the northern portion, with the south-east portion being slightly elevated compared to the remainder of the Site. Evidence of historically imported fill was noted due to the undulating surface of the Site;
- Stormwater drainage was observed north west from the Site;
- The Site was surrounded by uses that represented a low potential for contamination (i.e. low density residential housing and walking trail);
- ACM was identified on the surface soil within the south east portion of the Site on 17 March 2023. The sample was analysed in Prensa's internal NATA accredited laboratory and found the material contained asbestos. The Bulk Sample Analysis (BSA) (ref: 112988-001 BSA 17032023) for this sample has been attached to **Appendix I**;
- Council advised Prensa that the northern portion of the Site was historically used as part of the 8th hole of the Northcote golf course, which included a retaining wall along the existing path; and
- Discussions with Council representatives indicate that majority of the imported fill likely originated from the construction and expansion works completed at Northcote Public Golf Course. Some imported fill originated from other construction works completed in the surrounding areas, including dumping of asbestos containing soils and material over the past decades.

Based on these observations and discussions, Prensa identified that historical importation of fill appears to be the primary contaminating activity at the Site. Prensa did not identify potential point sources of significant contamination on-site.

7   Preliminary Conceptual Site Model

A preliminary conceptual site model (CSM) has been developed based on the available desktop information. The CSM identifies potential sources of contaminants of interest, potential transport mechanisms and receptors that could represent potential risk of harm to ecological and/or human health. The objective of the preliminary CSM is to highlight actual or potential exposure pathways that may exist and identify any data gaps that may need to be addressed during the investigation.

For a potential risk of harm to ecological and/or human health to be realised, all of the following elements of an exposure pathway are required:

- Contaminant source;
- Transport mechanism/exposure route between the source and receptor (e.g. dermal contact, ingestion, vapour/groundwater migration, inhalation); and
- Receptor (e.g. resident, site worker, aquatic ecosystem).

If all three (3) elements are present, it is considered that a complete exposure pathway exists. Partial or incomplete exposure pathways may also be present.

7.1   Contaminants of Potential Concern

The available desktop information pertaining to the Site indicated the following:

- The desktop review identified that the area has been developed, with constructions in the immediate surrounding observed since 1945. Anecdotal evidence suggests that fill from the surrounding constructions works were left at the Site;
- Historical aerial photographs indicated that the Site remained vacant and open to the public for decades. Anecdotal evidence suggested the potential for fly tipping and dumping of anthropogenic waste including asbestos at the Site; and
- The service station and an automotive repair business located at 152 Shaftesbury Parade, Thornbury (on the corner of Shaftesbury Parade and Leinster Grove) was up gradient of the Site. However, intrusive assessment of groundwater undertaken as part of the environmental audit for this property indicated that fluoride was the only contaminant of concern within the groundwater, and in the event that this migrated on to the Site would not pose a vapour risk.

Based on the historical land uses of the Site and surrounding properties, information sourced from audit reports of surrounding properties and the site inspection conducted, the preliminary CSM is summarised in **Table 7**.

Table 7: Contaminants of Potential Concern					
Source/ Activity	Period	Media Affected	CoPC	Pathways	Receptors
On-site					
Uncontrolled filling practices from residential and commercial/industrial development works completed to the east and south portion of the Site	Unknown	Soil	Heavy metals, PAH, TRH, BTEXN	Inhalation, ingestion and dermal exposure of contaminated soils	Future residents, ecosystems, public pedestrians, maintenance/ construction workers
Historical fly tipping/dumping practices	Unknown	Soil	Asbestos	Inhalation of airborne asbestos fibres and inhalation of dust during ground-intrusive works	Future/ current residents, public pedestrians, maintenance/ construction workers

8 Adopted Assessment Criteria

This assessment has been undertaken with regard to the guidelines issued by the EPA pursuant to the Act, the Regulations, the ERS, NEPM, and other published guidelines and standards.

8.1 Environmental Values of Land

Part 4 of the ERS outlines the environmental values of land to be protected for different land use settings. The environmental values of land for each land use setting as derived from Table 4.2 of the ERS are provided in **Table 8**. Based on the proposed use of the Site to public recreational/open space with either a children's playground or outdoor gym equipment, the relevant environmental values of land required to be protected are underlined and displayed in bold italics in the **Table 8**.

Table 8: Environmental Values of Land							
Land Use Category / Environmental Value	Parks & Reserves	Agricultural	Sensitive Use High Density	Sensitive Use Other	Recreation/ Open Space	Commercial	Industrial
Land Dependent Ecosystems and Species — Natural Ecosystems	✓						
Modified Ecosystems	✓	✓		✓	✓		
Highly Modified Ecosystems		✓	✓	✓	✓	✓	✓
Human Health	✓	✓	✓	✓	✓	✓	✓
Buildings & Structures	✓	✓	✓	✓	✓	✓	✓
Aesthetics	✓	✓	✓	✓	✓	✓	
Production of Food, Flora & Fibre	✓	✓		✓			

Notes: ✓ Indicates an environmental value to be protected applicable to the land segment of the environment.

Underlined and italicised indicates the environmental value applicable to the land segment relevant to the site.

8.2 Adopted Soil Criteria

A summary of the adopted guidelines for the soil assessment completed have been provided in **Table 9**. Details pertaining to the derivation of these adopted guidelines have been provided in **Appendix E** and **Appendix F**, noting that criteria for a fine grained soil type (silt and clay) were adopted.

Table 9: Hierarchy of Adopted Soil Guidelines	
Environmental Value	**Adopted Guidelines**
Land Dependent Ecosystems and Species (Natural Ecosystems, Modified Ecosystems and Highly Modified Ecosystems)	1. NEPC, NEPM (ASC), Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs). Screening levels were adopted for public open space and sensitive use to investigate the proposed use as public recreational/open space with either a playground or outdoor gym equipment for fine soils. 2. Site specific EILs were calculated using NEPC, *Ecological Investigation Calculation Spreadsheet,* 2010 for a number of contaminants. Aged contamination was adopted and the following physiochemical properties were utilised: **Fill Domain:** • CEC – 54 • pH – 7.7 • Clay – 15 **Natural Domain:** • CEC – 29.1 • pH – 7.6 • Clay - 18 3. CRC Care (2017), *Technical Report No.39,* ESLs for benzo(a)pyrene were adopted as these were considered to have higher reliability.
Human Health	1. NEPC, NEPM (ASC), Health Investigation Levels (HILs) and Health Screening Levels (HSLs). Screening levels were adopted for public open space and sensitive use to investigate the proposed use as public recreational/open space with either a playground or outdoor gym equipment for fine soils. 2. CRC CARE (2011), *Technical Report No. 10*, Health Screening Levels for direct contact. Direct contact HSL A, C and 'Intrusive Maintenance Workers' was adopted to investigate the ongoing land use and use during construction and maintenance. 3. NEPC, NEPM (ASC), Management Limits for petroleum hydrocarbon compounds.
Buildings & Structures	1. Australian Standard (AS) 2159-2009 *Piling – Design and Installation*. 2. NEPC, NEPM (ASC), Management Limits for petroleum hydrocarbon compounds.
Aesthetics	1. Table 4.3 in Part 4 of the ERS, states that the objective for aesthetics is 'Land that is not offensive to the senses of human beings'. Therefore, risks to this environmental value were primarily evaluated with field observations recorded during the works. 2. NEPC, NEPM (ASC), Management Limits for petroleum hydrocarbon compounds.
Production of Food, Flora & Fibre	Soil quality objectives are not currently available for the protection of this environmental value. In their absence, guideline values adopted to assess risks to the *Land Dependent Ecosystems and Species* environmental value have been adopted.

With respect to the waste classification of soil for off-site disposal purposes, reference has been made to the criteria provided in the following documents:

1. EPAV Publication 1828.2, Waste disposal categories – characteristics and thresholds, March 2021; and

2. Victoria Government, Determination S301 Fill Material, June 2021.

The criteria adopted are primarily the upper limits for Fill Material, Category D, Category C and Category B outlined in Publication 1828.2.

8.3 Asbestos

8.3.1 Victorian Occupational Health and Safety Regulations 2017

Part 4.4 of the Victorian Occupational Health and Safety Regulations 2017 provide specific requirements for the identification and management of the asbestos in the workplace. The regulations are enforceable under the Victorian Occupational Health and Safety Act 2004 and the Dangerous Goods Act 1985. In accordance with the current Victorian regulations, the person who manages a workplace must, as far as is reasonably practicable, identify all asbestos under their management or control.

Prohibitions restrict who can perform asbestos removal works and how the work is performed should asbestos be identified.

Prohibitions also restrict the manufacture, supply, storage, transport, sale, use, re-use, installation and replacement of asbestos. The general exclusions, state that the prohibitions "do not apply to soil from which visible asbestos-containing material has been removed, so far as is reasonably practicable, by the person proposing to supply, store, transport, sell, use or re-use the soil".

Under the OHS Act, the following must be considered when determining what is reasonably practicable:

- The likelihood of the hazard or the risk concerned occurring;
- The degree of harm that might result from the hazard or the risk;
- What the person concerned knows, or ought reasonably to know, about the hazard or risk, and ways of eliminating or minimising the risk;
- The availability and suitability of ways to eliminate or minimise the risk; and
- After assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.

8.3.2 Asbestos Health Screening Levels

Asbestos contamination can occur in a range of forms, sizes and degrees of deterioration. The NEPM (ASC) and WADoH 2021 defines asbestos contamination as the following:

- Bonded Asbestos Containing Materials (ACM) – Bonded ACM is classified as any material that contains asbestos in sound condition, although possibly broken or fragmented, within which the asbestos fibres are bound in a matrix (i.e. asbestos cement sheet or vinyl tiles). The identification of ACM is also restricted to material than cannot pass through a 7 mm x 7 mm sieve;
- Fibrous Asbestos (FA) – FA encompasses friable asbestos material, such as severely weathered ACM and asbestos in the form of loose fibrous material, such as insulation products. Friable asbestos is defined as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure; and
- Asbestos Fines (AF) – AF include free fibres of asbestos, small fibre bundles and also ACM fragments that pass through a 7 mm x 7 mm sieve. Both FA and AF have the potential to generate or be associated with free asbestos fibres, which can pose a considerable inhalation risk if made airborne.

Distinction is made between these different forms in the environment due to the disturbance potential and level of risk that the material may pose. Health screening levels (HSLs) are recommended for ACM and AF/FA, in four (4) generic land use settings, including residential with gardens/accessible soils (which also includes primary schools), residential with minimal opportunities for soil access, public open space and commercial/industrial land uses.

Based on the proposed use of the Site as public recreational/open space with either a children's playground or outdoor gym equipment properties, HSL 'A' and HSL'C' has been adopted in **Table 10**.

Table 10: NEPM 2013 Guidelines - Asbestos Health Screening Levels		
Form of asbestos	Land use setting	HSL (%w/w)
Bonded ACM	Low density residential/ Sensitive land use (other)	0.01
	Public open space / recreation	0.02
FA and AF (friable asbestos)	All land use settings	0.001
All forms of asbestos	All land use settings	No visible asbestos in the surface soil

The NEPM (ASC) also suggests that a soil FA/AF content of greater than 0.001% w/w may potentially give rise to an airborne asbestos concentration of greater than 0.01 fibres per millilitre of air (f/mL). The potential for this to occur would depend on factors such as environmental conditions, site activities and the volume of soil disturbed.

It should be noted that there is no practical sampling and laboratory method to quantify free fibre asbestos to this level. As such, if free fibre asbestos is observed to be present in soil samples, then the focus should be to ensure the asbestos is appropriately managed. NEPM (ASC) makes reference to WA DoH 2021 which provides further details on the derivation of appropriate sampling programs and the specified HSLs.

8.4 Contaminated Land Triggers

8.4.1 Duty to Manage

Section 35 of the *Environment Protection Act 2017* provides the following definition of 'contaminated land':

(1) Subject to subsection (2), land is **contaminated** if waste, a chemical substance or a prescribed substance is present on or under the surface of the land, and the waste, chemical substance or prescribed substance –

    a) *is present in a concentration above the background level; and*

    b) *creates a risk of harm to human health or the environment.*

(2) Land is not contaminated –

    a) *merely because waste, a chemical substance or a prescribed substance is present in a concentration above the background level in water that is on or above the surface of the land; or*

    b) *if any prescribed circumstances apply to the land.*

In addition to the adoption of soil criteria listed in **Section 8.2,** based on the proposed use of the Site, the soil contaminant concentrations were compared against the ecological investigation/screening levels to reflect the most sensitive potential land use of the Site (i.e. urban residential/open space) and the most sensitive human health investigation/screening levels to determine whether the soil contamination present meets the above definition of 'contaminated land'.

Under Section 39 of the Environment Protection Act 2017, the 'Duty to Manage' contamination applies to a person in management or control of a site that meets the definition of 'contaminated land' above, and where there are reasonably practicable actions that can be taken to minimise the risks of harm associated with the contamination.

8.4.2 Notification Triggers

The results of the assessment were also compared with the EPA notification triggers specified in Regulations 8-12 of the *Environment Protection Regulations 2021* (and summarised in Appendix A of EPA Publication 2008, *Notifiable contamination guideline – Duty to notify of contaminated land*) to determine whether the 'Duty to Notify' under Section 40 of the *Environment Protection Act 2017* applied to the Site.

9 Soil Assessment

9.1 Sampling Strategy

9.1.1 Test Pit Gridded Sampling

Prensa established sixteen (16) gridded test pits across the Site using a shovel to a maximum depth of 0.5 m bgl. The number of test pits was consistent with the sampling density outlined in Table 4 of WA DoH 2021 for sites where the presence of asbestos is considered likely.

The test pit sampling density is capable of detecting a potential contamination hotspot with a diameter of approximately 14.75m with 95% confidence and allows for site-wide investigation of potential non-volatile and semi-volatile compounds.

9.1.2 Borehole Gridded Sampling

Eight (8) of the gridded test pit locations were advanced further to 1.0 m bgl using a hand auger to characterise the chemical contamination at the Site. The number of borehole locations for this SCA was consistent with the minimum sampling density recommended in AS4482.1-2005 for a site of this size (approximately 2,000 m^2) and was capable of detecting a hotspot diameter of 20 m with 95% confidence. It is considered that this sampling density is sufficient to achieve the stated project objectives at the Site and characterise soil contaminants from unknown sources.

Sampling locations were established via the following methodologies described in **Table 11** below. Further details are provided in the soil logs provided as **Appendix G**.

Table 11: Summary of Sampling Methodology	
Sampling Methodology	**Description**
Test Pits	Sixteen (16) test pits (TP01-TP16) were established using a shovel to a depth of approximately 0.5 m bgl.
	Soil samples were generally collected from near surface (0.1-0.2 m) and 0.5 m depths from the shovel, taking care not to sample soils directly adhered to the shovel base.
Hand Auger	In eight (8) test pit locations (TP01, TP03, TP05, TP07, TP09, TP11, TP13 and TP15), a decontaminated hand auger was used to establish boreholes to depths ranging from 0.8 m to 1.0 m bgl.
	Soil samples were generally collected from near surface (0.1-0.2 m), 0.5 m and 1.0 m depths from these sampling locations. Soil samples were collected from the hand auger, taking care not to sample soils directly adhered to the auger.

9.2 Soil Screening

Soil samples were screened in the field using a photo-ionisation detector (PID) to provide an indication of the potential of volatile contamination within the samples. The PID was calibrated each day with isobutylene of a known concentration (95 ppm). Calibration certificates have been provided as **Appendix H.**

9.3   Asbestos in Soils

Given that ACM was previously identified on the surface near the eastern boundary of the Site during the inspection undertaken in March 2023, further assessment was warranted to investigate whether this material was present in fill at the Site.

9.3.1   Test Pit Gridded Sampling Schedule

In accordance with the WA DoH 2021 guidelines, areas where anthropogenic waste was observed is considered 'likely' to contain asbestos. Prensa established sixteen (16) test pits (TP01-TP16), with the aid of a shovel to a maximum depth of 0.5 m bgl or until natural soils were adequately penetrated.

The number of locations established is in accordance with the approach specified in the WA DoH 2021 and NEPM (ASC). This sampling density is capable of detecting potential contamination hot spot with a diameter of approximately 14.75 m with 95% confidence.

9.3.2   Gravimetric Assessment of Asbestos

Based on Prensa's current understanding regarding the nature of the proposed works, some fill soil at the Site will likely remain at the Site (i.e. is below sub-grade). To evaluate the risks to human health posed by asbestos to future land uses in accordance with the NEPM (ASC) Prensa completed gravimetric assessment of asbestos using on-site sieving of fill soils. Prensa notes that gravimetric assessment of this nature is not a requirement to inform management for disposal or to determine whether prohibitions on re-use of asbestos apply to the soil. Rather this component of the works only informs the assessment of risk where asbestos contaminated soils are proposed to be left on-site in-situ.

A specialised 7 mm x 7 mm sieve was used to hand sieve 10 L of soil from each relevant sampling location. If suspected ACM was identified from within the sieve, it was collected within a bag and assigned a unique sample identification code.

Representative samples were submitted to Prensa's NATA accredited laboratory to calculate whether suspected ACM fragments contained asbestos. The confirmed ACM was then weighed to calculate the percentage asbestos in soil concentration using the weight for weight equation defined in NEPM (ASC):

$$\% \text{ Soil Asbestos} = \frac{\% \text{ Asbestos Content in Building Material x mass of Building Material (kg)}}{\text{Soil Volume (L) x Soil Density (kg/L)}}$$

For the purposes of the calculations, the following values were adopted:

- Bonded ACM: Percentage asbestos content of 15% and a soil density of 1.8 kg/L.

9.3.3   Asbestos Air Monitoring

Airborne asbestos fibre monitoring was conducted to measure airborne concentrations during the assessment works. All results across the two (2) assessment days were found to be below the laboratory detection limit of 0.01 fibres/mL and as such, no action was required under the OHS legislation. The air monitoring reports have been attached to **Appendix J.**

9.4 Soil Sample Collection

Disposable nitrile gloves were worn during sample collection, which were replaced after the collection of each sample and between sampling locations to avoid cross-contamination. Collected soil samples were placed in 250 mL glass jars with Teflon-lined lids that were prepared and supplied by a NATA accredited laboratory. Collected samples were stored in chilled ice chests and transported to the laboratory within specified holding times, along with chain of custody documentation. Upon completion of soil sampling, sampling locations were reinstated with soil cuttings and the surface finished with rapid set cement (where required).

9.5 Soil Analytical Schedule

The analytical schedule adopted for the soil assessment works has been summarised in **Table 12**.

Table 12: Soil Analytical Schedule				
Locations	**Domain**	**Samples Collected**	**Samples Analysed**	**Analytes**
Sixteen (16) Gridded Locations	Fill	34	2	1828.2 Screen[1] with metals (M17)[2], physiochemical properties[3], sulphate, chloride
			9	Metals (M17), PAH, TRH, BTEXN[4]
	Natural	3	1	1828.2 Screen with metals (M17), physiochemical properties, sulphate, chloride
			2	Metals (M17), PAH, TRH, BTEXN
Quality Control Samples[6]	Duplicate and Split	4	2	PAH, Metals (M8)[5]
	Rinsate	3	2	PAH, Metals (M8)
	Trip blank*	3	-	-
	Field blank	3	-	-

(1) The 1828.2 Soil Screen includes the following:
- Total Recoverable Hydrocarbons (TRH)
- Polycyclic Aromatic Hydrocarbons (PAH)
- Phenols
- Organochlorine Pesticides (OCP)
- Polychlorinated Biphenyls (PCB)
- Benzene, Toluene, Ethylbenzene and Xylene (BTEX)
- Volatile Organic Compounds (VOC)
- Metals including: As, Cd, Cr, Cr6+, Cu, Pb, Hg, Mo, Ni, Ag, Se, Sn, Zn
- Cyanide, Total fluoride & pH

(2) Metals (M17) includes: As, Cd, Cr, Cr^{6+}, Cu, Pb, Hg, Mo, Ni, Ag, Se, Sn, Zn
(3) Physiochemical properties includes: %Fe, Cation Exchange Capacity, pH(CaCl2), Total Organic Carbon, % Clay Content
(4) BTEXN: benzene, toluene, ethylbenzene, xylene, and naphthalene
(5) Metals (M8) includes: As, Cd, Cr, Cu, Ni, Pb, Zn, Hg
(6) One (1) blind replicate and one (1) split sample was collected for every twenty (20) primary samples, one (1) rinsate was collected per day per reusable sampling equipment, and (1) trip blank was collected per chilled ice chest. One (1) field blank was collected per day of sampling and put on hold with its analysis subject to the atmospheric conditions onsite during sampling and the result of other field samples. *Prensa was confident in the Assessment's analytical techniques, equipment and methods used, reducing the need to analyse the trip blank sample.

10 Soil Results

10.1 Field Observations

The subsurface lithology was noted to be generally consistent across the Site during the soil assessment. A generalised subsurface profile has been summarised in **Table 13.**

Table 13: Generalised Subsurface Profile		
Approximate Depth (m bgl)	**Domain**	**Soil Description**
0.0 – 0.7	Fill	*Sandy silty CLAY* Brown to dark brown, soft to firm, dry to slightly moist, zero to medium plasticity with minor rootlets, organic decomposers, brown and orange mottle, glass, plastic, ceramics, tile, plasterboard and brick fragments, gravels, large sub-angular rocks (up to 20 cm) and minor potential gas works waste (in test pits TP09, TP10 and TP12 only).
0.7 – 1.0	Natural	*CLAY* Grey to dark grey, very soft to firm, slightly moist to moist, high plasticity with brown and orange mottle.

A number of other key field observations noted during the soil assessment works are summarised in **Table 14.**

Table 14: Field Observations	
Surface Cover	Grass cover.
Staining	No staining observed.
Odours	Minor hydrocarbon odour in one (1) test pit location (TP02).
PID Readings	No significant PID readings (maximum 0.3 ppm at TP09).
Waste/Rubble	Minor quantities of waste materials were observed in all test pits. However, field observations indicated that test pit TP07 had significantly more waste then the remaining sampling locations and was the only test pit location where fibre cement sheet debris (which was confirmed to contain asbestos) was observed. The other waste materials included brick, tile, plastic, ceramic, plasterboard and tin fragments, gravels, and gas works waste (the latter in in test pits TP09, TP10 and TP12 only).

Further details are provided in the test pit logs provided in **Appendix G** of this report.

10.2 Asbestos Occurrence

During the field works for this assessment, bonded ACM was identified in one (1) location at the Site (TP07). No visible evidence of ACM was observed in the remaining test pit locations established at the Site. A summary of the ACM identified in soils at the Site is provided in **Table 15** with locations illustrated in **Figure 1** attached to the **'Figures'** section of this report.

Table 15: Summary of Identified Non-Friable ACM in Soil		
Location I.D. – Figure 1	Type of ACM	Approximate Depth
TP07	Non-friable: Fibre cement sheet	0.3 m bgl

One (1) representative sample of suspected ACM material was submitted for laboratory analysis at Prensa's NATA accredited laboratory. The sample was confirmed to contain asbestos (Chrysotile (white asbestos). Based on the analytical results, the other non-friable fibre cement sheet fragments identified in test pit TP07 were assumed to contain asbestos.

The BSA reports have been provided in **Appendix I** of this report.

10.2.1 Percentage of Asbestos in Soil

Soils were sieved in each of the test pits across the Site. The percentage of asbestos weight for weight results have been compared against the adopted criteria and summarised in **Table 16.**

Table 16: Summary of Asbestos in Soil Results							
Form of asbestos	Location	Sieved soil (kg)	Weight of ACM (kg)	Asbestos content (kg)	Asbestos in Soil Conc. (%w/w) [1]	Exceeds NEPM (ASC) HSL A (0.01 %w/w)	Exceeds NEPM (ASC) HSL C (0.02 %w/w)
Bonded ACM	TP07	18	0.0382	0.00573	0.031833333	Yes	Yes

[1] Exceedances of NEPM (ASC) HSL have been highlighted in bold.

10.2.2 Asbestos Fines

Based on field observations and sieving assessment, no friable asbestos was identified. As such analysis of the collected soil samples for asbestos fines analysis was not required.

10.3 Analytical Results

10.3.1 Environmental Value Analysis

The contaminant concentrations reported have been summarised against the adopted environmental value investigation/screening levels in **Table A1** in the '**Tables**' section of this report. In summary, one (1) sample exceeded lead HIL A for residential.

10.3.2 Off-Site Disposal Waste Classification

The contaminant concentrations reported have been summarised against the adopted criteria in the **Table A2** in the '**Tables**' section of this report.

The summary of exceedances has been provided in **Table 17.**

Table 17: Summary of Soil Analytical Result Exceedances (Waste Classification)										
Contaminant	Concentration Range (mg/kg)	No. samples analysed	Number of samples > upper limits*				ASLP Required (Y/N)	Number of samples > leached upper limits		
			FM	Cat D	Cat C	Cat B		Cat D	Cat C	Cat B
Lead	8.3 - 380	14	**1 (300**)	0	0	0	N	0	0	0
Mercury	<0.1 – 1.9	14	**2 (1)**	0	0	0	N	0	0	0
Zinc	<5 – 730	14	**1 (200)**	0	0	0	N	0	0	0
Fluoride	<100 – 1,500	10	**1 (450)**	0	0	0	N	0	0	0
BaP	<0.5 – 1.8	14	**1 (1)**	0	0	0	Y	0	0	0

Adopted investigation/screening have been highlighted in bold

10.3.3 Statistical Appraisal for Exceedances

Statistical analysis was undertaken on the soil analytical results collated as part of this assessment which were considered to represent a statistically relevant dataset.

In accordance with the NEPM (ASC), soil concentrations for the Site are considered to be statistically below the nominated environmental value criteria if the following are met:

- The 95% upper confidence limit (UCL) of the mean contaminant concentrations and the arithmetic mean of a contaminant are less than the relevant investigation/screening level;
- The standard deviation of the results are less than 50% of the relevant investigation or screening level; and
- No single value exceeds 250% of the relevant investigation or screening level.

For waste classification concentrations are considered to be statistically below the adopted criteria if the 95% UCL of the mean contaminant concentrations is less than the adopted criteria.

A summary of the results of the statistical analysis preformed using ProUCL, a statistical program approved by EPA Victoria, is provided in **Table 18** and **Table 19**. Detailed outputs of the statistical analysis are provided in the '**Tables**' section of this report.

Table 18: Statistical Analysis Results (Waste Classification)						
Contaminant	Number of Samples	Results (mg/kg)				Exceedance of adopted criteria (Y/N)
		Maximum Concentration	95% UCL	Mean	SD	
Lead	11	380	112.4	52.91	108.9	N
Mercury	11	1.9	0.829	0.75	0.794	N
Zinc	11	730	318.9	110.4	207.5	N
BaP	11	1.8	0.973	1.267	0.462	N

Table 19: Statistical Analysis Results (Reuse Assessment)						
Contaminant	Number of Samples	Results (mg/kg)				Exceedance of adopted criteria (Y/N)
		Maximum Concentration	95% UCL	Mean	SD	
Lead	11	380	112.4	52.91	108.9	N

10.3.4 Leachable Concentrations

The ASLP analytical results reported in Laboratory Report **997388** indicated that the leachable contaminant concentrations were less than the Category D leachable concentration upper limits. A summary of the results has been provided in **Table A3** attached to this report.

11 Quality Assurance & Quality Control

Prensa reviewed compliance with the procedures and acceptability limits specified in **Appendix K** of this report. The findings of the quality control and assurance review are presented below.

11.1 Quality Control Sampling and Analysis

11.1.1 Blind Replicate and Split Sample RPDs

Blind replicate and split samples were collected and analysed in accordance with the required frequency acceptability limits. A large portion of the contaminants analysed reported concentrations less than the laboratory LOR, whereby relative percentage differences (RPDs) could not be calculated. RPDs were calculated for the quality control samples collected and analysed, where concentrations were reported greater than the laboratory LOR. Concentrations were noted to be within the acceptability limits with the exception of those analytes listed in **Table 20.** Detailed results are provided in **Table A4** provided in the '**Tables**' section of this report.

Table 20: Blind Replicate and Split Sample RPD Results			
Quality Control Sample	**Type**	**Primary Sample**	**RPD Exceedances/Comments**
115175M_QC01_24MAY23	Blind Replicate	115175M_TP05_0.5	No exceedances
115175M_QC02_24MAY23	Split Sample	115175M_TP05_0.5	Nickel reported an RPD of 88% Chromium (III + VI) reported an RPD 100%

The variability in the contaminant concentrations reported is likely due to the heterogeneity of the samples.

11.1.2 Rinsate, Field Blank and Trip Blanks

Rinsate, field blank and trip blank samples were collected and analysed during the investigation works at a frequency consistent with the acceptability limits. A summary of the blank sampling and analysis is provided in **Table 21**Table 21. The analysis of blank samples was reported to be within the acceptability limits. Detailed results are provided in **Table A5** provided in the '**Tables**' section of this report.

Table 21: Blank Sample Results				
Type	**Blank Sample ID**	**Date**	**Analysis**	**Results**
Rinsate	115175M_R01_24MAY23	24/05/23	PAH and Metals (M8)	Concentrations less than LOR.
	115175M_R02_25MAY23	25/05/23		Concentrations less than LOR.
	115175M_R03_26MAY23	26/05/23	NA	NA
Field Blank	115175M_FB01_24MAY23	24/05/23	NA	NA
	115175M_FB02_25MAY23	25/05/23	NA	NA
	115175M_FB03_26MAY23	26/05/23	NA	NA
Trip Blank	115175M_FB01_24MAY23	24/05/23	NA	NA
	115175M_FB02_25MAY23	25/05/23	NA	NA
	115175M_FB03_26MAY23	26/05/23	NA	NA

LOR: Limit of Reporting.

NA: Not analysed

11.2 Laboratory Quality Assurance/Quality Control

Review of the reports provided from the primary (Eurofins) and secondary (Envirolab) laboratories indicated that NATA endorsed methods were used and the frequency and findings of laboratory quality control sampling were generally within the acceptability limits with the exception of those specified in **Table 22.**

Table 22: Laboratory Quality Control Sample Results	
Type	**Non-Conformance**
Duplicates	The following non-conformances were identified:
	Eurofins report 993629-S: Zinc
	Eurofins report 993591-S: Chloride and Total Organic Carbon
	Eurofins report 997388-S: Arsenic and Boron
	However, RPD's reported passed Eurofins Environmental Testing's QC – Acceptable Criteria as defined in the Internal Quality Control Review page of the report.
Spike	Passed internal QC processes.
Method Blanks	Passed internal QC processes.
Laboratory Control Samples	Passed internal QC processes.
Certified Reference Material	Passed internal QC processes.
Surrogates	Passed internal QC processes.

11.3 Sample Preservation, Handling and Holding Times

Review of sample receipt documentation provided by the laboratory indicated that:

- COC was completed correctly;
- Attempt to chill was evident;
- Appropriately preserved sample containers were used;
- All samples were received in good condition; and
- Sample containers for volatile analysis were received with zero headspace.

An evaluation of the laboratory sample extraction and analysis dates was also undertaken by Prensa. The review of the NATA laboratory reports indicated samples were extracted and analysed with recommended holding times adopted by the laboratory.

11.4 Data Validation

Based on the above, an assessment of the precision and accuracy of the analytical data has been made.

While some quality control samples were reported outside the specified acceptability limits, these were not considered to significantly impact upon the representativeness of the data. The majority of the quality control results indicate that precision and accuracy of the data was within acceptability limits and the results from blind replicate and split sample analysis are comparable.

The results are therefore considered representative of analyte concentrations in the media assessed and are suitable for evaluating its contamination status.

12 Discussion

12.1 Asbestos In Soil

During the assessment, Prensa identified several fragments of non-friable ACM in the form of fibre cement sheet at one (1) sampling location (TP07). However, based on observations made during the fieldworks for the assessment, which did not identify visible evidence of asbestos-containing materials in the other sampling locations, it is considered unlikely that the asbestos contamination is widespread across the Site. Field observations also indicated that soils within the vicinity of TP07 contained higher quantities of anthropogenic and building waste relative to the remainder of the Site. Given that anthropogenic and building waste often correlate with the presence/absence of ACM, the extent of ACM was defined based on the location of fill soils with higher waste. The extent of ACM impacted soils is illustrated in **Figure 2** in the '**Figures**' section of this report. This area is hereby referred to as the 'Nominated Area.'

The gravimetric assessment identified asbestos concentrations above the NEPM (ASC) HSLs in TP07 located within the centre of the Nominated Area. Based on the proposed use of the Site as public recreation, open space with either a children's playground or outdoor gym equipment, if fill soil is to remain undisturbed, asbestos should be managed through the installation of a barrier at the surface and an implementation of a soil management plan (SMP). The SMP should be developed for the Site and must be adhered to by the by managers of the Site, as well as personnel undertaking intrusive works at the Site to appropriately manage asbestos contamination.

Council must also obtain and provide a copy of the asbestos register to contractors/maintenance workers on every occasion that work may be done which could possibly disturb ACM and/or hazardous materials.

Due to the presence of asbestos within fill soils at the Nominated Area, the *Occupational Health Safety Regulations 2017* must be considered given the likelihood that soil will require excavation/disturbance to facilitate future development and maintenance works (i.e. become a workplace). This is required irrespective of the quantity of asbestos in soils.

If fill soil within the Nominated Area is to be disturbed it must be excavated under licenced asbestos removal conditions and either disposed of as asbestos or abated such that visible asbestos containing material is removed to the extent practicable, with a clearance inspection undertaken following the completion of asbestos removal work by a suitably qualified hygienist.

The remainder of the fill at the Site is considered unlikely to be asbestos contaminated, based on the findings of the test pitting for this SCA. Therefore the development and implementation of an unexpected finds procedure, which details steps to be followed in the event that suspected asbestos is identified is considered applicable to the part of the Site located outside of the Nominated Area.

12.2 Risks to Environmental Values of Land

Potential risks to environmental values of land are summarised in **Table 23.**

Table 23: Risks to Environmental Values of Land	
Environmental Value	**Comments**
Land dependent ecosystems and species – highly modified ecosystems	The concentrations of contaminants were reported as less than the adopted EILs and ESLs for both residential/public open space and sensitive land uses.
Human Health	The concentrations of contaminants were reported as less than the adopted HILs and HSLs for both residential/public open space and sensitive land uses. It is noted that one sample reported a lead concentration (380 mg/kg) that was slightly greater than the NEPM HIL A (300 mg/kg). In addition, the quantity of ACM identified at the Site exceeded the relevant criteria for its proposed use as either an outdoor public gym or a children's playground. As such, inadequate management of ACM poses a risk to human health which impacts on the Site's environmental value if not managed accordingly.
Buildings and Structures	The sulfate and chloride concentrations and pH reported within soil would classify the soil as 'non aggressive' to buildings and structures in accordance with AS 2159-2009. Nevertheless, it is recommended that Council consult a structural engineer.
Aesthetics	Anthropogenic waste (i.e., plastic and brick fragments) was identified within fill soil across the Site. As such, it was considered that the potential exists for soil to impact on the aesthetics environmental value, in the event that the soil is reused without appropriate management controls being implemented. This is particularly important where impacted soil is/may be exposed at the ground surface. If the fill is to be reused at the Site, consideration should be given to the aesthetic environmental value. This could include removing visible waste from surface soil and placing clean fill in areas of where direct soil contact may occur (i.e. the surface).

12.3 Management of Contaminated Land

The soil sampling assessment completed identified contaminant concentrations of one (1) sample that exceeded the human health investigation and screening levels adopted if the Site contains a children's playground as part of the proposed development. To manage the risks associated with the contamination, a Soil Management Plan (SMP) should be completed for the Site. The SMP should outline controls to manage risks during construction and to protect future users of the Site. This includes potential future exposure to contamination of soil and asbestos.

Management controls that may be considered include protecting future users of the Site by installing barriers to prevent uncontrolled access to the underlying contaminated soil (e.g. hardstand, geotextile covered in clean fill etc.). These management controls should be supported by a risk assessment that considers the types of contaminants, their characteristics in the environment, potential exposure pathways, and the anticipated behaviour of human receptors.

Alternatively, this material can be excavated and removed from the Site which would eliminate the hazard posed by contamination. This would represent a significant cost and does not align with the waste hierarchy.

12.3.1 EPA Duty to Manage

The Site was considered to be 'contaminated land' as defined in the *Environment Protection Regulations 2021* as a number of analytes were considered to report concentrations:

- Greater than background concentrations; and
- Greater than HIL A adopted for residential spaces, which are sensitive investigation and screening levels relevant to the Site given its urban setting.

As such, those in management or control of the Site have the duty to manage contaminated land. This involves assessment and management of the contamination proportionate to the risk. As evaluation of the assessment and recommendations for management have been provided in **Table 23**.

	Table 23: Summary of Works with Reference to Section 39 of the Act	
Section of the Act	Requirement outlined in the Act	Tasks Complete to Date
39(2)(a)	Identification of any contamination that the person knows or ought reasonably to know of	**Completed**: Council has identified the potential for land to be contaminated.
39(2)(b)	Investigation and assessment of the contamination	**Completed**: This Assessment report details the findings and interpretation of the assessment completed to date. It was considered that based on the ongoing land use of the Site, that these assessments have evaluated the risk.
39(2)(c)	Provision and maintenance of reasonably practicable measures to minimise risks of harm to human health and the environment from the contamination, including undertaking clean-up activities where reasonably practicable.	**Completed:** The Assessment report is considered adequate to inform risks of harm to human health and the environment based on the proposed redevelopment works and ongoing use as a public recreational space. The results suggest risks to human health and the environment are likely low and acceptable so long as an SMP is developed to manage contaminated soil at the Site following construction. Should the Site undergo development to a more sensitive land use in the future, the findings in this report should be re-evaluated in accordance with NEPM ASC (2013).
39(2)(d)	Provision of adequate information to any person that the person in management or control of the contaminated land reasonably believes may be affected by the contamination , including— 1.1 Sufficient information to identify the contamination; and 2.1 The results of investigation and assessment referred to in paragraph (b); and 3.1 The risks of harm to human health and the environment from the contamination.	**Ongoing:** Based on the results in the Assessment and the proposed redevelopment works and ongoing use as a public recreational space, Prensa believes that Council must disclose to anyone coming into management or control of the Site.

Table 23: Summary of Works with Reference to Section 39 of the Act		
Section of the Act	**Requirement outlined in the Act**	**Tasks Complete to Date**
39(2)(e)	Provision of adequate information to enable any person who is reasonably expected to become a person in management or control of the contaminated land to comply with the duty to manage contaminated land	**Ongoing:** The findings of the Assessment should be made available to those who come into management control of the Site, including future landowner/occupiers.

Based on Prensa's comprehensive analysis conducted on the four (4) surface samples, it was deemed improbable that the surface soil presents a risk to human health or the environment. It is acknowledged that some uncertainty remains.

12.3.2 Duty to Notify

Based on Prensa's interpretation of the regulations, it is considered that notification to EPA Victoria under Section 40 of the *Environmental Protection Act 2017* is not required for the Site at this time. Prensa notes that the Duty to Notify is based on the current or proposed use and is informed by the outcomes of the Duty to Manage.

12.4 Off-site Soil Disposal Classification

12.4.1.1 Fill soil

Based on the total and leachable concentrations reported in fill soil at the Site, the waste disposal category of in-situ soil (excluding the Nominated Area) is **Category D** which is **Reportable Priority Waste (Waste Code N120)** in accordance with the EP Regulations.

Category D contaminated soil must be transported in an EPA permitted vehicle, tracked via the online waste tracker system and disposed of at a landfill facility licenced by EPA to accept this material.

The waste disposal category of in-situ soil within the Nominated Area is **Category D with Asbestos** which is **Reportable Priority Waste (Waste Code N120)** in accordance with the EP Regulations.

Category D with Asbestos must be excavated by a licenced asbestos removalist, transported in an EPA permitted vehicle, tracked via the online waste tracker system and disposed of at a landfill facility licenced by EPA to accept this material.

Alternatively, ACM can be removed as far as reasonably practicable from the soil by a licenced asbestos removalist and cleared by a qualified hygienist. Following receipt of a clearance for the soil, it may be disposed off-site as Category D Reportable Priority Waste.

12.4.2 Natural soil

Up to 75 m³ of natural soils has been classified as **Category D** which is **Reportable Priority Waste (Waste Code N120)** in accordance with the EP Regulations.

Category D contaminated soil must be transported in an EPA permitted vehicle, tracked via the online waste tracker system and disposed of at a landfill facility licenced by EPA to accept this material.

13 Conclusions

Council engaged Prensa to undertake this SCA to assess the contamination status of the soil at the Site, estimate the extent of asbestos contaminations within in-situ soil, provide recommendations to manage contamination and classify the soil for offsite disposal. To do so, Prensa undertook a desktop review, incorporating an evaluation of the environmental site setting and site history, a site inspection and intrusive assessment. The key findings included:

- The findings of the desktop review demonstrated that the Site has historically remained as vacant grassland;
- The reported contaminant concentrations were not considered to pose an unacceptable risk for both human health and the environment;
- Fill was encountered to a maximum depth of 1.0 m bgl, but varied across the Site;
- The classification of fill soil assessed at the Site was Category D contaminated soil, with the fill in the Nominated Area classified as Category D with asbestos, both of which are Reportable Priority Waste (Waste Code N120);
- The classification of up to 75 m^3 natural soil is Category D contaminated soil, which is Reportable Priority Waste (Waste Code N120);
- Asbestos was identified at one (1) location which exceeded the adopted HSLs. However, given that the remainder of the Site did not identify ACM, the Site is considered not considered grossly contaminated with asbestos. A licenced removalist and hygienist must be engaged when maintenance or intrusive works are being completed in the Nominated Area during construction works;
- Anthropogenic waste observed in the fill soil may pose an aesthetic issue if reused and not managed;
- Evidence of contamination was not identified in the natural soil. Concentrations of contaminants in the natural soil were reported as less than the adopted investigation and screening levels. An indicative soil classification of natural soil would likely classify as Category D contaminated soil with further sampling required to provide a classification report will require an EPA designation given the fluoride exceedance; and
- Based on the reported soil contaminant concentrations the 'Duty to Manage' contamination under Section 39 of the *Environmental Protection Act 2017* applies to the Site. EPA Publication 1834 should be referred to during the construction process for a general approach to managing potential environmental and human risks.

14 Recommendations

Based on the findings from the SCA, the following recommendations have been made:

- A SMP should be developed for the Site to strategically manage soil contamination and asbestos. The SMP should include the identification and characterisation of soil present, a comprehensive risk assessment, remediation strategies and detail an unexpected finds procedure for areas of the Site where asbestos was not identified; and
- Soil at the Site must not be re-used unless visible anthropogenic waste and asbestos has been removed so far as reasonably practicable. Reused soil must be retained below the surface with a barrier (i.e. geofabric) and clean imported fill soil placed on top.

15 References

ASRIS, 2014. *Australian Soil Resource Information System.* [Online]
Available at: http://www.asris.csiro.au/mapping/viewer.htm

DEECA (VicUnearthed), 2023. *Department of Energy Environment and Climate Action (DEECA).* [Online]
Available at: https://www.environment.vic.gov.au/sustainability/victoria-unearthed

VVG, 2019. *Visualising Victoria's Groundwater.* [Online]
Available at: https://www.vvg.org.au/

Abbreviations

Abbreviation	Definition
ACM	Asbestos Containing Material
AHD	Australian Height Datum
AMG	Australian Map Grid
ANZECC	Australian & New Zealand Environment & Conservation Council
BaP	Benzo(a)pyrene
BGL	Below Ground Level
DELWP	Department of Environment, Land, Water and Planning
DEPI	Department of Environment and Primary Industries
SCA	Detailed Site Investigation
EIL	Ecological Investigation Level
EPA	Environment Protection Authority
ERS	Environment Reference Standard
ESL	Ecological Screening Level
HIL	Health Investigation Level
HSL	Health Screening Level
LDES	Land Dependent Ecosystems and Species
m	Metres

m²	Square Metres (area)
MGA	Map Grid Australia
mg/L	Milligrams per Litre
MMBW	Melbourne Metropolitan Board of Works
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
OCP	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PPM	Parts Per Million
PSI	Preliminary Site Investigation
QA	Quality Assurance
QC	Quality Control
SVOC	Semi-volatile Organic Compounds
SWL	Standing Water Level
TDS	Total Dissolved Solids
TRH	Total Recoverable Hydrocarbons
VOC	Volatile Organic Compounds
VVG	Visualising Victoria's Groundwater

Figures

Legend:

Testpit Locations

Testpit with Positive ACM

Site Boundary

0   10   20 m

Index Location Map:

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Sampling Locations

Client No: D0061   Job No: 115175M

Client: Darebin City Council

Project: Soil Contamination and Asbestos in Soil Assessments, Northcote Public Golf Course

Address: 146 Normanby Ave, Thornbury VIC 3071

Legend:

■ Under Asbestos Conditions

■ Unexpected Finds Procedure

▬ Asbestos Conditions Boundary

▭ Site Boundary

Map: Bing Satellite

0   10   20 m
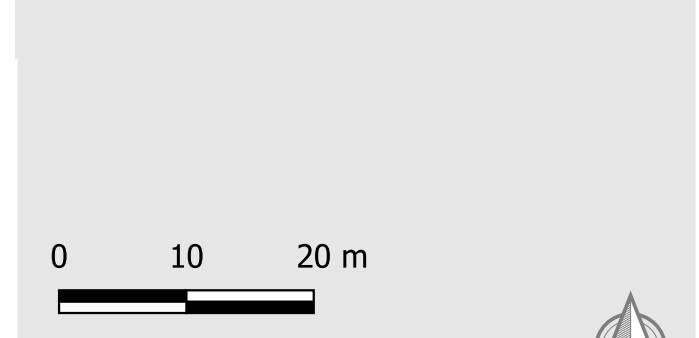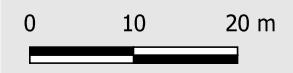
Index Location Map:

File Name:
115175M Figure 1 Testpit Locations

Version: 1

Drawn By:	Checked By:	Date:	Figure Number:
KRG	SSB	23/06/2023	1

Tables

115175M: SCA AIS Northcote Public Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

Table A1: Summary of Analytical Results (Environmental Values)

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Criteria (units: mg/kg)

Category	Criterion	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(a)pyrene TEQ (LOR)	PAHs (Sum of total)
	EQL	2	10	2	10	0.4	1	5	5	5	20	5	5	0.1	5	5	2	2	10	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Land Dependent Ecosystems and Species	NEPM (2013) EIL for Urban Residential/Public Open Space (Fill)	100						770		240			1100			890				2400														170						
	NEPM (2013) EIL for Urban Residential/Public Open Space (Natural)	100						820		330			1100			590				1500														170						
	NEPM (2013) ESL for Urban Residential/Public Open Space, Fine Soil																																	33*						
Human Health	NEPM (2013) HIL A	100		60	4500	20	100		100	6000		300	3800	40		400	200			7400																	3	3	3	300
	NEPM (2013) HIL A for Residential	100		60	4500	20	100		100	6000		300	3800	40		400	200			7400																	3	3	3	300
	NEMP (2020) HIL A for Low Density Residential																																							
	NEPM (2013) HSL A/B, Clay																																	5						
	NEPM (2013) HSL A/B, Silt																																	4						
	NEPM (2013) HSL A/B for Low-High Density Residential, Clay																																	5						
	NEPM (2013) HSL A/B for Low-High Density Residential, Silt																																	4						
	CRC CARE (2011) Direct Contact HSL A for Residential (Low Density)																																	1400						
	NEPM (2013) HIL C for Public Open Space/Recreation	300		90	20000	90	300		300	17000		600	19000	80		1200	700			30000																	3	3	3	300
	NEPM (2020) HIL C for Public Open Space																																							
	NEPM (2013) HSL C for Recreational/Open Space, Clay																																	NL						
	NEPM (2013) HSL C for Recreational/Open Space, Silt																																	NL						
	CRC CARE (2011) Direct Contact HSL C for Public Open Space/Recreation																																	1900						
	CRC CARE (2011) Direct Contact HSL for Intrusive Maintenance Workers																																	29000						
Buildings and Structures	AS2159-2009 Mild Exposure Classification for Concrete Piles (Soil Conditions A)																																							
	AS2159-2009 Non-Aggressive Exposure Classification for Concrete Piles (Soil Conditions B)																																							
	AS2159-2009 Non-Aggressive Exposure Classification for Steel Piles (Soil Conditions B)																																							
	AS2159-2009 Non-Aggressive Exposure for Steel Piles (Soil Conditions A)																																							
Other	NEPM (2013) Management Limits for Residential and Open Space, Fine Soil																																							
	NEPM (2013) Management Limits for Residential/Open Space, Fine Soil																																							

Sample Results

Field ID	Date	Lab Report	Domain	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(a)pyrene TEQ (LOR)	PAHs (Sum of total)
115175M_TP01_0.3	26/05/2023	993629	FILL	2.2	100	<2	<10	<0.4	-	48	16	18	-	18	300	<0.1	<5	30	<2	<2	<10	39	<0.5	<0.5	<0.5	<0.5	1	0.9	0.9	<0.5	0.6	<0.5	1.3	<0.5	0.5	<0.5	0.8	1.3	1.5	1.2	1.8	7.3
115175M_TP02_0.6	24/05/2023	993591	FILL	<2	170	<2	<10	<0.4	-	20	8.9	6	-	12	49	<0.1	<5	13	<2	<2	<10	9.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5
115175M_TP03_0.55	24/05/2023	993591	NATURAL	<2	-	-	-	<0.4	<1	19	-	5.3	8000	9.8	-	<0.1	<5	11	<2	<2	<10	6.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5
115175M_TP03_0.8	24/05/2023	993591	NATURAL	<2	25	<2	<10	<0.4	-	16	<5	<5	-	8.3	40	<0.1	<5	6.8	<2	<2	<10	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5
115175M_TP05_0.5	24/05/2023	997388	FILL	2.5	87	<2	<20	<0.4	-	63	13	16	-	17	130	0.1	<5	36	<2	<2	<10	30	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5
115175M_TP05_1.0	25/05/2023	993591	FILL	<2	34	<2	<10	<0.4	-	39	10	14	-	10	35	<0.1	<5	16	<2	<2	<10	14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5
115175M_TP07_0.1	26/05/2023	993629	FILL	<2	48	<2	<10	<0.4	-	27	<5	14	-	19	98	0.1	<5	13	<2	<2	<10	53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5
115175M_TP07_0.5	25/05/2023	993591	FILL	<2	-	-	-	<0.4	<1	57	-	21	29,000	20	-	0.1	<5	34	<2	<2	<10	33	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5
115175M_TP10_0.3	25/05/2023	993629	FILL	2.5	97	<2	<10	<0.4	-	70	15	19	-	12	290	0.3	<5	38	<2	<2	<10	41	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5
115175M_TP11_0.55	25/05/2023	993591	FILL	2.1	1200	<2	<10	0.6	-	7.2	<5	5.5	-	380	50	<0.1	<5	<2	<2	<2	<10	730	<0.5	<0.5	<0.5	0.8	1	0.9	0.6	0.6	1	<0.5	1.7	<0.5	0.5	<0.5	<0.5	1.8	1.5	1.3	1.8	8.9
115175M_TP13_0.6	25/05/2023	993591	FILL	4.7	96	<2	<20	<0.4	-	160	29	29	-	19	300	1.6	<5	55	<2	<2	<10	86	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5
115175M_TP15_0.1	26/05/2023	993629	FILL	4.1	78	<2	<25	<0.4	-	66	13	22	-	43	180	1.9	<5	25	<2	<2	<10	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5
115175M_TP15_0.5	25/05/2023	993591	FILL	7.6	94	<2	<20	<0.4	-	46	13	30	-	32	160	0.5	<5	41	<2	<2	<10	79	<0.5	<0.5	<0.5	0.6	1.8	1.2	1.2	1.7	1.1	<0.5	0.7	<0.5	1.4	<0.5	1.1		2.5	2.3	2.8	11
115175M_TP15_1.0	25/05/2023	993591	NATURAL	<2	-	-	-	<0.4	<1	31	-	7	16,000	9.7	-	<0.1	<5	14	<2	<2	<10	12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.2	<0.5

*Higher reliability values for benzo(a)pyrene outlined in CRC Care Technical Report no.39 has been adopted in lieu of low reliability values in the NEPM

115175M: SCA AIS Northcote Public Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

Table A1: Summary of Analytical Results (Environmental Values)

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TRH / BTEX / Physiochemical properties / Anions and Cations / Inorganics / MAH / Phenols

Criterion / Field ID	Date	Lab Report	Domain	C6-C10	F1 (C6-C10 less BTEX)	C10-C16	F2 (C10-C16 less NAPHTHALENE)	F3 (C16-C34)	F4 (C34-C40)	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total	pH (aqueous extract)	pH (Lab)	Conductivity (1:5 aqueous extract)	Moisture Content (dried @103°C)	Iron (%)	%Clay*	Cation Exchange Capacity	Total Organic Carbon	Chloride	Fluoride	Sulphate (as SO4)	Cyanide Total	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene (Cumene)	Styrene	Total MAH	2,4-dimethylphenol	2,4-dinitrophenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-chloro-3-methylphenol	4-nitrophenol	Cresol Total	Phenol	Phenols (Total Halogenated)	Phenols (Total Non Halogenated)
Units				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH_Units	pH_Units	uS/cm	%	%	%		%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				20	20	50	50	100	100	0.1	0.1	0.1	0.2	0.1	0.3	0.1	0.1	10	1	0.01	1	0.05	0.1	5	100	30	5	0.5	0.5	0.5	0.5	0.5	0.5	5	0.2	1	0.4	5	20	1	5	0.5	0.5	1	20
Land Dependent Ecosystems and Species																																													
NEPM (2013) EIL for Urban Residential/Public Open Space (Fill)																																													
NEPM (2013) EIL for Urban Residential/Public Open Space (Natural)																																													
NEPM (2013) ESL for Urban Residential/Public Open Space, Fine Soil					180		120	1300	5600	65	125	105			45																														
Human Health																																													
NEPM (2013) HIL A																																									400	3000	
NEPM (2013) HIL A for Residential																																									400	3000	
NEMP (2020) HIL A for Low Density Residential																																											
NEPM (2013) HSL A/B, Clay					50		280			0.7		480			110																													
NEPM (2013) HSL A/B, Silt					40		230			0.6		390			95																													
NEPM (2013) HSL A/B for Low-High Density Residential, Clay					50		280			0.7	NL	480			110																													
NEPM (2013) HSL A/B for Low-High Density Residential, Silt					40		230			0.6	NL	390			95																													
CRC CARE (2011) Direct Contact HSL A for Residential (Low Density)				4400	3300		4500	6300		100	4500	14000			12000																													
NEPM (2013) HIL C for Public Open Space/Recreation																																									4000	40000	
NEMP (2020) HIL C for Public Open Space																																											
NEPM (2013) HSL C for Recreational/Open Space, Clay					NL		NL			NL	NL	NL			NL																													
NEPM (2013) HSL C for Recreational/Open Space, Silt					NL		NL			NL	NL	NL			NL																													
CRC CARE (2011) Direct Contact HSL C for Public Open Space/Recreation				5100	3800		5300	7400		120	5300	18000			15000																													
CRC CARE (2011) Direct Contact HSL for Intrusive Maintenance Workers					82000		62000	85000	120000	1100	85000	120000			130000																													
Buildings and Structures																																												
AS2159-2009 Mild Exposure Classification for Concrete Piles (Soil Conditions A)																									5000																			
AS2159-2009 Non-Aggressive Exposure Classification for Concrete Piles (Soil Conditions B)																									5000																			
AS2159-2009 Non-Aggressive Exposure Classification for Steel Piles (Soil Conditions B)																							20000																					
AS2159-2009 Non-Aggressive Exposure for Steel Piles (Soil Conditions A)																							5000																					
Other																																												
NEPM (2013) Management Limits for Residential and Open Space, Fine Soil				800		1000		3500	10000																																			
NEPM (2013) Management Limits for Residential/Open Space, Fine Soil				800		1000		3500	10000																																			
115175M_TP01_0.3	26/05/2023	993629	FILL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	18	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP02_0.6	24/05/2023	993591	FILL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	18	-	-	-	-	-	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP03_0.55	24/05/2023	993591	NATURAL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	7.6	7.7	53	15	0.8	14	4.2	0.4	31	1500	48	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	<0.5	<1	<20
115175M_TP03_0.8	24/05/2023	993591	NATURAL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP05_0.5	24/05/2023	997388	FILL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP05_1.0	25/05/2023	993591	FILL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	18	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP07_0.1	26/05/2023	993629	FILL	<20	<20	<50	<50	100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP07_0.5	25/05/2023	993591	FILL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	7.7	7.6	310	26	2.9	15	54	1.5	16	<100	35	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	<0.5	<1	<20
115175M_TP10_0.3	26/05/2023	993629	FILL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	17	-	-	-	-	-	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP11_0.55	25/05/2023	993591	FILL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	8.7	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP13_0.6	25/05/2023	993591	FILL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP15_0.1	26/05/2023	993629	FILL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	21	-	-	-	-	-	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP15_0.5	25/05/2023	993591	FILL	<20	<20	<50	<50	730	490	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	18	-	-	-	-	-	230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP15_1.0	25/05/2023	993591	NATURAL	<20	<20	<50	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	7.7	7	83	19	1.6	22	28	12	14	140	89	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	<0.5	<1	<20

*Higher reliability values for benzo(a)pyrene outlined in CRC Care Technical Report no.39 has been adopted in lieu of low reliability values in the NEPM

115175M: SCA AIS Northcote Public Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

Table A1: Summary of Analytical Results (Environmental Values)

prensa

Criteria (all units mg/kg)

Criterion	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene (HCB)	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	tetrachlorophenols	Dinoseb	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.5	0.5	0.5	0.5	0.5	1	1	0.5	0.5	0.5	1	10	20	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM (2013) EIL for Urban Residential/Public Open Space (Fill)																														180																						
NEPM (2013) EIL for Urban Residential/Public Open Space (Natural)																														180																						
NEPM (2013) ESL for Urban Residential/Public Open Space, Fine Soil																																																			
NEPM (2013) HIL A								10											100						6		50				240					10				6		300	20								1
NEPM (2013) HIL A for Residential								10											100						6		50				240					10				6		300	20								1
NEPM (2020) HIL A for Low Density Residential																																																			
NEPM (2013) HSL A/B, Clay																																																			
NEPM (2013) HSL A/B, Silt																																																			
NEPM (2013) HSL A/B for Low-High Density Residential, Clay																																																			
NEPM (2013) HSL A/B for Low-High Density Residential, Silt																																																			
CRC CARE (2011) Direct Contact HSL A for Residential (Low Density)																																																			
NEPM (2013) HIL C for Public Open Space/Recreation								10											120						10		70				400					20				10		400	30								1
NEPM (2020) HIL C for Public Open Space																																																			
NEPM (2013) HSL C for Recreational/Open Space, Clay																																																			
NEPM (2013) HSL C for Recreational/Open Space, Silt																																																			
CRC CARE (2011) Direct Contact HSL C for Public Open Space/Recreation																																																			
CRC CARE (2011) Direct Contact HSL for Intrusive Maintenance Workers																																																			
AS2159-2009 Mild Exposure Classification for Concrete Piles (Soil Conditions A)																																																			
AS2159-2009 Non-Aggressive Exposure Classification for Concrete Piles (Soil Conditions B)																																																			
AS2159-2009 Non-Aggressive Exposure Classification for Steel Piles (Soil Conditions B)																																																			
AS2159-2009 Non-Aggressive Exposure for Steel Piles (Soil Conditions A)																																																			
NEPM (2013) Management Limits for Residential and Open Space, Fine Soil																																																			
NEPM (2013) Management Limits for Residential/Open Space, Fine Soil																																																			

Criteria categories: Land Dependent Ecosystems and Species; Human Health; Buildings and Structures; Other.

Sample Results

Field ID	Date	Lab Report	Domain	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene (HCB)	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	tetrachlorophenols	Dinoseb	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)
115175M_TP01_0.3	26/05/2023	993629	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP02_0.6	24/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP03_0.55	24/05/2023	993591	NATURAL	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<1	<10	<20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
115175M_TP03_0.8	24/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP05_0.5	24/05/2023	997388	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP05_1.0	25/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP07_0.1	26/05/2023	993629	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP07_0.5	25/05/2023	993591	FILL	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<1	<10	<20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
115175M_TP10_0.3	25/05/2023	993629	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP11_0.55	25/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP13_0.6	25/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP15_0.1	26/05/2023	993629	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP15_0.5	25/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP15_1.0	25/05/2023	993591	NATURAL	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<1	<10	<20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

*Higher reliability values for benzo(a)pyrene outlined in CRC Care Technical Report no.39 has been adopted in lieu of low reliablity values in the NEPM

115175M: SCA AIS Northcote Public Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

Table A1: Summary of Analytical Results (Environmental Values)

prensa

Criteria (left-hand labels):

Land Dependent Ecosystems and Species
- NEPM (2013) EIL for Urban Residential/Public Open Space (Fill)
- NEPM (2013) EIL for Urban Residential/Public Open Space (Natural)
- NEPM (2013) ESL for Urban Residential/Public Open Space, Fine Soil

Human Health
- NEPM (2013) HIL A
- NEPM (2013) HIL A for Residential
- NEMP (2020) HIL A for Low Density Residential
- NEPM (2013) HSL A/B, Clay
- NEPM (2013) HSL A/B, Silt
- NEPM (2013) HSL A/B for Low-High Density Residential, Clay
- NEPM (2013) HSL A/B for Low-High Density Residential, Silt
- CRC CARE (2011) Direct Contact HSL A for Residential (Low Density)
- NEPM (2013) HIL C for Public Open Space/Recreation
- NEMP (2020) HIL C for Public Open Space
- NEPM (2013) HSL C for Recreational/Open Space, Clay
- NEPM (2013) HSL C for Recreational/Open Space, Silt
- CRC CARE (2011) Direct Contact HSL C for Public Open Space/Recreation
- CRC CARE (2011) Direct Contact HSL for Intrusive Maintenance Workers

Buildings and Structures
- AS2159-2009 Mild Exposure Classification for Concrete Piles (Soil Conditions A)
- AS2159-2009 Non-Aggressive Exposure Classification for Concrete Piles (Soil Conditions B)
- AS2159-2009 Non-Aggressive Exposure Classification for Steel Piles (Soil Conditions B)
- AS2159-2009 Non-Aggressive Exposure for Steel Piles (Soil Conditions A)

Other
- NEPM (2013) Management Limits for Residential and Open Space, Fine Soil
- NEPM (2013) Management Limits for Residential/Open Space, Fine Soil

Field ID	Date	Lab Report	Domain	Methyl Ethyl Ketone	4-Methyl-2-pentanone	Acetone	3-Chloropropene (Allyl chloride)	Carbon disulfide	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene (TCE)	Tetrachloroethene (PCE)	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride
			units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
115175M_TP01_0.3	26/05/2023	993629	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP02_0.6	24/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP03_0.55	24/05/2023	993591	NATURAL	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
115175M_TP03_0.8	24/05/2023	993591	NATURAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP05_0.5	24/05/2023	997388	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP05_1.0	25/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP07_0.1	26/05/2023	993629	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP07_0.5	25/05/2023	993591	FILL	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
115175M_TP10_0.3	26/05/2023	993629	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP11_0.55	25/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP13_0.6	25/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP15_0.1	26/05/2023	993629	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP15_0.5	25/05/2023	993591	FILL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115175M_TP15_1.0	25/05/2023	993591	NATURAL	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

*Higher reliablity values for benzo(a)pyrene outlined in CRC Care Technical Report no.39 has been adopted in lieu of low reliablity values in the NEPM

115175M: SCA AIS Northcote Public Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

Table A2: Summary of Analytical Results (EPAV Waste Classification)

prensa

Inorganic Species: Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium (hexavalent), Copper, Lead, Mercury, Molybdenum, Nickel, Tin, Selenium, Silver, Zinc

Anions and pH: Chloride, Cyanide Total, Fluoride, pH (aqueous extract), pH (Lab)

Organic Species: Phenols (Halogenated), Phenols (Non Halogenated), PAHs (Sum of total), Total MAH, Total recoverable hydrocarbons (C6 - C9), Total recoverable hydrocarbons (C10 - C36), Methyl Ethyl Ketone, Benzene, Ethylbenzene, Toluene, Xylene Total, Styrene, Benzo(a)pyrene, 2-chlorophenol, 2,4-dichlorophenol, 2,4,5-trichlorophenol

Sample ID	Sampled Date	Lab Report	As	Ba	Be	B	Cd	Cr(VI)	Cu	Pb	Hg	Mo	Ni	Sn	Se	Ag	Zn	Cl	CN Total	F	pH (aq)	pH (Lab)	Phenols (Hal)	Phenols (Non Hal)	PAHs	Total MAH	TRH C6-C9	TRH C10-C36	MEK	Benzene	Ethylbenzene	Toluene	Xylene Total	Styrene	Benzo(a)pyrene	2-chlorophenol	2,4-dichlorophenol	2,4,5-trichlorophenol
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH_Units	pH_Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2	10	2	10	0.4	1	5	5	0.1	5	5	10	2	2	5	5	5	100	0.1	0.1	1	20	0.5	0.5	20	50	0.5	0.1	0.1	0.1	0.3	0.5	0.5	0.5	0.5	1
EPA Vic Publication 1828.2 Category B Upper Limits			2000	25000	400	60000	400	2000	20000	6000	300	4000	12000		40000	720	140000		10000	40000	2-12.5	2-12.5		2200	400		2600	40000	32000	16	4800	12800	9600	480	160	4800	3200	64000
EPA Vic Publication 1828.2 Category C Upper Limits			500	6250	100	15000	100	500	5000	1500	75	1000	3000		10000	180	35000		2500	10000				560	650		10000	8000		4	1200	3200	2400	120	40	1200	800	16000
EPA Vic Publication 1828.2 Category D Upper Limits			500	6250	100	15000	100	500	5000	1500	75	1000	3000		10000	180	35000		2500	10000	4-10	4-10		560	325		5000	8000		4	1200	3200	2400	120	20	1200	800	16000
EPA Vic Publication 1828.2 Fill Material Upper Limits			20				3	1	100	300	1	40	60	50	10	10	200		50	450	4-10	4-10	1	60	20	7	100	1000		1					1			
115175M_TP01_0.3	26/05/2023	993629	2.2	100	<2	<10	<0.4	-	18	18	<0.1	<5	30	<10	<2	<2	39	-	-	<100	-	-	-	-	7.3	-	<20	<50	-	<0.1	<0.1	<0.1	<0.3	-	1	-	-	-
115175M_TP02_0.6	24/05/2023	993591	<2	170	<2	<10	<0.4	-	6	12	<0.1	<5	13	<10	<2	<2	9.5	-	-	220	-	-	-	-	<0.5	-	<20	<50	-	<0.1	<0.1	<0.1	<0.3	-	<0.5	-	-	-
115175M_TP03_0.55	24/05/2023	993591	<2	-	-	-	<0.4	<1	5.3	9.8	<0.1	<5	11	<10	<2	<2	6.3	31	<5	1500	7.6	7.7	<1	<20	<0.5	<0.5	<20	<50	<0.5	<0.1	<0.1	<0.1	<0.3	<0.5	<0.5	<0.5	<0.5	<1
115175M_TP03_0.8	24/05/2023	993591	<2	25	<2	<10	<0.4	-	<5	8.3	<0.1	<5	6.8	<10	<2	<2	<5	-	-	-	-	-	-	-	<0.5	-	<20	<50	-	<0.1	<0.1	<0.1	<0.3	-	<0.5	-	-	-
115175M_TP05_0.5	24/05/2023	997388	2.5	87	<2	<20	<0.4	-	16	17	0.1	<5	36	<10	<2	<2	30	-	-	-	-	-	-	-	<0.5	-	<20	<50	-	<0.1	<0.1	<0.1	<0.3	-	<0.5	-	-	-
115175M_TP05_1.0	25/05/2023	993591	<2	34	<2	<10	<0.4	-	14	10	<0.1	<5	16	<10	<2	<2	14	-	-	<100	-	-	-	-	<0.5	-	<20	<50	-	<0.1	<0.1	<0.1	<0.3	-	<0.5	-	-	-
115175M_TP07_0.1	26/05/2023	993629	<2	48	<2	<10	<0.4	-	14	19	0.1	<5	13	<10	<2	<2	53	-	-	-	-	-	-	-	<0.5	-	<20	77	-	<0.1	<0.1	<0.1	<0.3	-	<0.5	-	-	-
115175M_TP07_0.5	25/05/2023	993591	<2	-	-	-	<0.4	<1	21	20	<0.1	<5	34	<10	<2	<2	33	16	<5	<100	7.7	7.6	<1	<20	<0.5	<0.5	<20	<50	<0.5	<0.1	<0.1	<0.1	<0.3	<0.5	<0.5	<0.5	<0.5	<1
115175M_TP10_0.3	26/05/2023	993629	2.5	97	<2	<25	<0.4	-	19	12	0.3	<5	38	<10	<2	<2	41	-	-	210	-	-	-	-	<0.5	-	<20	<50	-	<0.1	<0.1	<0.1	<0.3	-	<0.5	-	-	-
115175M_TP11_0.55	25/05/2023	993591	2.1	1200	<2	<10	0.6	-	5.5	380	<0.1	<5	<5	<10	<2	<2	730	-	-	<100	-	-	-	-	8.9	-	<20	81	-	<0.1	<0.1	<0.1	<0.3	-	1	-	-	-
115175M_TP13_0.6	25/05/2023	993591	4.7	96	<2	<20	<0.4	-	29	19	1.6	<5	55	<10	<2	<2	86	-	-	<100	-	-	-	-	<0.5	-	<20	<50	-	<0.1	<0.1	<0.1	<0.3	-	<0.5	-	-	-
115175M_TP15_0.1	26/05/2023	993629	4.1	78	<2	<25	<0.4	-	22	43	1.9	<5	25	<10	<2	<2	100	-	-	120	-	-	-	-	<0.5	-	<20	<50	-	<0.1	<0.1	<0.1	<0.3	-	<0.5	-	-	-
115175M_TP15_0.5	25/05/2023	993591	7.6	94	<2	<20	<0.4	-	30	32	0.5	<5	41	<10	<2	<2	79	-	-	230	-	-	-	-	11	-	<20	920	-	<0.1	<0.1	<0.1	<0.3	-	1.8	-	-	-
115175M_TP15_1.0	25/05/2023	993591	<2	-	-	-	<0.4	<1	7	9.7	<0.1	<5	14	<10	<2	<2	12	14	<5	140	7.7	7	<1	<20	<0.5	<0.5	<20	<50	<0.5	<0.1	<0.1	<0.1	<0.3	<0.5	<0.5	<0.5	<0.5	<1

115175M: SCA AIS Northcote Public Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

Table A2: Summary of Analytical Results (EPAV Waste Classification)

prensa

	2,4,6-trichlorophenol	Cresol Total	Polychlorinated biphenyls	Chlorinated hydrocarbons	Hexachlorobutadiene	Vinyl chloride	Carbon tetrachloride	Chlorobenzene	Chloroform	1,2-dichlorobenzene	1,4-dichlorobenzene	1,2-dichloroethane	1,1-dichloroethene	Dichloromethane	1,1,1,2-tetrachloroethane	1,1,2,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2-trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Other chlorinated hydrocarbons	Organochlorine pesticides	Aldrin + Dieldrin	DDT+DDE+DDD	Chlordane	Heptachlor	Other organochlorine pesticides	Moisture Content (dried @ 103°C)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
EQL	1	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.05	0.05	0.1	0.05	0.1	1
EPA Vic Publication 1828.2 Category B Upper Limits	320	32000	50		11	4.8	48	4800	960	24000	640	48	480	64	1600	210	4800	190	80	800			4.8	50	16	4.8	50	
EPA Vic Publication 1828.2 Category C Upper Limits	80	8000	50		2.8	1.2	12	1200	240	6000	160	12	120	16	400	52	1200	48	20	200			1.2	50	4	1.2	10	
EPA Vic Publication 1828.2 Category D Upper Limits	80	8000	2		2.8	1.2	12	1200	240	6000	160	12	120	16	400	52	1200	48	20	200			1.2	50	4	1.2	10	
EPA Vic Publication 1828.2 Fill Material Upper Limits			2	1	2.8	1.2	12	1200	240	6000	160	12	120	16	400	52	1200	48	20	200		1						

Sample ID	Sampled Date	Lab Report	2,4,6-trichlorophenol	Cresol Total	Polychlorinated biphenyls	Chlorinated hydrocarbons	Hexachlorobutadiene	Vinyl chloride	Carbon tetrachloride	Chlorobenzene	Chloroform	1,2-dichlorobenzene	1,4-dichlorobenzene	1,2-dichloroethane	1,1-dichloroethene	Dichloromethane	1,1,1,2-tetrachloroethane	1,1,2,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2-trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Other chlorinated hydrocarbons	Organochlorine pesticides	Aldrin + Dieldrin	DDT+DDE+DDD	Chlordane	Heptachlor	Other organochlorine pesticides	Moisture
115175M_TP01_0.3	26/05/2023	993629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
115175M_TP02_0.6	24/05/2023	993591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
115175M_TP03_0.55	24/05/2023	993591	<1	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.05	<0.05	<0.1	<0.05	<0.1	15
115175M_TP03_0.8	24/05/2023	993591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
115175M_TP05_0.5	24/05/2023	997388	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
115175M_TP05_1.0	25/05/2023	993591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
115175M_TP07_0.1	26/05/2023	993629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
115175M_TP07_0.5	25/05/2023	993591	<1	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.05	<0.05	<0.1	<0.05	<0.1	26
115175M_TP10_0.3	26/05/2023	993629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
115175M_TP11_0.55	25/05/2023	993591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.7
115175M_TP13_0.6	25/05/2023	993591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
115175M_TP15_0.1	26/05/2023	993629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
115175M_TP15_0.5	25/05/2023	993591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
115175M_TP15_1.0	25/05/2023	993591	<1	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.1	<0.05	<0.05	<0.1	<0.05	<0.1	19

Table A1: Summary of Table A3: Analytical Results (Leachable Concentrations)

	Organic Species
	Benzo(a)pyrene
	µg/L
EQL	0.5
EPA Vic Publication 1828.2 Category B Upper Limits	4
EPA Vic Publication 1828.2 Category C Upper Limits	1
EPA Vic Publication 1828.2 Category D Upper Limits	0.5

Sample ID	Sampled Date	Lab Report	
115175M_TP15_0.5	25/05/2023	997388	<0.5

115175M: SCA AIS Northcote Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

Table A4: Quality Control Sample
Results Summary

prensa

Lab Report Number			997388	993591		997388	37600	
Sample Type			Parent Sample	Duplicate Sample		Parent Sample	Split Sample	
Field ID			115175M_TP05_0.5	115175M_QC01_24MAY23	**RPD**	115175M_TP05_0.5	115175M_QC02_24MAY23	**RPD**
Sampled Date/Time			24/05/2023	24/05/2023		24/05/2023	24/05/2023	

Chemical Group	Chemical Name	Units	EQL						
Metals	Arsenic	mg/kg	2 (Primary): 4 (Interlab)	2.5	<2.0	22	2.5	<4.0	NC
	Cadmium	mg/kg	0.4	<0.4	<0.4	NC	<0.4	<0.4	NC
	Chromium (III+VI)	mg/kg	5 (Primary): 1 (Interlab)	63.0	49.0	25	**63.0**	**21.0**	**100**
	Copper	mg/kg	5 (Primary): 1 (Interlab)	16.0	14.0	13	16.0	7.0	78
	Lead	mg/kg	5 (Primary): 1 (Interlab)	17.0	12.0	34	**17.0**	**5.0**	**109**
	Mercury	mg/kg	0.1	0.1	<0.1	NC	0.1	<0.1	NC
	Nickel	mg/kg	5 (Primary): 1 (Interlab)	36.0	27.0	29	**36.0**	**14.0**	**88**
	Zinc	mg/kg	5 (Primary): 1 (Interlab)	30.0	21.0	35	**30.0**	**8.0**	**116**
PAH	Acenaphthene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Acenaphthylene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Anthracene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Benz(a)anthracene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Benzo(a)pyrene	mg/kg	0.5 (Primary): 0.05 (Interlab)	<0.5	<0.5	NC	<0.5	<0.05	NC
	Benzo(b+j)fluoranthene	mg/kg	0.5	<0.5	<0.5	NC	<0.5		
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	NC	<0.5		
	Benzo(g,h,i)perylene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Chrysene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Dibenz(a,h)anthracene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Fluoranthene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Fluorene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Naphthalene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5			<0.5	<0.1	NC
	Naphthalene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Phenanthrene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Pyrene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	NC	<0.5	<0.1	NC
	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0.6	NC	0.6	<0.5	18
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
	Benzo(a)pyrene TEQ (LOR)	mg/kg	0.5	1.2	1.2	NC	**1.2**	**<0.5**	**82**
	PAHs (Sum of total)	mg/kg	0.5 (Primary): 0.05 (Interlab)	<0.5	<0.5	NC	<0.5	<0.05	NC
Physiochemical properties	Moisture Content (dried @ 103°C)	%	1	15.0	17.0	13	15.0		

115175M: SCA AIS Northcote Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
143 Normanby Avenue, Thornbury, Victoria

Table A5: Quality Control Sample
Results Summary

prensa

Field ID	115175M_R01_24MAY23	115175M_R02_24MAY23
Sampled Date	24/05/2023	25/05/2023
Sample Type	Rinsate	Rinsate

Chemical Group	Chemical Name	Units	EQL		
Inorganic Species	Arsenic	µg/l	1	<1	<1
	Cadmium	µg/l	0.2	<0.2	<0.2
	Copper	µg/l	1	<1	<1
	Lead	µg/l	1	<1	<1
	Mercury	µg/l	0.1	<0.1	<0.1
	Nickel	µg/l	1	<1	<1
	Zinc	µg/l	5	<5	<5
Organic Species	PAHs (Sum of total)	µg/l	1	<1	<1
	Benzo(a)pyrene	µg/l	1	<1	<1
Other	Chromium (III+VI)	µg/l	1	<1	<1
	Acenaphthene	µg/l	1	<1	<1
	Acenaphthylene	µg/l	1	<1	<1
	Anthracene	µg/l	1	<1	<1
	Fluoranthene	µg/l	1	<1	<1
	Fluorene	µg/l	1	<1	<1
	Naphthalene	µg/l	1	<1	<1
	Phenanthrene	µg/l	1	<1	<1
	Pyrene	µg/l	1	<1	<1
	Benz(a)anthracene	µg/l	1	<1	<1
	Benzo(b+j)fluoranthene	µg/l	1	<1	<1
	Benzo(k)fluoranthene	µg/l	1	<1	<1
	Benzo(g,h,i)perylene	µg/l	1	<1	<1
	Chrysene	µg/l	1	<1	<1
	Dibenz(a,h)anthracene	µg/l	1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/l	1	<1	<1

UCL Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.2 3/07/2023 1:14:30 PM
From File	ProUCL input classification.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lead

General Statistics

Total Number of Observations	11	Number of Distinct Observations	9
		Number of Missing Observations	2
Minimum	10	Mean	52.91
Maximum	380	Median	19
SD	108.9	Std. Error of Mean	32.84
Coefficient of Variation	2.058	Skewness	3.271

Normal GOF Test

Shapiro Wilk Test Statistic	0.418	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.792	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.445	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.291	Data Not Normal at 1% Significance Level	

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	112.4	95% Adjusted-CLT UCL (Chen-1995)	141.5
		95% Modified-t UCL (Johnson-1978)	117.8

Gamma GOF Test

A-D Test Statistic	2.035	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.762	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.355	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.265	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.763	k star (bias corrected MLE)	0.616
Theta hat (MLE)	69.32	Theta star (bias corrected MLE)	85.93
nu hat (MLE)	16.79	nu star (bias corrected)	13.55
MLE Mean (bias corrected)	52.91	MLE Sd (bias corrected)	67.43
		Approximate Chi Square Value (0.05)	6.262
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	5.475

Assuming Gamma Distribution

95% Approximate Gamma UCL	114.5	95% Adjusted Gamma UCL	130.9

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.725	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.876	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.302	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.231	Data Not Lognormal at 10% Significance Level	

Data Not Lognormal at 10% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.303	Mean of logged Data	3.186

| Maximum of Logged Data | 5.94 | SD of logged Data | 1.006 |

Assuming Lognormal Distribution

95% H-UCL	104.6	90% Chebyshev (MVUE) UCL	74.1
95% Chebyshev (MVUE) UCL	90.58	97.5% Chebyshev (MVUE) UCL	113.5
99% Chebyshev (MVUE) UCL	158.4		

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	106.9	95% BCA Bootstrap UCL	151
95% Standard Bootstrap UCL	104.8	95% Bootstrap-t UCL	695.7
95% Hall's Bootstrap UCL	409.9	95% Percentile Bootstrap UCL	117.9
90% Chebyshev(Mean, Sd) UCL	151.4	95% Chebyshev(Mean, Sd) UCL	196
97.5% Chebyshev(Mean, Sd) UCL	258	99% Chebyshev(Mean, Sd) UCL	379.6

Suggested UCL to Use

| 95% Student's-t UCL | 112.4 |

The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.
Please verify the data were collected from random locations.
If the data were collected using judgmental or other non-random methods,
then contact a statistician to correctly calculate UCLs.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Mercury

General Statistics

Total Number of Observations	11	Number of Distinct Observations	5
		Number of Missing Observations	2
Number of Detects	6	Number of Non-Detects	5
Number of Distinct Detects	5	Number of Distinct Non-Detects	1
Minimum Detect	0.1	Minimum Non-Detect	0.1
Maximum Detect	1.9	Maximum Non-Detect	0.1
Variance Detects	0.631	Percent Non-Detects	45.45%
Mean Detects	0.75	SD Detects	0.794
Median Detects	0.4	CV Detects	1.059
Skewness Detects	0.885	Kurtosis Detects	-1.551
Mean of Logged Detects	-0.898	SD of Logged Detects	1.29

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.807	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.713	Detected Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.29	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.373	Detected Data appear Normal at 1% Significance Level	

Detected Data appear Normal at 1% Significance Level
Note GOF tests may be unreliable for small sample sizes

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.455	KM Standard Error of Mean	0.207
90KM SD	0.626	95% KM (BCA) UCL	0.827
95% KM (t) UCL	0.829	95% KM (Percentile Bootstrap) UCL	0.782
95% KM (z) UCL	0.795	95% KM Bootstrap t UCL	1.648
90% KM Chebyshev UCL	1.075	95% KM Chebyshev UCL	1.355
97.5% KM Chebyshev UCL	1.745	99% KM Chebyshev UCL	2.511

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.416	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.716	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.212	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.341	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics on Detected Data Only

k hat (MLE)	0.951		k star (bias corrected MLE)	0.587
Theta hat (MLE)	0.789		Theta star (bias corrected MLE)	1.279
nu hat (MLE)	11.41		nu star (bias corrected)	7.038
Mean (detects)	0.75			

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01		Mean	0.414
Maximum	1.9		Median	0.1
SD	0.682		CV	1.648
k hat (MLE)	0.389		k star (bias corrected MLE)	0.343
Theta hat (MLE)	1.064		Theta star (bias corrected MLE)	1.205
nu hat (MLE)	8.552		nu star (bias corrected)	7.553
Adjusted Level of Significance (β)	0.0278			
Approximate Chi Square Value (7.55, α)	2.479		Adjusted Chi Square Value (7.55, β)	2.032
95% Gamma Approximate UCL	1.26		95% Gamma Adjusted UCL	1.538

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.455		SD (KM)	0.626
Variance (KM)	0.392		SE of Mean (KM)	0.207
k hat (KM)	0.528		k star (KM)	0.444
nu hat (KM)	11.61		nu star (KM)	9.776
theta hat (KM)	0.861		theta star (KM)	1.023
80% gamma percentile (KM)	0.741		90% gamma percentile (KM)	1.259
95% gamma percentile (KM)	1.821		99% gamma percentile (KM)	3.217

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (9.78, α)	3.802		Adjusted Chi Square Value (9.78, β)	3.218
95% KM Approximate Gamma UCL	1.169		95% KM Adjusted Gamma UCL	1.381

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.886	**Shapiro Wilk GOF Test**
10% Shapiro Wilk Critical Value	0.826	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.195	**Lilliefors GOF Test**
10% Lilliefors Critical Value	0.298	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.416		Mean in Log Scale	-2.593
SD in Original Scale	0.68		SD in Log Scale	2.263
95% t UCL (assumes normality of ROS data)	0.788		95% Percentile Bootstrap UCL	0.767
95% BCA Bootstrap UCL	0.877		95% Bootstrap t UCL	1.608
95% H-UCL (Log ROS)	59.78			

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-1.537	KM Geo Mean	0.215
KM SD (logged)	1.116	95% Critical H Value (KM-Log)	3.225
KM Standard Error of Mean (logged)	0.369	95% H-UCL (KM -Log)	1.252
KM SD (logged)	1.116	95% Critical H Value (KM-Log)	3.225
KM Standard Error of Mean (logged)	0.369		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	0.432
SD in Original Scale	0.67
95% t UCL (Assumes normality)	0.798

DL/2 Log-Transformed

Mean in Log Scale	-1.852
SD in Log Scale	1.426
95% H-Stat UCL	2.482

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 1% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.829

The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.
Please verify the data were collected from random locations.
If the data were collected using judgmental or other non-random methods,
then contact a statistician to correctly calculate UCLs.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Zinc

General Statistics

Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	2
Minimum	9.5	Mean	110.4
Maximum	730	Median	41
SD	207.5	Std. Error of Mean	62.58
Coefficient of Variation	1.88	Skewness	3.2

Normal GOF Test

Shapiro Wilk Test Statistic	0.475	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.792	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.429	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.291	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL

95% Student's-t UCL	223.8

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	277.8
95% Modified-t UCL (Johnson-1978)	233.9

Gamma GOF Test

A-D Test Statistic	1.077	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.762	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.29	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.265	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.765	k star (bias corrected MLE)	0.617
Theta hat (MLE)	144.4	Theta star (bias corrected MLE)	179
nu hat (MLE)	16.82	nu star (bias corrected)	13.57
MLE Mean (bias corrected)	110.4	MLE Sd (bias corrected)	140.6
		Approximate Chi Square Value (0.05)	6.277
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	5.489

Assuming Gamma Distribution

95% Approximate Gamma UCL	238.7	95% Adjusted Gamma UCL	272.9

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.919	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.876	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.185	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.231	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.251	Mean of logged Data	3.923
Maximum of Logged Data	6.593	SD of logged Data	1.144

Assuming Lognormal Distribution

95% H-UCL	318.9	90% Chebyshev (MVUE) UCL	187.9
95% Chebyshev (MVUE) UCL	232.6	97.5% Chebyshev (MVUE) UCL	294.6
99% Chebyshev (MVUE) UCL	416.5		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	213.3	95% BCA Bootstrap UCL	293.9
95% Standard Bootstrap UCL	209.3	95% Bootstrap-t UCL	704.2
95% Hall's Bootstrap UCL	641.3	95% Percentile Bootstrap UCL	232.5
90% Chebyshev(Mean, Sd) UCL	298.1	95% Chebyshev(Mean, Sd) UCL	383.2
97.5% Chebyshev(Mean, Sd) UCL	501.2	99% Chebyshev(Mean, Sd) UCL	733

Suggested UCL to Use

95% H-UCL	318.9

The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.
Please verify the data were collected from random locations.
If the data were collected using judgmental or other non-random methods,
then contact a statistician to correctly calculate UCLs.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Fluoride

General Statistics

Total Number of Observations	8	Number of Distinct Observations	5
		Number of Missing Observations	5
Number of Detects	4	Number of Non-Detects	4
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	120	Minimum Non-Detect	100
Maximum Detect	230	Maximum Non-Detect	100
Variance Detects	2567	Percent Non-Detects	50%

Mean Detects	195		SD Detects	50.66
Median Detects	215		CV Detects	0.26
Skewness Detects	-1.846		Kurtosis Detects	3.492
Mean of Logged Detects	5.242		SD of Logged Detects	0.305

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.775		**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.687		Detected Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.366		**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.413		Detected Data appear Normal at 1% Significance Level

Detected Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	147.5		KM Standard Error of Mean	23.16
90KM SD	56.73		95% KM (BCA) UCL	N/A
95% KM (t) UCL	191.4		95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	185.6		95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	217		95% KM Chebyshev UCL	248.5
97.5% KM Chebyshev UCL	292.1		99% KM Chebyshev UCL	378

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.676		**Anderson-Darling GOF Test**
5% A-D Critical Value	0.657		Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.399		**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.395		Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	16.08		k star (bias corrected MLE)	4.186
Theta hat (MLE)	12.13		Theta star (bias corrected MLE)	46.59
nu hat (MLE)	128.6		nu star (bias corrected)	33.49
Mean (detects)	195			

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	38.41		Mean	136.1
Maximum	230		Median	115.7
SD	74.09		CV	0.545
k hat (MLE)	3.357		k star (bias corrected MLE)	2.181
Theta hat (MLE)	40.53		Theta star (bias corrected MLE)	62.37
nu hat (MLE)	53.71		nu star (bias corrected)	34.9
Adjusted Level of Significance (β)	0.0195			
Approximate Chi Square Value (34.90, α)	22.39		Adjusted Chi Square Value (34.90, β)	19.89
95% Gamma Approximate UCL	212.1		95% Gamma Adjusted UCL	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	147.5		SD (KM)	56.73
Variance (KM)	3219		SE of Mean (KM)	23.16

k hat (KM)	6.759	k star (KM)	4.308
nu hat (KM)	108.1	nu star (KM)	68.93
theta hat (KM)	21.82	theta star (KM)	34.24
80% gamma percentile (KM)	201.6	90% gamma percentile (KM)	242.7
95% gamma percentile (KM)	280.4	99% gamma percentile (KM)	360.6

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (68.93, α)	50.82	Adjusted Chi Square Value (68.93, β)	46.9
95% KM Approximate Gamma UCL	200.1	95% KM Adjusted Gamma UCL	216.7

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.741	**Shapiro Wilk GOF Test**
10% Shapiro Wilk Critical Value	0.792	Detected Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**
10% Lilliefors Critical Value	0.346	Detected Data Not Lognormal at 10% Significance Level

Detected Data Not Lognormal at 10% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	141.2	Mean in Log Scale	4.845
SD in Original Scale	67.71	SD in Log Scale	0.494
95% t UCL (assumes normality of ROS data)	186.6	95% Percentile Bootstrap UCL	179.2
95% BCA Bootstrap UCL	180.9	95% Bootstrap t UCL	192.8
95% H-UCL (Log ROS)	222.6		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.923	KM Geo Mean	137.5
KM SD (logged)	0.369	95% Critical H Value (KM-Log)	2.15
KM Standard Error of Mean (logged)	0.151	95% H-UCL (KM -Log)	198.6
KM SD (logged)	0.369	95% Critical H Value (KM-Log)	2.15
KM Standard Error of Mean (logged)	0.151		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	122.5	Mean in Log Scale	4.577
SD in Original Scale	84.3	SD in Log Scale	0.738
95% t UCL (Assumes normality)	179	95% H-Stat UCL	280

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 1% Significance Level

Suggested UCL to Use

95% KM (t) UCL   191.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(a)pyrene

General Statistics

Total Number of Observations	11	Number of Distinct Observations	3
		Number of Missing Observations	2
Number of Detects	3	Number of Non-Detects	8
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	1	Minimum Non-Detect	0.5
Maximum Detect	1.8	Maximum Non-Detect	0.5
Variance Detects	0.213	Percent Non-Detects	72.73%
Mean Detects	1.267	SD Detects	0.462

Median Detects	1		CV Detects	0.365
Skewness Detects	1.732		Kurtosis Detects	N/A
Mean of Logged Detects	0.196		SD of Logged Detects	0.339

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.75	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.753	Detected Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.429	Detected Data appear Normal at 1% Significance Level

Detected Data appear Approximate Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.709	KM Standard Error of Mean	0.146
90KM SD	0.394	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.973	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.949	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.146	95% KM Chebyshev UCL	1.344
97.5% KM Chebyshev UCL	1.618	99% KM Chebyshev UCL	2.157

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.62	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.635	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.427	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.432	Detected data appear Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	12.52	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.101	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	75.13	nu star (bias corrected)	N/A
Mean (detects)	1.267		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.395
Maximum	1.8	Median	0.01
SD	0.606	CV	1.535
k hat (MLE)	0.368	k star (bias corrected MLE)	0.328
Theta hat (MLE)	1.072	Theta star (bias corrected MLE)	1.202
nu hat (MLE)	8.102	nu star (bias corrected)	7.226
Adjusted Level of Significance (β)	0.0278		
Approximate Chi Square Value (7.23, α)	2.295	Adjusted Chi Square Value (7.23, β)	1.869
95% Gamma Approximate UCL	1.243	95% Gamma Adjusted UCL	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.709	SD (KM)	0.394
Variance (KM)	0.155	SE of Mean (KM)	0.146
k hat (KM)	3.236	k star (KM)	2.414
nu hat (KM)	71.2	nu star (KM)	53.11
theta hat (KM)	0.219	theta star (KM)	0.294

| 80% gamma percentile (KM) | 1.038 | 90% gamma percentile (KM) | 1.32 |
| 95% gamma percentile (KM) | 1.587 | 99% gamma percentile (KM) | 2.171 |

Gamma Kaplan-Meier (KM) Statistics

| Approximate Chi Square Value (53.11, α) | 37.37 | Adjusted Chi Square Value (53.11, β) | 35.23 |
| 95% KM Approximate Gamma UCL | 1.008 | 95% KM Adjusted Gamma UCL | 1.069 |

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.75	**Shapiro Wilk GOF Test**
10% Shapiro Wilk Critical Value	0.789	Detected Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**
10% Lilliefors Critical Value	0.389	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Approximate Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.584	Mean in Log Scale	-0.85
SD in Original Scale	0.504	SD in Log Scale	0.831
95% t UCL (assumes normality of ROS data)	0.859	95% Percentile Bootstrap UCL	0.835
95% BCA Bootstrap UCL	0.911	95% Bootstrap t UCL	1.011
95% H-UCL (Log ROS)	1.224		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-0.451	KM Geo Mean	0.637
KM SD (logged)	0.422	95% Critical H Value (KM-Log)	2.079
KM Standard Error of Mean (logged)	0.156	95% H-UCL (KM -Log)	0.919
KM SD (logged)	0.422	95% Critical H Value (KM-Log)	2.079
KM Standard Error of Mean (logged)	0.156		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.527	Mean in Log Scale	-0.955
SD in Original Scale	0.518	SD in Log Scale	0.754
95% t UCL (Assumes normality)	0.81	95% H-Stat UCL	0.941

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 1% Significance Level

Suggested UCL to Use

| 95% KM (t) UCL | 0.973 |

When a data set follows an approximate distribution passing only one of the GOF tests,
it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Photographs

1. Soil type: stiff clay

2. Anthropogenic waste identified in test pits.

3. Soil type: Sandy silt to clay.

4. Southern portion looking north

Appendix A: Planning Property Reports

PLANNING PROPERTY REPORT

PROPERTY DETAILS

Address:	**143 NORMANBY AVENUE THORNBURY 3071**
Lot and Plan Number:	**More than one parcel - see link below**
Standard Parcel Identifier (SPI):	**More than one parcel - see link below**
Local Government Area (Council):	**DAREBIN** www.darebin.vic.gov.au
Council Property Number:	**207438**
Planning Scheme:	**Darebin** Planning Scheme - Darebin
Directory Reference:	**Melway 30 B5**

This property has 28 parcels. For full parcel details get the free Property report at Property Reports

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**Yarra Valley Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**CITIPOWER**

View location in VicPlan

STATE ELECTORATES

Legislative Council:	**NORTHERN METROPOLITAN**
Legislative Assembly:	**NORTHCOTE**

OTHER

Registered Aboriginal Party:	**Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation**

PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

Planning Zones

NEIGHBOURHOOD RESIDENTIAL ZONE (NRZ) (DAREBIN)

NEIGHBOURHOOD RESIDENTIAL ZONE - SCHEDULE 1 (NRZ1) (DAREBIN)

PUBLIC PARK AND RECREATION ZONE (PPRZ) (DAREBIN)

SCHEDULE TO THE PUBLIC PARK AND RECREATION ZONE (PPRZ) (DAREBIN)

ACZ - Activity Centre	C1Z - Commercial 1	C2Z - Commercial 2
GRZ - General Residential	IN1Z - Industrial 1	IN3Z - Industrial 3
MUZ - Mixed Use	NRZ - Neighbourhood Residential	PPRZ - Public Park and Recreation
PUZ1 - Public Use-Service and Utility	PUZ2 - Public Use-Education	PUZ3 - Public Use-Health & Community
PUZ5 - Public Use-Cemetery/Crematorium	PUZ6 - Public Use-Local Government	PUZ7 - Public Use-Other Public Use
R1Z - Residential 1	RGZ - Residential Growth	TRZ1 - State Transport Infrastructure
TRZ2 - Principal Road Network	TRZ3 - Significant Municipal Road	UFZ - Urban Floodway
Railway line	Railway station	Tram line
Water area	Water course	

Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

Planning Overlays

DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY (DCPO) (MERRI-BEK)
DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY – SCHEDULE 1 (DCPO1) (MERRI-BEK)
DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY (DCPO) (DAREBIN)
DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY – SCHEDULE 1 (DCPO1) (DAREBIN)

0 ———————— 700 m

▦	DCPO - Development Contributions Plan Overlay	┼	Railway line	●	Railway station
━	Water course	▦	Tram line	▨	Water area

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend
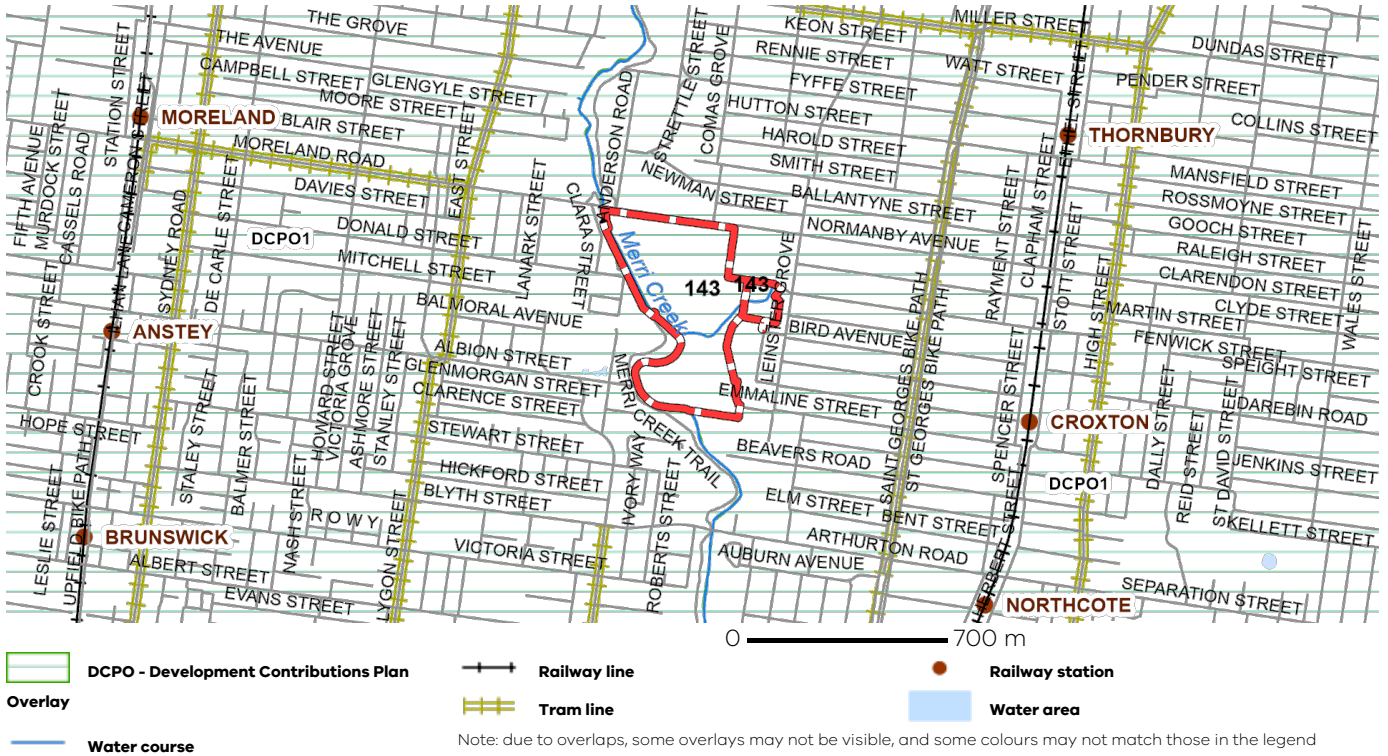
EROSION MANAGEMENT OVERLAY (EMO) (MERRI-BEK)
EROSION MANAGEMENT OVERLAY SCHEDULE (EMO) (MERRI-BEK)
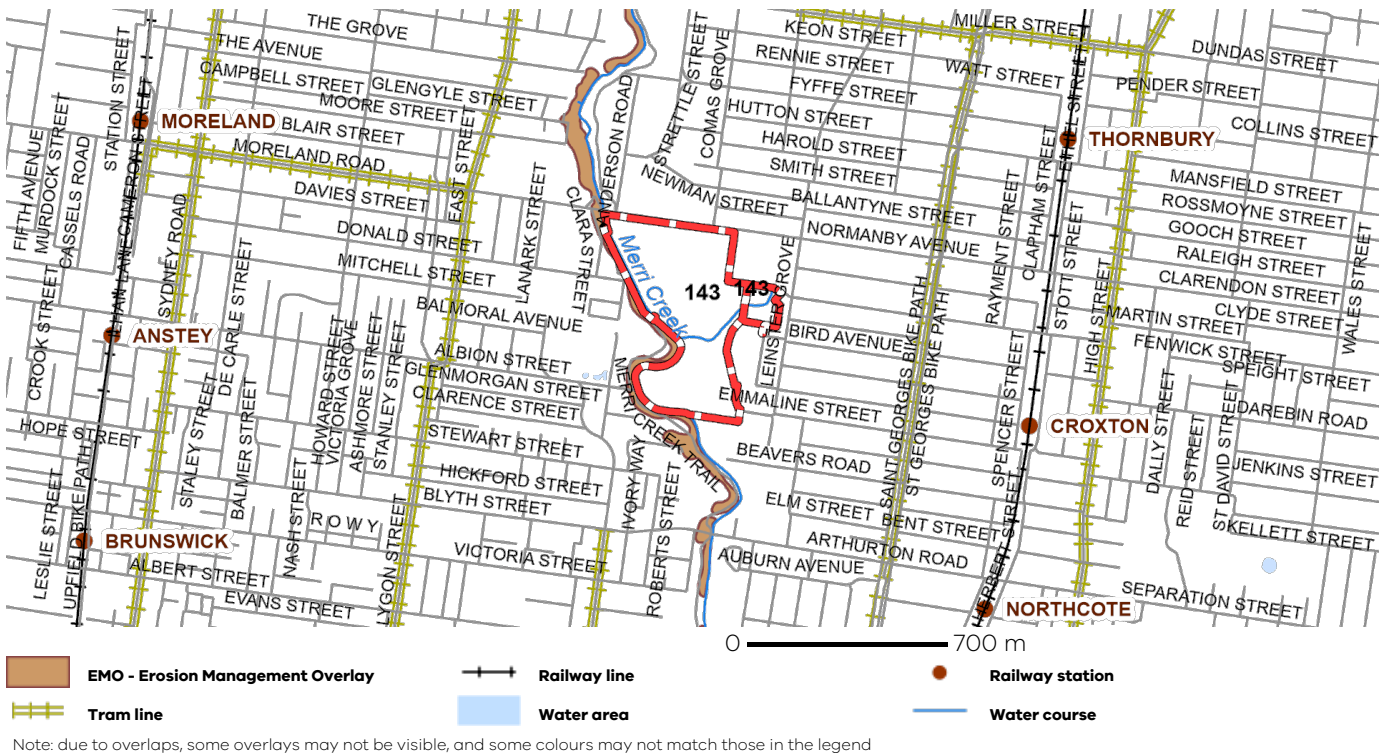
0 ———————— 700 m

▦	EMO - Erosion Management Overlay	┼	Railway line	●	Railway station
▦	Tram line	▨	Water area	━	Water course

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

PLANNING PROPERTY REPORT

Planning Overlays

ENVIRONMENTAL SIGNIFICANCE OVERLAY (ESO) (MERRI-BEK)
ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 1 (ESO1) (MERRI-BEK)
ENVIRONMENTAL SIGNIFICANCE OVERLAY (ESO) (DAREBIN)
ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 1 (ESO1) (DAREBIN)

ESO - Environmental Significance Overlay	Railway line	Railway station
Tram line	Water area	Water course

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

LAND SUBJECT TO INUNDATION OVERLAY (LSIO) (DAREBIN)
LAND SUBJECT TO INUNDATION OVERLAY SCHEDULE (LSIO) (DAREBIN)
LAND SUBJECT TO INUNDATION OVERLAY (LSIO) (MERRI-BEK)
LAND SUBJECT TO INUNDATION OVERLAY SCHEDULE (LSIO) (MERRI-BEK)

LSIO - Land Subject to Inundation Overlay	Railway line	Railway station
Tram line	Water area	Water course

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

PLANNING PROPERTY REPORT

Planning Overlays

SPECIAL BUILDING OVERLAY (SBO) (DAREBIN)

SPECIAL BUILDING OVERLAY SCHEDULE (SBO) (DAREBIN)

Legend:
- SBO - Special Building Overlay
- Tram line
- Railway line
- Water area
- Railway station
- Water course

0 —— 700 m

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

VICTORIA
State
Government

Environment,
Land, Water
and Planning
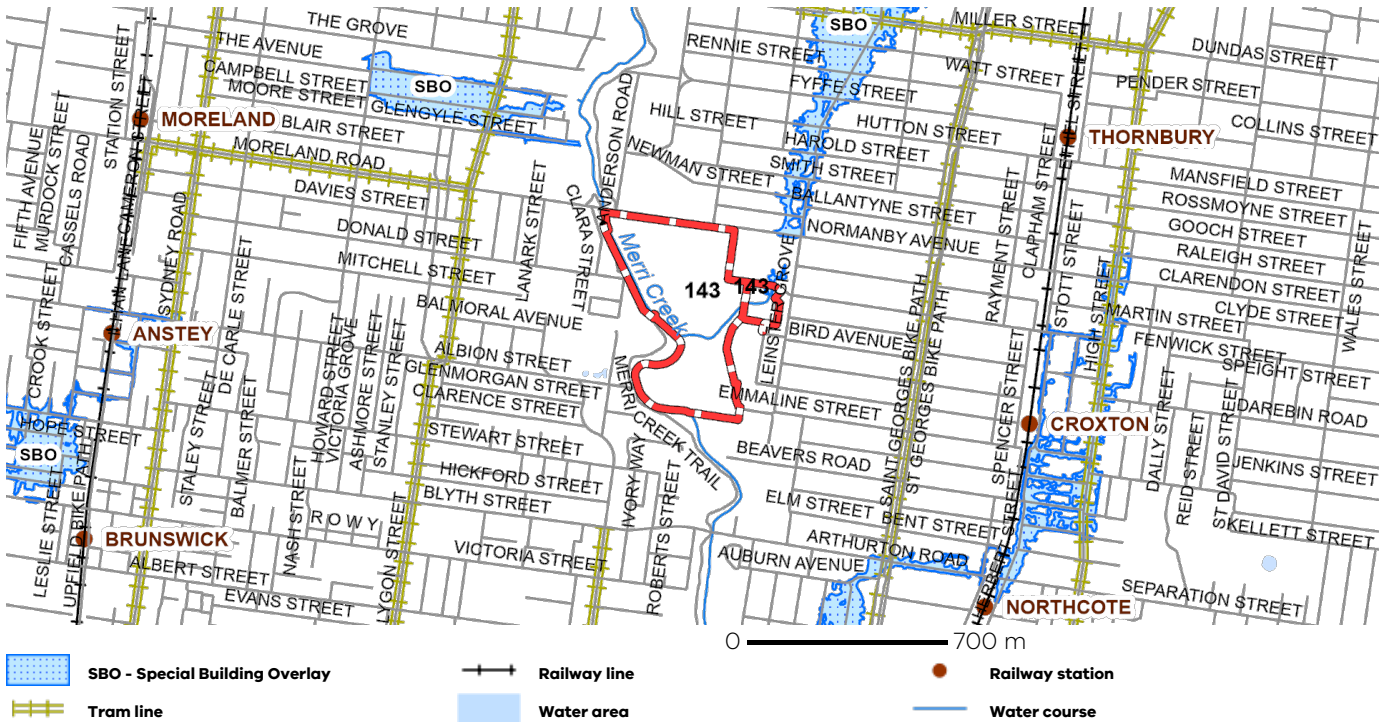
OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

DESIGN AND DEVELOPMENT OVERLAY (DDO) (DAREBIN)

DESIGN AND DEVELOPMENT OVERLAY (DDO) (MERRI-BEK)

DEVELOPMENT PLAN OVERLAY (DPO) (MERRI-BEK)

DEVELOPMENT PLAN OVERLAY (DPO) (DAREBIN)

ENVIRONMENTAL AUDIT OVERLAY (EAO) (MERRI-BEK)

ENVIRONMENTAL AUDIT OVERLAY (EAO) (DAREBIN)

HERITAGE OVERLAY (HO) (DAREBIN)

HERITAGE OVERLAY (HO) (MERRI-BEK)

INCORPORATED PLAN OVERLAY (IPO) (MERRI-BEK)

PUBLIC ACQUISITION OVERLAY (PAO) (DAREBIN)

PUBLIC ACQUISITION OVERLAY (PAO) (MERRI-BEK)

PARKING OVERLAY (PO) (MERRI-BEK)

SPECIFIC CONTROLS OVERLAY (SCO) (MERRI-BEK)
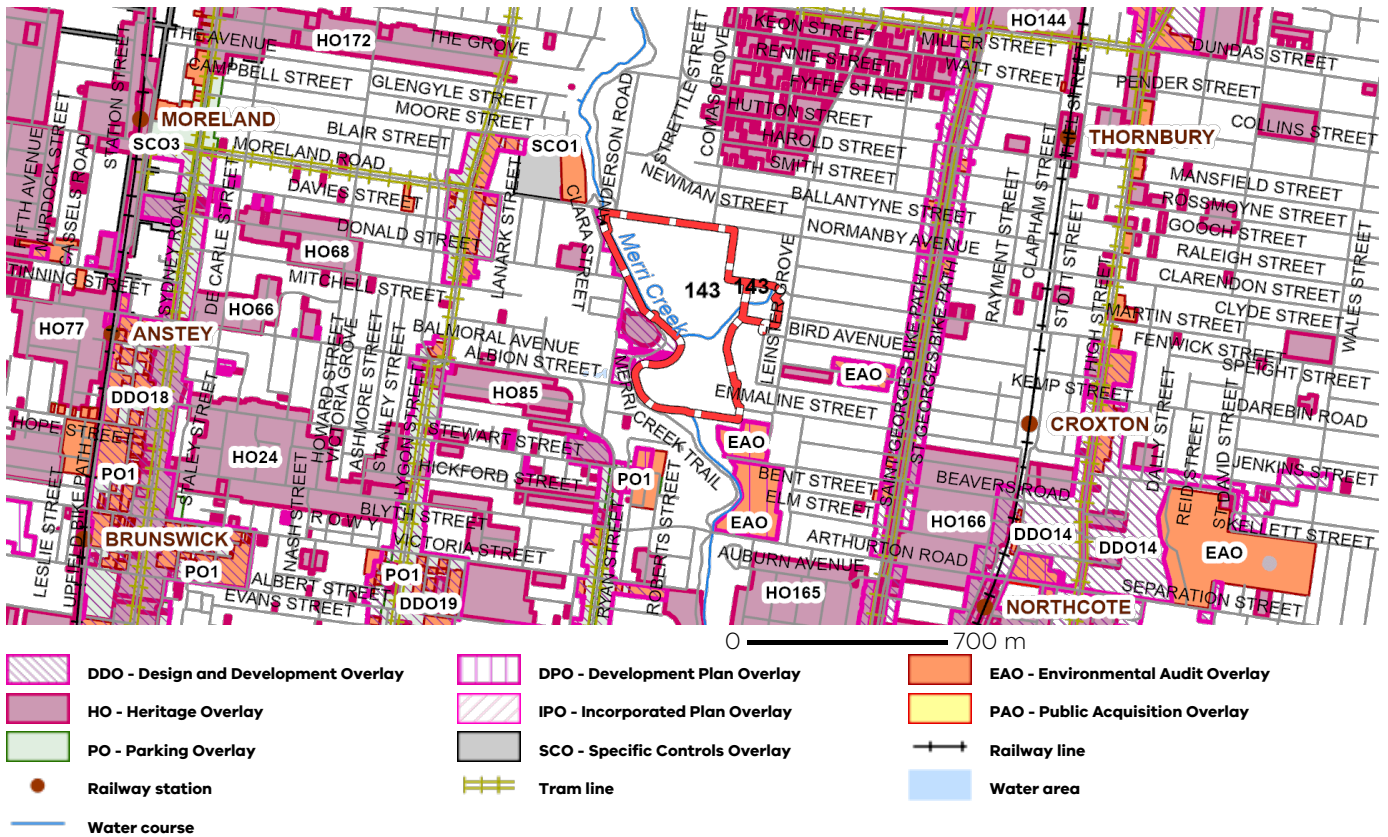
DDO - Design and Development Overlay	DPO - Development Plan Overlay	EAO - Environmental Audit Overlay
HO - Heritage Overlay	IPO - Incorporated Plan Overlay	PAO - Public Acquisition Overlay
PO - Parking Overlay	SCO - Specific Controls Overlay	Railway line
Railway station	Tram line	Water area
Water course		

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

PLANNING PROPERTY REPORT

Areas of Aboriginal Cultural Heritage Sensitivity

All or part of this property is an 'area of cultural heritage sensitivity'.

'Areas of cultural heritage sensitivity' are defined under the Aboriginal Heritage Regulations 2018, and include registered Aboriginal cultural heritage places and land form types that are generally regarded as more likely to contain Aboriginal cultural heritage.

Under the Aboriginal Heritage Regulations 2018, 'areas of cultural heritage sensitivity' are one part of a two part trigger which require a 'cultural heritage management plan' be prepared where a listed 'high impact activity' is proposed.

If a significant land use change is proposed (for example, a subdivision into 3 or more lots), a cultural heritage management plan may be triggered. One or two dwellings, works ancillary to a dwelling, services to a dwelling, alteration of buildings and minor works are examples of works exempt from this requirement.

Under the Aboriginal Heritage Act 2006, where a cultural heritage management plan is required, planning permits, licences and work authorities cannot be issued unless the cultural heritage management plan has been approved for the activity.

For further information about whether a Cultural Heritage Management Plan is required go to
http://www.aav.nrms.net.au/aavQuestion1.aspx

More information, including links to both the Aboriginal Heritage Act 2006 and the Aboriginal Heritage Regulations 2018, can also be found here - https://www.aboriginalvictoria.vic.gov.au/aboriginal-heritage-legislation

▇ Aboriginal Cultural Heritage	┼┼ Railway line	● Railway station
▦ Tram line	▬ Water area	── Water course

PLANNING PROPERTY REPORT
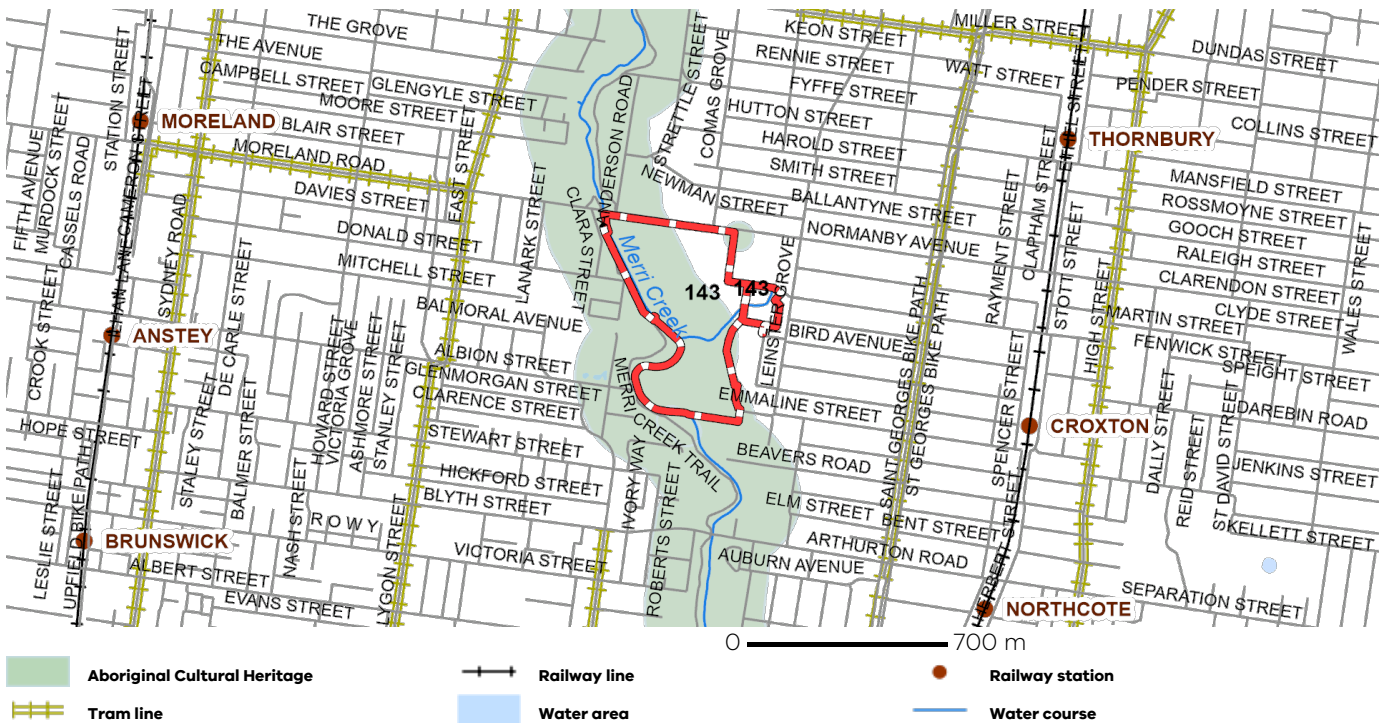
Further Planning Information

Planning scheme data last updated on 8 June 2023.

A **planning scheme** sets out policies and requirements for the use, development and protection of land.
This report provides information about the zone and overlay provisions that apply to the selected land.
Information about the State and local policy, particular, general and operational provisions of the local planning scheme
that may affect the use of this land can be obtained by contacting the local council
or by visiting https://www.planning.vic.gov.au

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the ***Planning and Environment Act 1987.***
It does not include information about exhibited planning scheme amendments, or zonings that may abut the land.
To obtain a Planning Certificate go to Titles and Property Certificates at Landata - https://www.landata.vic.gov.au

For details of surrounding properties, use this service to get the Reports for properties of interest.

To view planning zones, overlay and heritage information in an interactive format visit
https://mapshare.maps.vic.gov.au/vicplan

For other information about planning in Victoria visit https://www.planning.vic.gov.au

PLANNING PROPERTY REPORT

Environment, Land, Water and Planning — Victoria State Government

Designated Bushfire Prone Areas

This property is not in a designated bushfire prone area.
No special bushfire construction requirements apply. Planning provisions may apply.

Where part of the property is mapped as BPA, if no part of the building envelope or footprint falls within the BPA area, the BPA construction requirements do not apply.

Note: the relevant building surveyor determines the need for compliance with the bushfire construction requirements.

Designated Bushfire Prone Areas	Railway line	Railway station
Tram line	Water area	Water course

0 ——————— 700 m
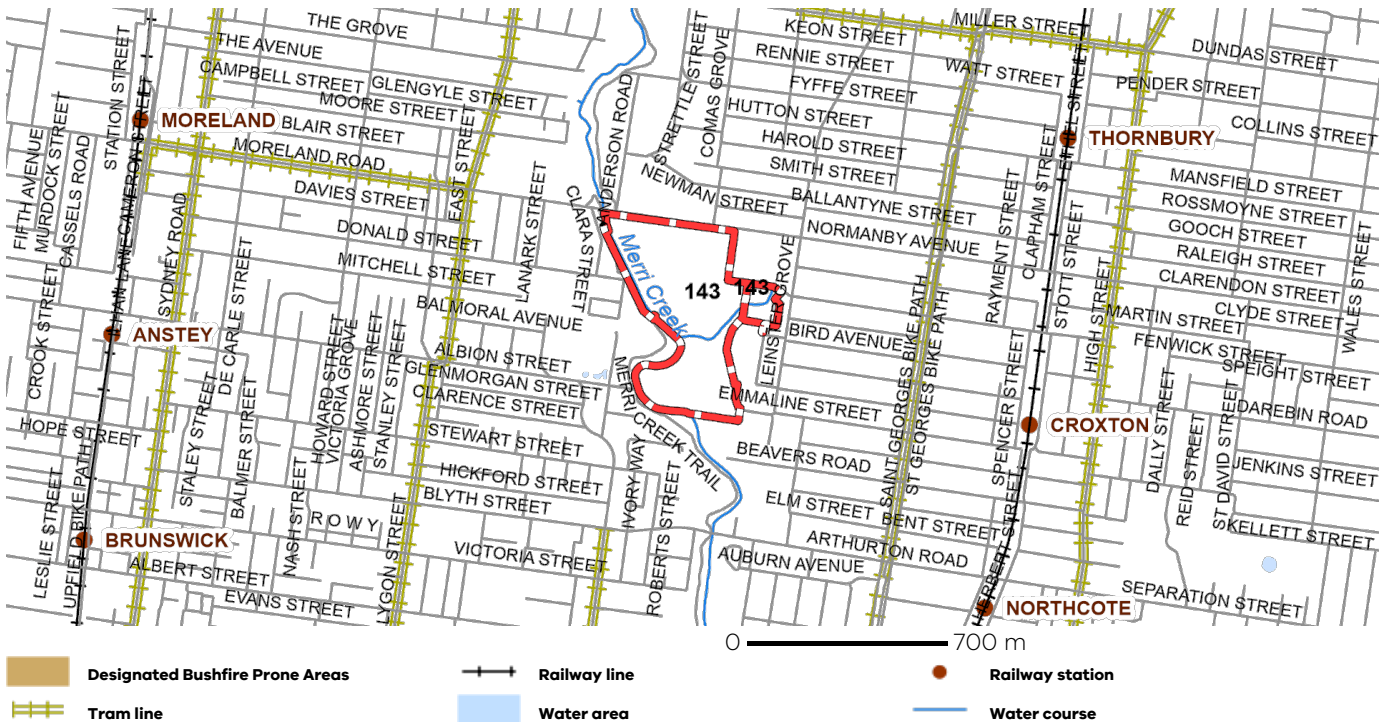
Designated BPA are determined by the Minister for Planning following a detailed review process. The Building Regulations 2018, through adoption of the Building Code of Australia, apply bushfire protection standards for building works in designated BPA.

Designated BPA maps can be viewed on VicPlan at https://mapshare.vic.gov.au/vicplan/ or at the relevant local council.

Create a BPA definition plan in VicPlan to measure the BPA.

Information for lot owners building in the BPA is available at https://www.planning.vic.gov.au.

Further information about the building control system and building in bushfire prone areas can be found on the Victorian Building Authority website https://www.vba.vic.gov.au. Copies of the Building Act and Building Regulations are available from http://www.legislation.vic.gov.au. For Planning Scheme Provisions in bushfire areas visit https://www.planning.vic.gov.au.

Native Vegetation

Native plants that are indigenous to the region and important for biodiversity might be present on this property. This could include trees, shrubs, herbs, grasses or aquatic plants. There are a range of regulations that may apply including need to obtain a planning permit under Clause 52.17 of the local planning scheme. For more information see Native Vegetation (Clause 52.17) with local variations in Native Vegetation (Clause 52.17) Schedule

To help identify native vegetation on this property and the application of Clause 52.17 please visit the Native Vegetation Information Management system https://nvim.delwp.vic.gov.au/ and Native vegetation (environment.vic.gov.au) or please contact your relevant council.

You can find out more about the natural values on your property through NatureKit NatureKit (environment.vic.gov.au)

Appendix B: Groundwater Resource Report

Groundwater Resource Report

Groundwater catchment: East Port Phillip Bay

VICGRID94 Easting: 2498839 Northing: 2415620

Depth to water table: 5 - 10m   **Water table salinity (mg/L): 501 - 1000**

Groundwater layers (Aquifers and Aquitards)	Depth below surface (m)	Groundwater salinity (mg/L)
UTB Upper Tertiary / Quaternary Basalt basalt (fractured rock)	0 - 3	Unknown
UTAF Upper Tertiary Aquifer (fluvial) sand, gravel and clay	3 - 7	Unknown
BSE Mesozoic and Palaeozoic Bedrock (basement) sedimentary (fractured rock): Sandstone, siltstone, mudstone, shale. Igneous (fractured rock): includes volcanics, granites, granodiorites.	7 - 207	1001 - 3500

There are no GMUs at this location

For further information about this report contact:

Department of Environment, Land, Water & Planning

Email: ground.water@delwp.vic.gov.au

For further information on groundwater licensing in this area contact:

Southern Rural Water Corporation

Phone: 1300 139 510

Email: srw@srw.com.au

Website: www.srw.com.au

Disclaimer

This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

Printed: 14 June 2023

Date Updated: 11 January 2019

VICTORIA State Government | Environment, Land, Water and Planning

Introduction

Groundwater is part of the water cycle. When rain or snow falls on land, some of it evaporates, some flows to streams and rivers, and some seeps into the soil. Some of the water in the soil is used by plants but some continues to move down through the soil and rock until all the pores and cracks are full of water. This is known as the water table and this water is called groundwater.

Groundwater is a finite resource that, like surface water, is allocated under the Water Act (1989). A Bore Construction Licence is required to drill for groundwater including for domestic and stock purposes. Taking and using groundwater for commercial or irrigation purposes requires an additional licence.

Purpose of this report

This report has been prepared to provide potential groundwater users with basic information about groundwater beneath their property. This includes the different geological layers, the depths of the layers and the salinity of groundwater in the layers. Information on the groundwater management units (GMU) and any associated caps on the volume that can be licensed (the PCV) are also provided.

Definitions and context

Term	Description
Groundwater Catchment	An identified area of the State within which groundwater resources are connected.
Easting / Northing	The VICGRID 94 coordinates of the spot that was selected on the interactive map.
Groundwater Salinity	Indicates the possible concentration of salts within the groundwater. The salt content indicates the possible uses of the water (see the Beneficial Use Table below). Fertilisers and other contaminants can also enter groundwater and affect its use. It is up to you to make sure that the groundwater you use is suitable for your purpose.
Aquifer	An aquifer is a layer of soil or rock which stores usable volumes of groundwater. Aquifers are generally limestones, gravels and sands, as well as some fractured rocks where the cracks in the rock are open and connected (some basalts, sandstones and limestones). How much water can be pumped from an aquifer depends on how much water is stored in pores and cracks, how well connected the pores and cracks are, and how thick the layer is. It is more likely that volumes of water for irrigation and urban water supply will come from gravels, sands, limestones and basalts that are at least 30 metres thick. Low volumes of water for domestic and stock use are likely from any aquifer greater than 10 metres thick. The advice above is a guide only, as the amount of water available can be highly variable. Actual pumping volumes can only be determined from drilling, appropriate construction and testing of a bore.
Aquitard	An aquitard is a layer of rock or soil that does not allow water to move through it easily, limiting its capacity to supply water. Aquitards are generally silts, clays and fractured rocks (where there are few cracks in the rock or the cracks are poorly connected).
Groundwater Management Unit (GMU)	A collective term for groundwater management areas (GMAs) and water supply protection areas (WSPAs). GMAs and WSPAs are defined areas and depths below the surface where rules for groundwater use may apply. WSPAs often have caps on groundwater use and plans describing how the resource is managed. GMAs usually have caps on groundwater use and may have local plans and rules. All other areas are managed directly through the Water Act (1989). Always check with your local Rural Water Corporation to be sure that the information on the GMU is correct for your specific location.
Permissible Consumptive Volume (PCV)	A cap that is set under the Water Act (1989) declaring the total volume of groundwater that may be taken from the area. Once the PCV is reached, no additional extraction can be licensed for use within the area unless traded from another groundwater licence holder.
Depth to Water Table	This is an indication of the depth at which groundwater might first be encountered when drilling a bore. The depth can vary from year to year, and from place to place and may vary significantly from that indicated in this report.

Beneficial Use Table

Salinity range (mg/L TDS)	Beneficial use as described by State Environment Protection Policy (Groundwaters of Victoria) s160							
	Potable water - preferred	Potable water - acceptable	Potable mineral water	Irrigation	Stock water	Industry	Ecosystem protection	Buildings and structures
<500	✓	✓	✓	✓	✓	✓	✓	✓
501-1000		✓	✓	✓	✓	✓	✓	✓
1001-3500			✓	✓	✓	✓	✓	✓
3501-13000					✓	✓	✓	✓
13001+						✓	✓	✓

Accessibility

If you would like to receive this publication in an alternate format, please telephone or email the DELWP Customer Service Centre 136 186, email customer.service@delwp.vic.gov.au, or via the National Relay Service on 133 677 www.relayservice.com.au.

Disclaimer

Printed: 14 June 2023

Date Updated: 11 January 2019

VICTORIA State Government | Environment, Land, Water and Planning

Appendix C: Aerial Photographs

Aerial Photographs

Client No:	Job No:	Address:
D0061	115175M	

Client:	Project:	143 Normanby Avenue, Thornbury VIC 3071
Darebin City Council	SCA AIS Northcote Public Golf Course	

prensa

Ground Floor,
5 Burwood Rd,
Hawthorn VIC 3122

prensa.com.au
P: (03) 9508 0100
F: (03) 9509 6125

1945

1967

Aerial Photographs

Client No:	Job No:	Address:
D0061	115175M	143 Normanby Avenue, Thornbury VIC 3071

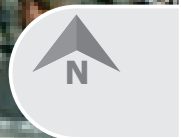| Client:	Project:	
Darebin City Council	SCA AIS Northcote Public Golf Course	

prensa

Ground Floor,
5 Burwood Rd,
Hawthorn VIC 3122

prensa.com.au
P: (03) 9508 0100
F: (03) 9509 6125

1984

2001
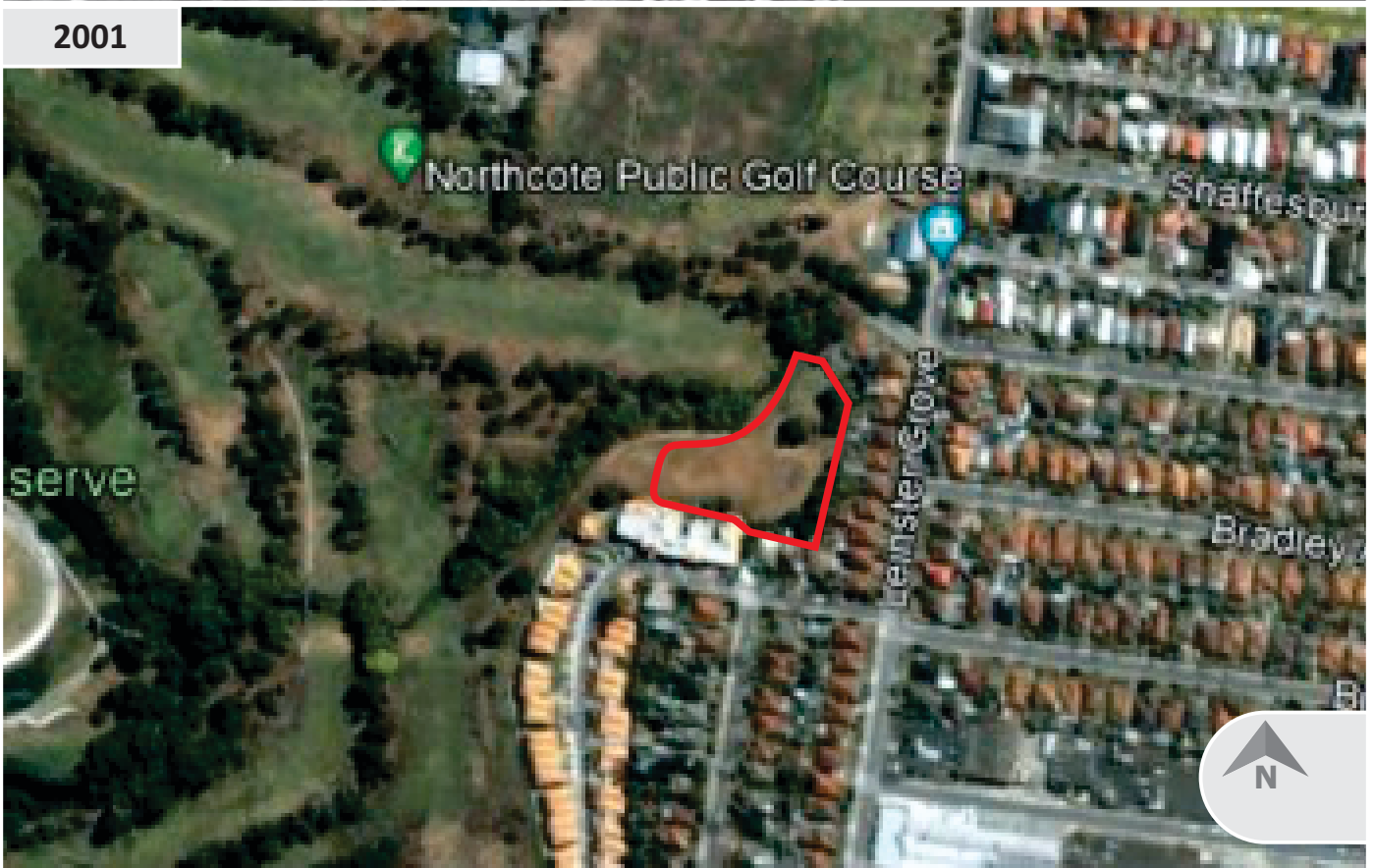
Aerial Photographs

Client No:	Job No:	Address:
D0061	115175M	143 Normanby Avenue, Thornbury VIC 3071

Client:	Project:
Darebin City Council	SCA AIS Northcote Public Golf Course

prensa

Ground Floor,
5 Burwood Rd,
Hawthorn VIC 3122

prensa.com.au
P: (03) 9508 0100
F: (03) 9509 6125

2011
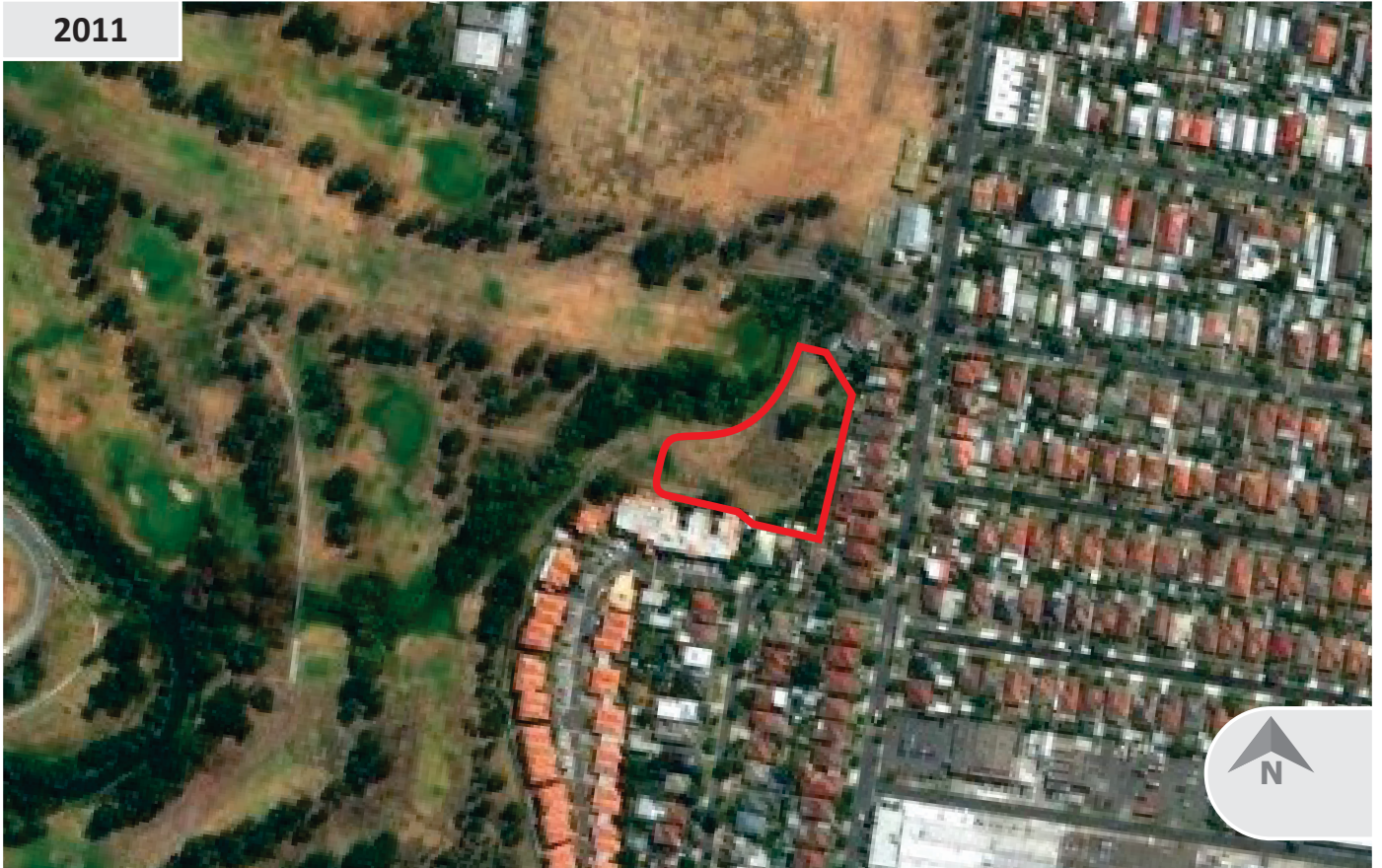
2023

Appendix D: EPA Victoria Priority Sites Register

PRIORITY SITES REGISTER

Information as at 10 Apr 2023

The Priority Sites Register is updated monthly and the information on it may not be accurate, current or complete and may be subject to change without notice.

Land contaminated by former waste disposal, industrial and similar activities is frequently discovered during changes to land use - for example, from industrial to residential use. In most cases these can be managed at the time that the change of land use occurs. Some sites however, present a potential risk to human health or to the environment and must be dealt with as a priority. Such sites are typically subject to clean-up and/or management under EPA directions.

WHAT ARE PRIORITY SITES?

Priority Sites are sites for which EPA has issued a:

• Clean Up Notice pursuant to section 62A) of the Environment Protection Act 1970
• Pollution Abatement Notice pursuant to section 31A or 31B (relevant to land and/or groundwater) of the Environment Protection Act 1970.
• Environment Action Notice pursuant to Section 274 of the Environment Protection Act 2017
• Site Management Order (related to land and groundwater) pursuant to Section 275 of the Environment Protection Act 2017
• Improvement Notice (related to land and groundwater) pursuant to Section 271 of the Environment Protection Act 2017
• Prohibition Notices (related to land and groundwater) pursuant to Section 272 of the Environment Protection Act 2017

These remedial notices are issued on the occupier or controller of the site to require active management of these sites, or where EPA believes it is in the community interest to be notified of a potential contaminated site and this cannot be communicated by any other legislative means. Sites are removed from the Priority Sites Register once all conditions of a Notice have been complied with.

Typically these are sites where pollution of land and/or groundwater presents a potential risk to human health or to the environment. The condition of these sites is not compatible with the current or approved use of the site without active management to reduce the risk to human health and the environment. Such management can include clean up, monitoring and/or institutional controls.

The Priority Sites Register does not list all sites that are known to be contaminated in Victoria. A site should not be presumed to be free of contamination just because it does not appear on the Priority Sites Register. Persons intending to enter into property transactions should be aware that many properties may have been contaminated by past land uses and EPA may not be aware of the presence of contamination. Council and other planning authorities hold information about previous land uses, and it is advisable that such sources of information should also be consulted.

DISCLAIMER

The Environment Protection Authority does not warrant the accuracy or completeness of information in this Extract and any person using or relying upon such information does so on the basis that the Environment Protection Authority shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Users of this site accept all risks and responsibilities for losses, damages, costs and other consequences resulting directly or indirectly from use of this site and information from it.

To the maximum permitted by law, the EPA excludes all liability to any person directly or indirectly from using this site and information from it.

FURTHER INFORMATION

Additional information is available from:
EPA Victoria
200 Victoria Street
Carlton VIC 3053
1300 EPA VIC (1300 372 842)
www.epa.vic.gov.au
contact@epa.vic.gov.au

Municipality	Suburb	Address	Issue	Notice Number
Bayside City	Brighton	90 Outer Crescent Brighton 3186	Former Industrial Site. Requires assessment and/or clean up	EAN-00003536
Maribyrnong City	Footscray	200 Whitehall Street Footscray 3011	Current industrial site. Requires assessment and/or clean up	EAN-00003098

Municipality	Suburb	Address	Issue	Notice Number
Latrobe City	Hazelwood	Brodribb Rd Hazelwood VIC 3840 AU	Former Industrial Site. Requires assessment and/or clean up	EAN-00002229
Surf Coast Shire	Mount Duneed	1170 Surf Coast Hwy Mount Duneed VIC 3217 AU	Contaminated soil is retained and managed onsite. Requires assessment and/or clean up	EAN-00002891-1
Brimbank City	Keilor	110a Rowan Drive, Keilor, Victoria, 3036, Australia	Industrial waste has been dumped at the site. Requires ongoing management	EAN-00001327-2
Wellington Shire	Sale	2-14 Mcmillan Street, Sale, Victoria, 3850, Australia	Former Industrial Site. Requires assessment and/or clean up	EAN-00001803-3
Mildura Rural City	Irymple	Lots 1, 2, 4, 5, 6, 7, 690 TWENTIETH STREET, Irymple, Victoria, 3498, Australia	Former Landfill. Requires ongoing management	SMO-00004368
Latrobe City	Hazelwood	Brodribb Rd Hazelwood VIC 3840 AU	Former Industrial Site. Requires assessment and/or clean up	EAN-00002228
	Collingwood	65-69 Keele Street Collingwood 3066	Current Service Station. Requires assessment and/or clean up	EAN-00003956
Latrobe City	Morwell	412 Commercial Road Morwell 3840	Former Industrial Site. Requires assessment and/or clean up	EAN-00002237
Surf Coast Shire	Anglesea	205 Coalmine Road Anglesea 3230	Former Industrial Site. Requires assessment and/or clean up	EAN-00003349
Brimbank City	BROOKLYN	84-92 Jones Road, 124 Jones Rd, 159 Bunting Road,, BROOKLYN, Victoria, 3012, AU	Current landfill. Requires assessment and/or clean up	EAN-00001233
Melbourne City	Carlton	46-78 Bouverie Street, 185-195 Queensberry Street, Carlton, Victoria, 3053, Australia	Former chemical storage facility. Requires assessment and/or clean up	EAN-00001920
Melbourne City	Port Melbourne	224 - 260 Lorimer St Port Melbourne VIC 3207 AU	Current industrial site. Requires assessment and/or clean up	EAN-00001634
Monash City	Oakleigh South	1221-1249 Centre Road Oakleigh South 3167	Former Landfill. Requires ongoing management	EAN-00002879
Yarra City	Richmond	3-21 Kent St Richmond VIC 3121 AU	Former Industrial Site. Requires ongoing management	EAN-00001064
Latrobe City	Hazelwood	Brodribb Rd Hazelwood VIC 3840 AU	Former Industrial Site. Requires assessment and/or clean up	EAN-00002231
Moreland City	Pascoe Vale	41 Derby Street Pascoe Vale 3044	Accidental spill/leak (non-industrial site). Requires assessment and/or clean up	EAN-00002298-1
Whittlesea City	Whittlesea	125 Holts Road Whittlesea 3757	Industrial waste has been dumped at the site. Requires assessment and/or clean up	EAN-00004083
Buloke Shire	Donald	Lot 41 - 45, 22 Napier Street, Donald, Victoria, 3480, Australia	Former petroleum storage site. Requires ongoing management	EAN-00002318-1
Darebin City	Reservoir	5/3b Newlands Road Reservoir 3073	Former Landfill. Requires ongoing management	EAN-00003078-1
Wellington Shire	Sale	127-141 Foster Street Sale 3850	Current Service Station. Requires assessment and/or clean up	EAN-00001241
Latrobe City	Hazelwood	Brodribb Rd Hazelwood VIC 3840 AU	Former Industrial Site. Requires assessment and/or clean up	EAN-00002227
Mildura Rural City	Mildura	Lots 1-3 and Lots 10-14, 211 Etiwanda Avenue, Mildura, Victoria, 3500, Australia	Former Landfill. Requires ongoing management	IMPN-00002782
Greater Bendigo City	Maiden Gully	Lot 2, 132 Kronk Street, Maiden Gully, Victoria, 3551, Australia	Historical deposit of mine tailings. Requires ongoing management	EAN-00001938-3
Latrobe City	Hazelwood	Brodribb Rd Hazelwood VIC 3840 AU	Former Industrial Site. Requires assessment and/or clean up	EAN-00002230
Maribyrnong City	Yarraville	325 Whitehall Street Yarraville 3013	Former Industrial Site. Requires assessment and/or clean up	EAN-00003733
Mornington Peninsula Shire	Red Hill	87 Arthurs Seat Rd, Red Hill, Victoria, 3937	Current petroleum storage site. Requires ongoing management	EAN-00003383-2
		Fritsch Holzer Park	Former Landfill. Requires ongoing management	EAN-00003277
Ballarat City	Ballarat	3350, Australia	Former Landfill. Requires ongoing management	EAN-00003859
Monash City	Clayton	1555-1615 Centre Road Clayton 3168	Current industrial site. Requires assessment and/or clean up	EAN-00002378
Hobsons Bay City	Altona North	40/42 McArthurs Road, Altona North, Victoria, 3025, Australia	Former Industrial Site. Requires assessment and/or clean up	EAN-00002226
Moreland City	Pascoe Vale	41 Derby Street Pascoe Vale 3044	Accidental spill/leak (non-industrial site). Requires assessment and/or clean up	EAN-00003294-1
Greater Bendigo City	MAIDEN GULLY	Lot 3, 102 Kronk Street, MAIDEN GULLY, VICTORIA, 3551, AUSTRALIA	Historical deposit of mine tailings. Requires ongoing management	EAN-00001763-2

Municipality	Suburb	Address	Issue	Notice Number
Hume City	Melbourne Airport	206-300 Western Avenue Melbourne Airport 3045	Former Landfill. Requires ongoing management	EAN-00002084
Hume City	Somerton	70 Cliffords Road Somerton 3062	Former Industrial Site. Requires assessment and/or clean up	EAN-00003588-1
Greater Dandenong City	Springvale	917 Princes Highway Springvale 3171	Former Industrial Site. Requires assessment and/or clean up	EAN-00002109-2
Glen Eira City	Bentleigh	58 Patterson Road Bentleigh 3204	Former Service Station. Requires ongoing management	EAN-00004112
Mildura Rural City	Irymple	2090 Fifteenth Street Irymple 3498	Current Service Station. Requires assessment and/or clean up	EAN-00003492
Moreland City	Pascoe Vale	41 Derby Street Pascoe Vale 3044	Accidental spill/leak (non-industrial site). Requires assessment and/or clean up	EAN-00003296-1
Melbourne City	Carlton	291 Nicholson Street, Carlton, Victoria, 3053, Australia	Current Service Station. Requires assessment and/or clean up	EAN-00001114-2
Hobsons Bay City	Altona	471 - 513 Kororoit Creek Rd Altona VIC 3018 AU	Current industrial site. Requires assessment and/or clean up	EAN-00002159
Moreland City	Pascoe Vale	41 Derby Street Pascoe Vale 3044	Accidental spill/leak (non-industrial site). Requires assessment and/or clean up	EAN-00003253-1
Greater Geelong City	Geelong West	34-38 Gordon Avenue Geelong West 3218	Former Industrial Site. Requires ongoing management	EAN-00003327-1
Latrobe City	Hazelwood	Brodribb Rd Hazelwood VIC 3840 AU	Former Industrial Site. Requires assessment and/or clean up	EAN-00002232
Moorabool Shire	Fiskville	4549 Geelong-ballan Road Fiskville 3342	Accidental spill/leak (non-industrial site). Requires ongoing management	EAN-00001088
Brimbank City	Brooklyn	52-60 Market Road Brooklyn 3012	Former Landfill. Requires ongoing management	EAN-00001309-3
Brimbank City	Kealba	22 Sunshine Avenue Kealba 3021	Former Landfill. Requires assessment and/or clean up	EAN-00003927
Latrobe City	Traralgon	115 Princes Street, Traralgon, Victoria, 3844, Australia	Current Service Station. Requires assessment and/or clean up	EAN-00001444
Hobsons Bay City	Newport	438 Melbourne Road Newport 3015	Current Service Station. Requires assessment and/or clean up	EAN-00002977
Greater Dandenong City	Dandenong South	21-23 Elliott Road Dandenong South 3175	Current industrial site. Requires assessment and/or clean up	EAN-00002999
Kingston City	Moorabbin	260-280 Chesterville Road Moorabbin 3189	Former Industrial Site. Requires assessment and/or clean up	EAN-00001644-2
Greater Bendigo City	Maiden Gully	Crown Allotment 14F, 79 Kronk Street, Maiden Gully, Victoria, 3551, Australia	Historical deposit of mine tailings. Requires ongoing management	EAN-00001929-2
Greater Bendigo City	Maiden Gully	110 Kronk Street, Maiden Gully, Victoria, 3551, Australia	Historical deposit of mine tailings. Requires ongoing management	EAN-00002811-1
Melbourne City Council	PORT MELBOURNE	1 WEST GATE FWY	Current Service Station. Requires assessment and/or clean up.	90007721
Hobsons Bay City Council	ALTONA NORTH	40 - 68 KYLE RD	Former Landfill. Requires assessment and/or clean up.	90010258
Nillumbik Shire Council	KANGAROO GROUND	105 GRAHAM RD	Former Landfill. Requires ongoing management.	90007781
Campaspe Shire Council	KYABRAM	Graham RD	Former Landfill. Requires ongoing management.	90007207
Hume City Council	CAMPBELLFIELD	1-71 & 2-70 BOLINDA RD	Former Landfill. Requires assessment and/or clean up.	90011586
Kingston City Council	CLAYTON SOUTH	FRASER RD	Former Landfill. Requires ongoing management.	90008726
Northern Grampians Shire Council	Stawell	TSF2 ,CA1 Sec5,CA4 Sec5, CA5 Sec5 CA6 Sec5, CA18V Sec2, CA18W Sec2,	Current Industrial Site. Requires ongoing management.	90011650
South Gippsland Shire Council	FOSTER	4090 SOUTH GIPPSLAND HWY	Former Landfill. Requires ongoing management.	90008734
Moreland City Council	Brunswick	Buildings 5 and 6 72-106 Dawson Street	Former Industrial Site. Requires assessment and/or clean up.	90010613
Moreland City Council	COBURG NORTH	46 - 54 Newlands RD	Current Service Station. Requires ongoing management.	90009742
Hume City Council	CRAIGIEBURN	PART OF LOT 5, LP 4443 CRAIGIEBURN RD	Former Landfill. Requires ongoing management.	90003475
Wellington Shire Council	FULHAM	Cnr Princes Hwy and Sale-Cowwarr Road	Current Industrial Site. Requires ongoing management.	90007151
Hobsons Bay City Council	YARRAVILLE	29 FRANCIS STREET	Current petroleum storage site. Requires ongoing management.	90007570
Swan Hill Rural City	Swan Hill	5-7 Hastings Street Swan Hill 3585	Former Service Station. Requires assessment and/or clean up	EAN-00002716

Municipality	Suburb	Address	Issue	Notice Number
Maribyrnong City	Yarraville	2a Francis Street Yarraville 3013	Former chemical storage facility. Requires assessment and/or clean up	EAN-00003503
Knox City	Ferntree Gully	47 Forest Road Ferntree Gully 3156	Current petroleum storage site. Requires ongoing management	EAN-00003074-1
Baw Baw Shire	Longwarry	31 Mackey St Longwarry VIC 3816 AU	Current industrial site. Requires ongoing management	IMPN-00001913-1
Greater Bendigo City	MAIDEN GULLY	Lot 4, 94 Kronk Street, MAIDEN GULLY, Victoria, 3551, Australia	Historical deposit of mine tailings. Requires ongoing management	EAN-00001762-2
Greater Geelong City	Corio	83b Purnell Road Corio 3214	Current Service Station. Requires ongoing management	EAN-00002529
Latrobe City	Hazelwood	Brodribb Rd Hazelwood VIC 3840 AU	Former Industrial Site. Requires assessment and/or clean up	EAN-00002234
Macedon Ranges Shire	KYNETON	2 Piper Street, KYNETON, Victoria, 3444, Australia	Former Service Station. Requires assessment and/or clean up	EAN-00002360
Yarra Ranges Shire	Coldstream	874-876 Maroondah Highway Coldstream 3770	Industrial waste has been dumped at the site. Requires assessment and/or clean up	EAN-00004036
Hobsons Bay City	Altona Meadows	306-316 Queen Street, Altona Meadows, Victoria, 3028, Australia	Current Service Station. Requires ongoing management	EAN-00002117
Manningham City	Doncaster	330 Manningham Road, Doncaster, Victoria, 3108, Australia	Industrial waste has been dumped at the site. Requires assessment and/or clean up	EAN-00003525
Greater Bendigo City	Maiden Gully	106 Kronk Street, Maiden Gully, Victoria, 3551, Australia	Historical deposit of mine tailings. Requires ongoing management	EAN-00001770-3
Brimbank City	Brooklyn	174 Old Geelong Road Brooklyn 3012	Former Landfill. Requires assessment and/or clean up	EAN-00001746
Hobsons Bay City	Altona	521-537 Kororoit Creek Road Altona 3018	Former chemical storage facility. Requires assessment and/or clean up	EAN-00003139
Bayside City	Sandringham	20 Wangara Road Sandringham 3191	Former Landfill. Requires assessment and/or clean up	EAN-00001437
Hobsons Bay City	Spotswood	144-150 Hall Street Spotswood 3015	Former Industrial Site. Requires assessment and/or clean up	EAN-00003390
Moreland City	Brunswick	225 Barkly St, Brunswick, Melbourne, Victoria, 3056, Australia	Former Industrial Site. Requires ongoing management	EAN-00004275
Greater Geelong City	Corio	232-244 Princes Highway Corio 3214	Former petroleum storage site. Requires ongoing management	EAN-00002724
Monash City	Glen Waverley	310-336 Springvale Rd Glen Waverley VIC 3150 AU	Current industrial site. Requires assessment and/or clean up	EAN-00002468-2
Brimbank City	Keilor	94a Green Gully Road, Keilor, Victoria, 3036, Australia	Industrial waste has been dumped at the site. Requires ongoing management	EAN-00001326-2
Hume City	Somerton	25 King Street Somerton 3062	Industrial waste has been dumped at the site. Requires assessment and/or clean up	EAN-00004411
Greater Shepparton City	Shepparton North	280 Daldy Road Shepparton North 3631	Current industrial site. Requires assessment and/or clean up	EAN-00002482
Greater Shepparton City	Cosgrove	205 Cosgrove-lemnos Road Cosgrove 3631	Former Landfill. Requires ongoing management	SMO-00003387
Moreland City	Fawkner	1126 Sydney Road Fawkner 3060	Current industrial site. Requires assessment and/or clean up	EAN-00001070-2
Manningham City	Doncaster East	1100 Doncaster Road Doncaster East 3109	Current Service Station. Requires assessment and/or clean up	EAN-00002043-2
Greater Bendigo City	Maiden Gully	Lot 1, 2 Coleman Close, Maiden Gully, Victoria, 3551, Australia	Historical deposit of mine tailings. Requires ongoing management	EAN-00001760-3
Brimbank City Council	DEER PARK	765 BALLARAT RD	Former Industrial Site. Requires assessment and/or clean up.	90001886
Greater Shepparton City Council	3200	CA 2108 CA 2006	Former Landfill. Requires ongoing management.	90012021
Hume City Council	CAMPBELLFIELD	MAHONEYS ROAD LANDFILL, A/PS521032G	Former Landfill. Requires assessment and/or clean up.	90003494
Casey City Council	CRANBOURNE	Lot 7, 9, 10, 11 & 12 Stevensons Rd	Former Landfill. Requires ongoing management.	90006965
Latrobe City Council	MORWELL	Lot RES1 PS449978 MARYVALE ROAD	Former Landfill. Requires ongoing management.	90007555
Melton Shire Council	COBBLEBANK	28 - 52 FERRIS RD	Former Landfill. Requires ongoing management.	90005053
Yarra Ranges Shire	KILSYTH	13 JEANETTE MAREE CT	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90011133
Kingston City	Moorabbin	422-424 South Road Moorabbin 3189	Current Service Station. Requires assessment and/or clean up	EAN-00002303-1

Municipality	Suburb	Address	Issue	Notice Number
Moyne Shire	Allansford	5331 Great Ocean Rd Allansford VIC 3277 AU	Current industrial site. Requires ongoing management	EAN-00003332
Latrobe City	Hazelwood	Brodribb Rd Hazelwood VIC 3840 AU	Former Industrial Site. Requires assessment and/or clean up	EAN-00002233
Whittlesea City	Epping	215 Cooper St Epping VIC 3076 AU	Former Landfill. Requires ongoing management	SMO-00003563
Brimbank City	Keilor	Brimbank Park, Horseshoe Bend Rd, Keilor, Melbourne, Victoria, 3036, Australia	Industrial waste has been dumped at the site. Requires ongoing management	EAN-00001328-2
Knox City	Bayswater	836 Mountain Hwy, Bayswater, Melbourne, Victoria, 3153	Former Industrial Site. Requires ongoing management	EAN-00002217
Boroondara City	Hawthorn East	Fritsch Holzer Park, Hawthorn East, VIC, 3123, Australia	Former Landfill. Requires ongoing management	EAN-00002514
Yarra Ranges Shire	Coldstream	70 Station Street Coldstream 3770	Industrial waste has been dumped at the site. Requires assessment and/or clean up	EAN-00003610
Greater Geelong City	Manifold Heights	35-37 Shannon Avenue, Manifold Heights, Victoria, 3218, Australia	Former Service Station. Requires ongoing management	EAN-00004017
Yarra Ranges Shire	Warburton	3375 Warburton Highway Warburton 3799	Former petroleum storage site. Requires assessment and/or clean up	IMPN-00001080-4
Kingston City	Aspendale	105 Nepean Highway Aspendale 3195	Former Service Station. Requires ongoing management	EAN-00001717-1
Brimbank City	Keilor	100a Green Gully Road, Keilor, Victoria, 3036, Australia	Industrial waste has been dumped at the site. Requires ongoing management	EAN-00001325-2
Greater Bendigo City	Maiden Gully	Lot 5, 88 Kronk Street, Maiden Gully, Victoria, 3551, Australia	Historical deposit of mine tailings. Requires ongoing management	EAN-00001940-2
Hume City Council	COOLAROO	82A, 82-88 MAFFRA STREET	Current Industrial Site. Requires assessment and/or clean up.	90011183
Hobsons Bay City Council	ALTONA	Crown Allotment 4D Section 5	Former Landfill. Requires ongoing management.	90011094
Macedon Ranges Shire Council	BULLENGAROOK	531 Hobbs RD	Former Landfill. Requires ongoing management.	90006708
Yarra Ranges Shire Council	Coldstream	70 Station ST	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90009941
Moyne Shire Council	PORT FAIRY	Badhams LANE	Former Landfill. Requires ongoing management.	90003625
Darebin City Council	RESERVOIR	3B Newlands Road (formerly Lot 87 Newlands Rd) which includes 3A, rear 3B	Former Landfill. Requires ongoing management.	90003508
Macedon Ranges Shire Council	KYNETON	Redesdale (Lot 24D \PP2979) RD	Former Landfill. Requires ongoing management.	90006370
Cardinia Shire Council	PAKENHAM	725 Five Mile Road	Former Landfill. Requires ongoing management.	90011249
Moreland City Council	BRUNSWICK	225 and 227-231 Barkly Street and 1-77 Amelia Street	Former Industrial Site. Requires ongoing management.	90009119
Wellington Shire Council	Maffra	Lot 2 PS 316757D 87 Powerscourt Street	Current Service Station. Requires assessment and/or clean up.	90011172
Darebin City Council	PRESTON	62 Albert ST	Former Industrial Site. Requires ongoing management.	90012245
Mornington Peninsula Shire Council	ROSEBUD WEST	119 Truemans RD	Former Landfill. Requires ongoing management.	90010398
Kingston City Council	Dingley Village	Spring Road & Rowan Road DINGLEY VILLAGE VIC 3172	Former Landfill. Requires ongoing management.	90007189
Melton Shire Council	PLUMPTON	627 - 703 PLUMPTON RD	Illegal dumping. Requires assessment and/or clean up.	90004146
Hume City Council	KEILOR	145 Annandale RD	Former Landfill. Requires ongoing management.	90007798
Kingston City Council	CLAYTON SOUTH	Cnr Deals RD & Heatherton RD	Former Landfill. Requires ongoing management.	90006972
Brimbank City Council	SUNSHINE NORTH	47 MCINTYRE RD	Former Industrial Site. Requires ongoing management.	90010479
Mornington Peninsula Shire Council	MOUNT ELIZA	254-450 MOOROODUC HWY	Former Landfill. Requires ongoing management.	90012008
Bayside City Council	Brighton	(Part) Lot 2/TP963646N (As per area shaded red in Section 5	Contaminated soil is retained and managed onsite. Requires assessment and/or clean up.	90011239
Maroondah City	Bayswater North	2-18 Canterbury Road Bayswater North 3153	Former Industrial Site. Requires assessment and/or clean up	EAN-00002325-2

Municipality	Suburb	Address	Issue	Notice Number
Glen Eira City	McKinnon	94-100 Mckinnon Road Mckinnon 3204	Current petroleum storage site. Requires assessment and/or clean up	EAN-00002771
Latrobe City Council	Traralgon	23 - 29 Shakespeare Street	Current petroleum storage site. Requires assessment and/or clean up.	90010700
Macedon Ranges Shire Council	LANCEFIELD	Baynton (Lot 16 LP208950) RD	Former Landfill. Requires ongoing management.	90005294
Alpine Shire Council	BARWIDGEE	78 MORRISONS LANE	Former Landfill. Requires ongoing management.	90008844
Latrobe City Council	Hazelwood North	Lot 2, PS533418 Monash Way	Illegal dumping. Requires assessment and/or clean up.	90008833
Casey City Council	Narre Warren	former Narre Warren Landfill 184	Former Landfill. Requires ongoing management.	90012018
Kingston City Council	CLARINDA	46 VICTORY RD	Former Landfill. Requires ongoing management.	90009835
Hobsons Bay City Council	ALTONA	401 - 435 KOROROIT CREEK RD	Current chemical storage facility. Requires ongoing management.	90010393
Darebin City Council	Preston	73 Gower St	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90012534
Melton Shire Council	PLUMPTON	627 - 703 PLUMPTON RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.	90003893
Strathbogie Shire Council	VIOLET TOWN	190 Mcdiarmids RD	Former Landfill. Requires ongoing management.	90008902
Maribyrnong City Council	YARRAVILLE	221 Whitehall ST	Former Industrial Site. Requires ongoing management.	90003331
Brimbank City Council	ALBION	Carrington Drive Reserve 137A Denton Avenue ST ALBANS	Former Landfill. Requires ongoing management.	90005541
Central Goldfields Shire Council	CARISBROOK	129 WILLIAMS RD	Former Landfill. Requires ongoing management.	90006580
Buloke Shire Council	BIRCHIP	CA 53B-D Parish of Wirmbirchip, SUNRAYSIA HWY	Former Landfill. Requires ongoing management.	90009001
Darebin City Council	PRESTON	28 - 44 ALBERT ST	Former Industrial Site. Requires assessment and/or clean up.	90012214
Melbourne City Council	PORT MELBOURNE	2 WEST GATE FWY	Current Service Station. Requires assessment and/or clean up.	90007492
Darebin City	Preston	73 Gower Street Preston 3072	Illegal dumping. Requires assessment and/or clean up	EAN-00003114
Hepburn Shire	Hepburn	Hepburn Regional Park, Bald Hill Rd, Hepburn, Victoria, 3461, Australia	Historical deposit of mine tailings. Requires assessment and/or clean up	EAN-00003192
Whittlesea City	Whittlesea	125 Holts Road Whittlesea 3757	Industrial waste has been dumped at the site. Requires assessment and/or clean up	EAN-00003262
Yarra Ranges Shire	Kilsyth	13 Jeanette Maree Court Kilsyth 3137	Industrial waste has been dumped at the site. Requires assessment and/or clean up	EAN-00003433
Hepburn Shire Council	CRESWICK	C/A45a Section 48A Township of Creswick Parish of Creswick	Former Landfill. Requires ongoing management.	90006899
Hume City Council	SUNBURY	45-65 Deverall Road / [Lot 1 PS 314696H and Lot 2 PS 410917H] / SUNBURY VIC 3429	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90012448
Mansfield Shire Council	MANSFIELD	Monkey Gully RD	Former Landfill. Requires ongoing management.	90007633
Hobsons Bay City Council	SPOTSWOOD	44 - 76 Simcock Avenue	Former petroleum storage site. Requires assessment and/or clean up.	90010294
Maribyrnong City Council	BRAYBROOK	30 - 38 SOUTH RD	Former Industrial Site. Requires assessment and/or clean up.	90010277
Wyndham City Council	WERRIBEE	470 Wests RD	Current landfill. Requires ongoing management.	90011270
Greater Dandenong City Council	Bangholme	Cnr Thompson Road and Worsley Road	Current Industrial Site. Requires ongoing management.	90007162
Brimbank City Council	SUNSHINE	19 CENTRAL AV	Current Industrial Site. Requires assessment and/or clean up.	90011874
Maribyrnong City Council	TOTTENHAM	414 SOMERVILLE RD	Current Industrial Site. Requires assessment and/or clean up.	90010850
West Wimmera Shire Council	Kaniva	Crown Allotment 11 Parish of Beewar	Illegal dumping. Requires assessment and/or clean up.	90010326
Kingston City Council	CLAYTON SOUTH	654 - 718 CLAYTON RD	Former Landfill. Requires ongoing management.	90007014
Cardinia Shire Council	GARFIELD	1110 NAR NAR GOON-LONGWARRY RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90011810
Hume City Council	CAMPBELLFIELD	MAHONEYS ROAD LANDFILL, A/PS521032G	Former Landfill. Requires ongoing management.	90003495

Municipality	Suburb	Address	Issue	Notice Number
City of Greater Dandenong	SPRINGVALE SOUTH	68-88, 98-100 and 168-222 CLARKE ROAD	Former Landfill. Requires ongoing management.	90010615
Macedon Ranges Shire Council	DARRAWEIT GUIM	Lot 8 Heaths Lane HEATHS LANE	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90011265
Brimbank City Council	Albion	SUNSHINE ENERGY PARK 570A Ballarat Road And	Former Landfill. Requires ongoing management.	90007761
East Gippsland Shire Council	BAIRNSDALE	68 GILES ST	Former Landfill. Requires ongoing management.	90006577
Hume City Council	CRAIGIEBURN	PART OF LOT 5, LP 4443 CRAIGIEBURN RD	Former Landfill. Requires ongoing management.	90010409
Hume City Council	SOMERTON	70 CLIFFORDS RD	Former Industrial Site. Requires assessment and/or clean up.	90011836
Kingston City Council	HEATHERTON	Crn Henry Street and Old Dandenong Road	Former Landfill. Requires ongoing management.	90008924
Melbourne City Council	PORT MELBOURNE	Former GM HOLDEN LTD manufacturing site as defined in ?Attachment A Premises map	Former Industrial Site. Requires assessment and/or clean up.	90010610
Brimbank City Council	KEILOR DOWNS	Green Gully RD	Former Landfill. Requires ongoing management.	90005738
Darebin City Council	NORTHCOTE	LOT 1 LP124227 56 BRICKWORKS LANE AND 92 DENNIS STREET	Former Landfill. Requires ongoing management.	90003493
Hobsons Bay City Council	NEWPORT	Underground Section Of Petroleum Pipelines That Run Under Champion Rd	Accidental spill/leak (non-industrial site). Requires ongoing management.	90011365
Mildura Rural City Council	KOORLONG	Twentieth ST	Former Landfill. Requires ongoing management.	90005267
Greater Geelong City Council	CORIO	1500 - 1580 BIDDLECOMBE AV	Former Landfill. Requires ongoing management.	90004271
South Gippsland Shire Council	LEONGATHA SOUTH	630 ROUGHEADS RD	Former Landfill. Requires ongoing management.	90006475
Greater Geelong City Council	NORLANE	60 - 80 NORTH SHORE RD	Current Industrial Site. Requires assessment and/or clean up.	90004132
Hume City Council	MICKLEHAM	135 GUNNS GULLY RD	Current Industrial Site. Requires assessment and/or clean up.	90012213
Hobsons Bay City Council	BROOKLYN	Hardie RD	Former Landfill. Requires ongoing management.	90003487
Mildura Rural City Council	MILDURA	220 - 222 TENTH ST	Current petroleum storage site. Requires ongoing management.	90012192
Brimbank City Council	BROOKLYN	52 - 60 MARKET RD	Former Landfill. Requires ongoing management.	90007782
Greater Geelong City Council	CORIO	246 - 258 Princes HWY	Former petroleum storage site. Requires ongoing management.	90011207
Campaspe Shire Council	ECHUCA	436 MCKENZIE RD	Former Landfill. Requires ongoing management.	90007220
Nillumbik Shire Council	YARRAMBAT	290 - 304 Yan Yean RD	Former Landfill. Requires ongoing management.	90007767
Bayside City Council	Brighton	322 and 326 New St and 71 Bay St	Former Industrial Site. Requires ongoing management.	90012507
Kingston City Council	OAKLEIGH SOUTH	19-71 CARROLL RD	Former Landfill. Requires ongoing management.	90007021
Yarra City Council	Fitzroy North	433 Smith St and 111-139 Queens Parade Fitzroy North	Former Industrial Site. Requires assessment and/or clean up.	90010240
Northern Grampians Shire Council	HORSHAM	8 HAMILTON ROAD & 52 HAMILTON ROAD	Current Industrial Site. Requires ongoing management.	90010862
Brimbank City Council	BROOKLYN	174 OLD GEELONG RD	Former Landfill. Requires ongoing management.	90006102
Hume City Council	MELBOURNE AIRPORT	206 - 300 WESTERN AV	Former Landfill. Requires ongoing management.	90004621
Maribyrnong City Council	TOTTENHAM	Lot 7 of Lot 3, 418 Somerville Road TOTTENHAM	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90011626
Wellington Shire Council	SALE	2-14 McMillan Street	Former Industrial Site. Requires assessment and/or clean up.	90009376
Greater Geelong City Council	NORTH GEELONG	343 - 363 MELBOURNE RD	Former Industrial Site. Requires ongoing management.	90011433
Mitchell Shire Council	SEYMOUR	Lot 1\TP41415 HUME AND HOVELL ROAD	Former Landfill. Requires ongoing management.	90007542
Wellington Shire Council	Maffra	Lot 2 PS 316757D 87 Powerscourt Street	Current Service Station. Requires assessment and/or clean up.	90010855
Greater Dandenong City Council	DANDENONG SOUTH	185 Dandenong-Hastings RD	Former Landfill. Requires ongoing management.	90004214

Municipality	Suburb	Address	Issue	Notice Number
Melton Shire Council	COBBLEBANK	43 - 67 FERRIS RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.	90012106
Hume City Council	CAMPBELLFIELD	1735 Sydney RD	Current Industrial Site. Requires assessment and/or clean up.	90012587
Maribyrnong City Council	MAIDSTONE	9 - 15 WILLIAMSON RD	Former Industrial Site. Requires assessment and/or clean up.	90003767
Hume City Council	WILDWOOD	275 KONAGADERRA RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90011955
Maribyrnong City Council	MAIDSTONE	9 - 15 WILLIAMSON RD	Former Industrial Site. Requires assessment and/or clean up.	90009654
Wyndham City Council	LAVERTON NORTH	65 LEAKES RD	Current Industrial Site. Requires assessment and/or clean up.	90006945
Darebin City Council	PRESTON	67 - 79 High ST	Former Service Station. Requires assessment and/or clean up.	90001449
Colac-Otway Shire Council	COLAC	2 - 34 BRUCE ST	Former Landfill. Requires ongoing management.	90012139
Hume City Council	WILDWOOD	275 KONAGADERRA RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90011765
Moira Shire Council	NUMURKAH	Parish Of Katunga C/a 14 Sect D Naring Rd	Former Landfill. Requires ongoing management.	90007551
Greater Shepparton City Council	SHEPPARTON EAST	35 SWAINSTON RD	Current chemical storage facility. Requires assessment and/or clean up.	90009938
Bass Coast Shire Council	RHYLL	309 COWES-RHYLL RD	Former Landfill. Requires ongoing management.	90010390
Greater Bendigo City Council	FLORA HILL	67 HAVLIN ST	Former Landfill. Requires ongoing management.	90009138
Greater Bendigo City Council	BENDIGO	8 - 32 WEEROONA AV	Contaminated soil is retained and managed onsite. Requires assessment and/or clean up.	90010745
Banyule City Council	ROSANNA	148 LOWER PLENTY RD	Current Service Station. Requires assessment and/or clean up.	90011938
Hobsons Bay City Council	SPOTSWOOD	18 - 24 Drake ST	Former petroleum storage site. Requires assessment and/or clean up.	90009763
Yarra City Council	RICHMOND	203 BURNLEY ST	Former Industrial Site. Requires assessment and/or clean up.	90009044
Greater Shepparton City Council	COSGROVE	200 COSGROVE-LEMNOS RD	Former Landfill. Requires ongoing management.	90012246
Bass Coast Shire Council	WONTHAGGI	C/a 15 Section 58 Cameron St	Former Landfill. Requires ongoing management.	90006816
Kingston City Council	CLAYTON SOUTH	Cnr Clayton & Ryans RDS	Former Landfill. Requires ongoing management.	90007125
Kingston City Council	CLAYTON SOUTH	623-633 HEATHERTON ROAD, CLAYTON SOUTH VIC 3169	Former Landfill. Requires ongoing management.	90008747
Knox City Council	WANTIRNA SOUTH	14 COPPELIA ST	Former Landfill. Requires ongoing management.	90007017
Whittlesea City Council	EPPING	480 COOPER STREET LOT 1 PS504515	Former Landfill. Requires ongoing management.	90003490
Moira Shire Council	YARRAWONGA	81 Channel RD	Former Landfill. Requires ongoing management.	90008056
Wellington Shire Council	Maffra	Lot 2 PS 316757D 87 Powerscourt Street	Current Service Station. Requires assessment and/or clean up.	90011171
Central Goldfields Shire Council	MARYBOROUGH	53 - 55 HIGH ST	Current Service Station. Requires ongoing management.	90012235
Greater Bendigo City Council	BENDIGO	Crown Allotment 432E, Section E Parish of Sandhurst, Bendigo	Former Landfill. Requires ongoing management.	90011434
Warrnambool City Council	WARRNAMBOOL	Braithwaite ST	Former Landfill. Requires ongoing management.	90007563
Latrobe City Council	Hernes Oak	SPI : 9L\PP3273 PFI : 52587509	Former Landfill. Requires ongoing management.	90007200
Kingston City Council	CLAYTON SOUTH	RYANS and DEALS RD	Former Landfill. Requires ongoing management.	90009103
Monash City Council	OAKLEIGH EAST	108 - 112 FERNTREE GULLY RD	Former Landfill. Requires ongoing management.	90006175
Moorabool Shire Council	MADDINGLEY	1 PS908919 Side Of Kerrs RD	Former Landfill. Requires ongoing management.	90003631
Whittlesea City Council	EPPING	490 COOPER ST	Former Landfill. Requires ongoing management.	90003502
Wyndham City Council	WERRIBEE	470 Wests RD	Current landfill. Requires ongoing management.	90010731
Maroondah City Council	RINGWOOD EAST	18 Mount Dandenong RD	Current Service Station. Requires ongoing management.	90011998
Yarra Ranges Shire Council	HEALESVILLE	371 MT RIDDELL RD	Former Landfill. Requires ongoing management.	90006004

Municipality	Suburb	Address	Issue	Notice Number
Mornington Peninsula Shire Council	CRIB POINT	2 Lens ST	Former Landfill. Requires ongoing management.	90003619
Ballarat City Council	MOUNT CLEAR	Whitehorse RD	Former Landfill. Requires ongoing management.	90012196
Darebin City Council	PRESTON	194 - 202 BELL ST	Former Industrial Site. Requires assessment and/or clean up.	90006966
Yarra Ranges Shire Council	LILYDALE	UNITS 1 & 2 / 200 LEONARD ROAD	Former Landfill. Requires ongoing management.	90006191
Baw Baw Shire Council	TRAFALGAR SOUTH	200 GILES RD	Former Landfill. Requires ongoing management.	90007302
Whitehorse City Council	BOX HILL	14 Federation ST	Former Landfill. Requires ongoing management.	90003499
Greater Dandenong City Council	SPRINGVALE SOUTH	81 - 143 CLARKE RD	Former Landfill. Requires ongoing management.	90003693
Melton Shire Council	COBBLEBANK	43 - 67 FERRIS RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90008182
Kingston City Council	CLARINDA	176 - 184 ELDER ST	Former Landfill. Requires ongoing management.	90003610
Hume City Council	CAMPBELLFIELD	MAHONEYS ROAD LANDFILL, A/PS521032G	Former Landfill. Requires ongoing management.	90003496
Hume City Council	Greenvale	Mitchell Lasry Quarry 555 Mickleham Road	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90007757
Hume City Council	CAMPBELLFIELD	1-71 & 2-70 BOLINDA RD	Former Landfill. Requires ongoing management.	90007850
Brimbank City Council	SYDENHAM	362 SYDENHAM RD	Former Landfill. Requires ongoing management.	90003753
Hobsons Bay City Council	ALTONA	541 - 583 Kororoit Creek RD	Former chemical storage facility. Requires assessment and/or clean up.	90010493
Campaspe Shire Council	DIGGORA	ODONNELL RD	Former Landfill. Requires ongoing management.	90006552
Hume City Council	BULLA	315 Loemans RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90000177
Kingston City Council	HEATHERTON	16 BALL ROAD	Former Landfill. Requires ongoing management.	90012101
Maribyrnong City Council	YARRAVILLE	2A FRANCIS ST	Former Industrial Site. Requires assessment and/or clean up.	90009551
Whittlesea City Council	EPPING	215 COOPER ST	Former Landfill. Requires ongoing management.	90011696
Kingston City Council	DINGLEY	370 - 418 Old Dandenong RD	Former Landfill. Requires ongoing management.	90008100
South Gippsland Shire Council	AGNES	614 BARRY RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	90009029
Greater Dandenong City Council	DANDENONG SOUTH	Greens Road GREENS RD	Current waste water treatment plant. Requires ongoing management.	90006097
Hobsons Bay City Council	ALTONA NORTH	40 - 68 KYLE RD	Former Landfill. Requires ongoing management.	90003527
Knox City Council	WANTIRNA SOUTH	1180 HIGH STREET RD 251 GEORGE ST	Former Landfill. Requires ongoing management.	90006480
Maribyrnong City Council	YARRAVILLE	1 - 3 High ST	Former Industrial Site. Requires ongoing management.	90000134
Mornington Peninsula Shire Council	TYABB	15-21 MCKIRDYS RD	Former Landfill. Requires ongoing management.	90007677

Appendix E: Adopted Soil Investigation Levels, Screening Levels and Criteria

Environmental Value – Land Dependent Ecosystems and Species

NEPM (ASC) – Ecological Investigation Levels / Ecological Screening Levels

The NEPM (ASC) provides Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for the protection of terrestrial ecosystems for three (3) generic land use settings, as follows:

- Areas of ecological significance (i.e. national parks, state parks, wilderness areas and designated conservation areas);
- Urban residential and public open space; and
- Commercial and industrial land uses.

EILs/ESLs are the concentrations of contaminants above which further appropriate investigation and evaluation will be required. EILs are derived based on specific soil physicochemical properties and land use scenarios and generally apply to the top 2.0 m of soil profile. The NEPM (ASC) provides a framework for deriving site-specific EILs for arsenic, dichlorodiphenyltrichloroethane (DDT), naphthalene, lead, copper, nickel and zinc using the National Environment Protection Council's (NEPC) *Ecological Investigation Level Calculation Spreadsheet,* 2010. Prensa has derived EILs for the Site using the average of the physiochemical properties measured during the assessment works. A summary of the input parameters used has been presented in the Table below.

Parameter	Fill	Natural Soil
Clay Content (%)	15	18
pH	7.7	7.6
Cation Exchange Capacity (cmol/kg)	54	29.1
Organic Carbon (%)	1.5	6.2

Outputs of the EIL derivation spreadsheets has been provided as **Appendix F.**

ESLs are applicable for petroleum hydrocarbons including various TRH fractions, BTEX and benzo(a)pyrene. Prensa have derived an appropriate ESL for the Site based on the soil texture identified during intrusive works (i.e. fine soil).

International Guidelines Values for Protection of Terrestrial Ecosystems

In lieu of NEPM (ASC) EILs/ESLs for various COPC, cognisance has also been given to the guideline values presented in a number of international publications. Guideline values have been adopted in accordance with the following hierarchy:

- Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines (SQG) for the Protection of the Environment and Human Health were adopted to assess risk to ecosystems for contaminants which reported detectable concentrations.

Adopted Guideline Values

For the purpose of this assessment, the following EILs and ESLs were be adopted, based on the public open space use of the Site:

- NEPM (ASC) EILs for the protection of terrestrial ecosystems in an urban residential/public open space land use setting; and
- NEPM (ASC) ESLs for the protection of terrestrial ecosystems in an urban residential/public open space land use setting.

Environmental Value – Human Health

NEPM (ASC) - Health Investigation Levels / Health Screening Levels

The NEPM (ASC) provides HILs have been developed for a broad range of inorganic and organic substances. The HILs are applicable for assessing human health risk via relevant pathways of exposure. The HILs are generic to all soil types and apply generally to a depth of 3.0 m below the surface for residential use. Site-specific conditions should determine the depth to which HILs apply for other land uses. Investigation level values are provided for four (4) generic land use settings as follows:

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

HSLs have been developed for petroleum compounds and fractions and are applicable to assessing human health risk via the vapour inhalation pathway. The HSLs depend on specific soil physicochemical properties, land use scenarios, and the characteristics of building structures. They apply to different soil types and depths extending from the ground surface to < 4 mBGL.

CRC CARE 2011 - Health Screening Levels

The CRC Care Technical Report No. 10, *Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater*, 2011 (CRC 2011) provides the framework for the conduct of petroleum vapour intrusion assessments resulting from contamination of soil and/or groundwater by petroleum hydrocarbons.

The NEPM (ASC) HSLs for vapour intrusion were derived from this document. Prensa has also considered the HSLs prescribed in the CRC 2011 for assessing risks from petroleum hydrocarbons through the dermal contact exposure pathway. Based on the proposed development of the Site (i.e. public open space) and in consideration of unrestricted land use and the protection of construction/maintenance workers performing intrusive works at the Site, the application of HSL 'C' were adopted for consideration of direct contact with soil.

NEPM (ASC) - Management Limits

In addition to the application of the HSLs and ESLs, the NEPM (ASC) also provides Management Limits for TRH fractions (F1 to F4), which are used to consider the physical and aesthetic risks of light non-aqueous phase liquid (LNAPL) resulting from effects of petroleum hydrocarbons. Application of the Management Limits requires consideration of site-specific factors, such as depth of building basements, services and/or groundwater. Specifically, the management limits are intended to be used as a screening value to assess the likelihood of concentrations of contaminants resulting in:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosive hazards; and
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services by hydrocarbons.

Therefore, the management limits are adopted, in part, to evaluate risks to human health.

Adopted Guideline Values

For the purpose of this assessment, the following HILs and HSLs are proposed to be adopted, based on the public open space use of the Site:

- NEPM (ASC) HIL 'C' to assess whether contamination may be present that may pose a health risk to human receptors if the Site remains as urban residential/public open space; and
- NEPM (ASC) HSL 'C' to assess whether petroleum hydrocarbon contamination may be present that may pose a risk to human receptor through the vapour inhalation exposure pathway if the Site remains as urban residential/public open space;
- CRC CARE 'C' to assess whether petroleum hydrocarbon contamination may be present that may pose a risk to human receptor through the dermal contact exposure pathway if the Site remains as urban residential/public open space; and
- NEPM (ASC) Management Limits for urban residential/public open space land use setting to assess for the potential generation of LNAPL and the associated potential health effects.

Environmental Value – Buildings & Structures

Part 4 of the ERS (2021) states that the objective for this environmental value, "*Land that is not corrosive to or otherwise adversely affecting the integrity of structures or building materials.*" The potential for the condition of soils at the Site to adversely impact upon buildings and structures may include elevated sulphate and chloride concentrations or acidic (low pH) soil conditions which are detrimental to some concrete and steel structures.

Australian Standard 2159 *Piling – Design and Installation* (AS2159, 2009) was considered in assessing this environmental value. The standard provides the following screening tool to assess corrosion potential on concrete and steel piles.

Exposure Classification for Concrete Piles					
Sulfates (SO$_4$) (ppm)		pH	Chloride (ppm) Groundwater	Exposure Classification	
Soil	Groundwater			Condition A[1]	Condition B[2]
<5000	<1,000	>5.5	<6,000	Mild	Non-Aggressive
5,000-10,000	1,000-3,000	4.5-5.5	6,000-12,000	Moderate	Mild
10,000-20,000	3,000-10,000	4-4.5	12,000-30,000	Severe	Moderate
>20,000	>10,000	<4	>30,000	Very Severe	Severe

[1] High permeability soils (e.g., sands and gravels) which are in groundwater

[2] Low permeability soils (e.g., silts and clays) or all soils above groundwater

Exposure Classification for Steel Piles					
pH	Chlorides (ppm)		Resistivity (ohm.cm)	Exposure Classification	
	Soil	Groundwater		Condition A[1]	Condition B[2]
>5.5	<5,000	<1,000	>5,000	Non-Aggressive	Non-Aggressive
4-5	5,000-20,000	1,000-10,000	2,000-5,000	Mild	Non-Aggressive
3-4	20,000-50,000	10,000-20,000	1,000-2,000	Moderate	Mild
<3	>50,000	>20,000	<1,000	Severe	Moderate

[1] High permeability soils (e.g., sands and gravels) which are in groundwater

[2] Low permeability soils (e.g., silts and clays) or all soils above groundwater

The NEPM (ASC) Management Limits discussed above also provide a quantitative investigation level for evaluation the potential for LNAPL generation which may impact upon buried infrastructure. Therefore, the Management Limits have also been adopted, in part, to evaluate risks to this environmental value.

Environmental Value – Aesthetics

Part 4 of the ERS (2021) states, states that in relation to the Aesthetics environmental value, the objective is, "*Land that is not offensive to the senses of human beings,*" This environmental value has therefore been primarily evaluated with field observations recorded during the works. Consideration has been given to the following condition of soil to assess risks to this environmental value:

- Discolouration and staining;
- Offensive odours; and
- Presence of wastes (i.e. metals, plastics, building debris, etc.).

The NEPM (ASC) Management Limits discussed above also provide a quantitative investigation level for evaluation the potential for LNAPL generation which may impact upon aesthetics. Therefore, the Management Limits have also been adopted, in part, to evaluate risks to this environmental value.

Environmental Value – Production of Food, Flora & Fibre

Part 4 of the ERS (2021) states that in relation to the Production of Food, Flora & Fibre environmental value, the objectives are:

- "*The levels specified in the Food Standards Code detected in any food, flora or fibre produced at the site.*
- *Levels that do not adversely affect produce quality or yield.*"

Soil quality objectives are not currently available for the protection of this environmental value. In their absence, guideline values adopted to assess risks to the *Land Dependent Ecosystems and Species* environmental value have been adopted which is considered appropriate.

Waste Classification Criteria

Part 4.2 of the Environment Protection Regulations 2021 specifies the process for classifying waste (which includes soil surplus to project requirements) and makes specific reference to EPAV Publication 1828.2, *Waste disposal categories – characteristics and thresholds*. EPAV Publication 1828.2 specifies the criteria used to determine whether waste soil is classified as one of the following:

- Fill Material (an Industrial Waste)
- Category D Contaminated Soil (a Reportable Priority Waste);
- Category C Contaminated Soil (a Reportable Priority Waste);
- Category B Contaminated Soil (a Reportable Priority Waste);
- Category A Contaminated Soil (a Reportable Priority Waste); or
- Soil containing asbestos only.

In addition, cognisance has been given to the following additional EPA Victoria publications, in consideration of the likely off-site disposal classification of soil or rock:

- Victorian Government, Determination S301 Fill Material, June 2021; and
- Victorian Government, Determination S302 Specifications for Receiving Recycled Aggregates, June 2021.

Appendix F: EIL Derivation Spreadsheets

115175M: SCA AIS Northcote Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

EIL Calculator: Fill Soil (Copper)

prensa

Inputs
Select contaminant from list below
Cu
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
54
Enter soil pH (calcium chloride method) (values from 1 to 14)
7.7
Enter organic carbon content (%OC) (values from 0 to 50%)
1.5
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
2.9
or for aged ABCs only
Enter State (or closest State)
VIC
Enter traffic volume (high or low)
low

Outputs

Land use	Cu soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	70	85
Urban residential and open public spaces	130	240
Commercial and industrial	190	350

115175M: SCA AIS Northcote Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

EIL Calculator: Natural Soil (Copper)

prensa

Inputs

Select contaminant from list below

Cu

Below needed to calculate fresh and aged ACLs

Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)

29.1

Enter soil pH (calcium chloride method) (values from 1 to 14)

7.6

Enter organic carbon content (%OC) (values from 0 to 50%)

6.2

Below needed to calculate fresh and aged ABCs

Measured background concentration (mg/kg). Leave blank if no measured value

or for fresh ABCs only

Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration

1.2

or for aged ABCs only

Enter State (or closest State)

VIC

Enter traffic volume (high or low)

low

Outputs

Land use	Cu soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	60	80
Urban residential and open public spaces	120	230
Commercial and industrial	180	330

115175M: SCA AIS Northcote Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

EIL Calculator: Fill Soil (Chromium III)

prensa

Inputs
Select contaminant from list below
Cr_III
Below needed to calculate fresh and aged ACLs
Enter % clay (values from 0 to 100%)
15
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
2.9
or for aged ABCs only
Enter State (or closest State)
VIC
Enter traffic volume (high or low)
low

Outputs		
Land use	**Cr III soil-specific EILs**	
	(mg contaminant/kg dry soil)	
	Fresh	**Aged**
National parks and areas of high conservation value	100	160
Urban residential and open public spaces	220	460
Commercial and industrial	340	770

115175M: SCA AIS Northcote Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

EIL Calculator: Natural Soil (Chromium III)

prensa

Inputs
Select contaminant from list below
Cr_III
Below needed to calculate fresh and aged ACLs
Enter % clay (values from 0 to 100%)
18
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
1.2
or for aged ABCs only
Enter State (or closest State)
VIC
Enter traffic volume (high or low)
low

Outputs		
Land use	**Cr III soil-specific EILs**	
	(mg contaminant/kg dry soil)	
	Fresh	**Aged**
National parks and areas of high conservation value	80	170
Urban residential and open public spaces	210	490
Commercial and industrial	340	820

115175M: SCA AIS Northcote Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

EIL Calculator: Fill Soil (Nickel)

prensa

Inputs
Select contaminant from list below
Ni
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
54
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
2.9
or for aged ABCs only
Enter State (or closest State)
VIC
Enter traffic volume (high or low)
low

Outputs		
Land use	**Ni soil-specific EILs**	
	(mg contaminant/kg dry soil)	
	Fresh	**Aged**
National parks and areas of high conservation value	35	95
Urban residential and open public spaces	180	520
Commercial and industrial	340	890

115175M: SCA AIS Northcote Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

EIL Calculator: Natural Soil (Nickel)

prensa

Inputs

Select contaminant from list below

Ni

Below needed to calculate fresh and aged ACLs

Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)

29.1

Below needed to calculate fresh and aged ABCs

Measured background concentration (mg/kg). Leave blank if no measured value

or for fresh ABCs only

Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration

1.2

or for aged ABCs only

Enter State (or closest State)

VIC

Enter traffic volume (high or low)

low

Outputs

Land use	Ni soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	**Aged**
National parks and areas of high conservation value	20	65
Urban residential and open public spaces	110	350
Commercial and industrial	220	590

115175M: SCA AIS Northcote Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

EIL Calculator: Filll Soil (Zinc)

prensa

Inputs
Select contaminant from list below
Zn
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
54
Enter soil pH (calcium chloride method) (values from 1 to 14)
7.7
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
2.9
or for aged ABCs only
Enter State (or closest State)
VIC
Enter traffic volume (high or low)
low

Outputs

Land use	Zn soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	**Aged**
National parks and areas of high conservation value	170	370
Urban residential and open public spaces	610	1600
Commercial and industrial	950	2400

115175M: SCA AIS Northcote Golf Course
D0061: Darebin City Council
Northcote Public Golf Course
146 Normanby Avenue, Thornbury, Victoria

EIL Calculator: Natural Soil (Zinc)

prensa

Inputs
Select contaminant from list below
Zn
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
29.1
Enter soil pH (calcium chloride method) (values from 1 to 14)
7.6
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
1.2
or for aged ABCs only
Enter State (or closest State)
VIC
Enter traffic volume (high or low)
low

Outputs		
Land use	**Zn soil-specific EILs**	
	(mg contaminant/kg dry soil)	
	Fresh	**Aged**
National parks and areas of high conservation value	100	240
Urban residential and open public spaces	370	970
Commercial and industrial	580	1500

Appendix G: Soil Test Pit Logs

TEST PIT LOG TP01

Client: City of Darebin	**Date of Sampling:** 24/05/2023	**Depth of Hole:** 1 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Hand Auger and Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0.1	Hand Auger and shovel		**FILL: Sandy SILT (0.0 - 0.3 m bgl)** Dark brown, soft, slightly moist to moist, zero plasticity with organic decomposers, plastic golf tees, rootlets, gravels (~3-5 cm) and large rocks (up to 20 cm). Becomes more clayey at 0.2 m bgl.	TP01_0.1	
0.2					
0.3			**FILL: Sandy CLAY (0.3 - 0.5 m bgl)** Dark brown, firm, slightly moist, medium to high plasticity with organic decomposers, brown mottle, minor brick fragments (~5 cm), minor gravels (~2 cm) plastic golf tee.		
0.4					
0.5			**FILL: Sandy Silty CLAY (0.5 - 1.0 m bgl)** Light brown, moderately dense, slightly moist with minor brown mottle Becomes more clayey with depth.	TP01_0.5	0.0
0.6	Hand Auger			TP01_0.6	0.0
0.7					
0.8					
0.9					
1			End of Hole at 1.0 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TEST PIT LOG TP02

Client: City of Darebin	**Date of Sampling:** 24/05/2023	**Depth of Hole:** 0.7 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Hand Auger and Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0.1	Hand Auger and shovel		FILL: Sandy Silty CLAY (0.0 - 0.35 m bgl) Dark brown, soft, slightly moist, low plasticity, minor plastics, rootlets, grey mottling, orange and red mottle at 0.3 m bgl becomes more clayey at 0.2 m bgl.	TP02_0.1	
0.2					
0.3					
0.4			FILL: CLAY (0.35 - 0.7 m bgl) Grey, firm, slightly moist to moist, medium to high plasticity with minor hydrocarbon odours.		
0.5					
0.6	Hand Auger			TP02_0.6	0.0
0.7				TP02_0.7	0.2
0.8			End of hole at 0.7 m bgl. Refusal on rock.		
0.9					

Disclaimer This log is intended for environmental not geotechnical purposes.

TESTPIT LOG TP03

prensa

Client: City of Darebin	**Date of Sampling:** 24/05/2023
Job Number: 115175M	**Rig/Machine:**
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Hand Auger and Shovel
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm

Depth of Hole: 0.9 m bgl
Drawn By: SEB
Approved By: PXB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
	Hand Auger and shovel		FILL: Sandy SILT (0.0 - 0.3 m bgl) Brown, soft, slightly moist, zero plasticity with clay inclusions, minor glass, significant rootlets, plastic golf tee and significant gravels (~5 - 10 cm) at 0.3 m bgl.	TP03_0.1	
0.3			FILL: Sandy CLAY (0.3 - 0.5 m bgl) Light brown, soft, slightly moist, medium to high plasticity with rootlets and gravels.		
0.5			NATURAL: CLAY (0.5 - 0.8 m bgl) Grey, very soft, moist, high plasticity with brown and orange mottle.	TP03_0.55	0.0
	Hand Auger			TP03_0.8	0.0
0.8			NATURAL: CLAY (0.8 - 0.9 m bgl) Grey, very soft to firm, slightly moist, high plasticity with brown and orange mottle.		
0.9			End of Hole at 1.0 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TEST PIT LOG TP04

prensa

Client: City of Darebin	**Date of Sampling:** 24/05/2023	**Depth of Hole:** 0.5 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
	Shovel		FILL: Sandy SILT (0.0 - 0.2 m bgl) Brown, soft, slightly moist, low plasticity, clay inclusions, gravels (~10 cm). FILL: Sandy silty CLAY (0.2 - 0.5 m bgl) Brown, firm, slightly moist, low to medium plasticity. End of Hole at 0.5 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TEST PIT LOG TP05

prensa

Client: City of Darebin	**Date of Sampling:** 24/05/2023	**Depth of Hole:** 1 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Hand Auger and Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS: QC01 and QC02 collected at 0.5 m bgl.

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
			FILL: Sandy SILT (0.0 - 0.2 m bgl) Brown, soft, dry, low to zero plasticity with clay inclusions.		
0.1	Hand Auger and Shovel			TP05_0.1	
0.2			FILL: Sandy silty CLAY (0.2 - 0.5 m bgl) Brown, hard, dry, zero plasticity, moderate tin, glass and plastic waste.		
0.3					
0.4					
0.5			FILL: Silty CLAY (0.5 - 1.0 m bgl) Brown, stiff, dry, zero plasticity with minor rootlets.	TP05_0.5	0.1
0.6				TP05_0.6	0.0
0.7	Hand Auger				
0.8					
0.9					
1				TP05_1.0	0.1
			End of Hole at 1.0 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TESTPIT LOG TP06

Client: City of Darebin	**Date of Sampling:** 25/05/2023	**Depth of Hole:** 0.5 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
	Shovel		FILL: Sandy SILT (0.0 - 0.2 m bgl) Brown, soft, dry, zero plasticity, rootlets, minor gravels (~2-3 cm). FILL: Sandy silty CLAY (0.2 - 0.5 m bgl) Dark brown, soft to firm, dry, zero to low plasticity with red mottle, moderate ceramics, plastic golf tee and minor brick fragments. End of Hole at 0.5 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TESTPIT LOG TP07

prensa

Client: City of Darebin	**Date of Sampling:** 25/05/2023	**Depth of Hole:** 1 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Hand Auger and Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS: QC03 and QC04 collected at 0.5 m bgl.

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
	Shovel and hand auger		FILL: Sandy SILT (0.0 - 0.1 m bgl) Dark brown, soft, dry, zero plasticity, significant gravels (~3 cm), minor glass and tile fragments and rootlets.		
0.1				TP07_0.1	
			FILL: Sandy silty CLAY (0.1 - 0.3 m bgl) Dark brown, soft to firm, dry to slightly moist, low to medium plasticity with organic decomposers, minor gravels, moderate tile and ceramic fragments and suspected asbestos containing materials at 0.3 m.		
0.2					
0.3			FILL: Sandy silty CLAY (0.3 - 0.5 m bgl) Dark brown, soft to firm, dry to slightly moist, low to medium plasticity with minor rootlets.		
0.4					
0.5				TP07_0.5	0.0
	Hand Auger		FILL: CLAY (0.5 - 1.0 m bgl) Dark brown to grey, soft to firm, dry to slightly moist, medium plasticity.		
0.6					
0.7					
0.8				TP07_0.8	0.0
0.9					
1				TP07_1.0	0.0
			End of Hole at 1.0 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TESTPIT LOG TP08

Client: City of Darebin	**Date of Sampling:** 25/05/2023
Job Number: 115175M	**Rig/Machine:**
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Shovel
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm

Depth of Hole: 0.5 m bgl
Drawn By: SEB
Approved By: PXB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
	Shovel		**FILL: Sandy SILT (0.0 - 0.2 m bgl)** Dark brown, soft, dry to slightly moist, zero plasticity with roots, rootlets, organic decomposers, moderate gravels (~3-5 cm).		
			FILL: Sandy silty CLAY (0.2 - 0.5 m bgl) Dark brown, soft to firm, dry to slightly moist, zero plasticity, rootlets, minor gravels, large rocks (~20 cm), glass fragments and rusted metal waste.		
			End of Hole at 0.5 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TEST PIT LOG TP09

prensa

Client: City of Darebin	**Date of Sampling:** 25/05/2023	**Depth of Hole:** 1 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Hand Auger and Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0.1	Shovel and hand auger		FILL: gravelly sandy SILT (0.0 - 0.2 m bgl) Brown, soft, dry, zero plasticity.	TP09_0.1	
0.2			FILL: Sandy silty CLAY (0.2 - 0.3 m bgl) Brown, soft, dry to slightly moist, zero to low plasticity, significant gravels, moderate metal, tile and concrete fragments.		
0.3 0.4			FILL: Sandy silty CLAY (0.3 - 0.5 m bgl) Light brown, soft, dry, zero plasticity with moderate nail, brick and gas works waste.		
0.5			FILL: Gravelly sandy CLAY (0.5 - 0.85 m bgl) Light brown, soft, dry, zero plasticity with minor tile fragments.	TP09_0.5	
0.6 0.7 0.8	Hand Auger				
0.9				TP09_0.8	
1			End of Hole at 1.0 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TEST PIT LOG TP10

prensa

Client: City of Darebin	**Date of Sampling:** 25/05/2023
Job Number: 115175M	**Rig/Machine:**
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Shovel
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm

Depth of Hole: 0.5 m bgl
Drawn By: SEB
Approved By: PXB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
	Shovel		FILL: Sandy silty CLAY (0.0 - 0.3 m bgl) brown to light grey, soft, dry to slightly moist, zero plasticity with moderate glass, ceramics, a seashell, rootlets and rocks (~10 cm).		
			FILL: Silty CLAY (0.3 - 0.5 m bgl) Dark brown, soft to firm, slightly moist, zero plasticity with minor rootlets and minor brick and gas works waste.		
			End of Hole at 0.5 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TEST PIT LOG TP11

Client: City of Darebin	**Date of Sampling:** 25/05/2023	**Depth of Hole:** 0.9 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Hand Auger and Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
	Hand auger and shovel		FILL: Silty CLAY (0.0 - 0.3 m bgl) Dark brown, soft, slightly moist, low plasticity with roots, rootlets and minor sand inclusions.		
0.1				TP11_0.1	
0.2					
0.3			FILL: Sandy silty CLAY (0.3 - 0.5 m bgl) Dark brown, soft, slightly moist, low plasticity with minor plasterboard fragments.		
0.4					
0.5			FILL: Silty SAND (0.5 - 0.9 m bgl) Light brown, very loose, slightly moist with minor brick and plasterboard fragments and minor gravels (~3 cm).		
	Hand auger			TP011_0.55	0.0
0.6					
0.7					
0.8					
0.9				TP011_0.9	0.0
			End of Hole at 0.9 m bgl. Refusal on rock.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TESTPIT LOG TP12

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
	Shovel		FILL: Silty CLAY (0.0 - 0.5 m bgl) Dark brown, firm, dry, zero plasticity with sub-angular rocks (~10 cm), organic decomposers, rootlets, minor brick fragments, gas works waste, rusted metal and ceramics.		
0.5			End of Hole at 0.5 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TEST PIT LOG TP13

Client: City of Darebin	**Date of Sampling:** 25/05/2023	**Depth of Hole:** 0.8 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Hand Auger and Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
	Shovel and hand auger		FILL: Silty CLAY (0.0 - 0.2 m bgl) Dark brown, soft, dry, low plasticity with minor sand inclusions and moderate gravels.	TP13_0.1	
			FILL: Silty CLAY (0.2 - 0.5 m bgl) Brown, firm, slightly moist, medium plasticity with rootlets, plastic and brick fragments.		
	Hand auger		FILL: CLAY (0.5 - 0.8 m bgl) Brown, firm, slightly moist, medium plasticity with rootlets and minor gravels.	TP13_0.6	0.0
				TP13_0.8	0.0
			End of Hole at 0.8 m bgl. Refusal on rock.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TEST PIT LOG TP14

Client: City of Darebin	**Date of Sampling:** 25/05/2023	**Depth of Hole:** 0.5 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0.1 — 0.2 — 0.3	Shovel		FILL: Sandy SILT (0.0 - 0.3 m bgl) Brown, soft, dry to slightly moist, zero plasticity with roots, rootlets, minor glass and gravels.		
0.3 — 0.4 — 0.5			FILL: Silty CLAY (0.3 - 0.5 m bgl) Brown, firm, slightly moist, zero to low plasticity with grey mottle and large sub-angular rocks (~30 cm).		
0.6 — 0.7 — 0.8 — 0.9			End of Hole at 0.5 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

TEST PIT LOG TP15

prensa

Client: City of Darebin	**Date of Sampling:** 25/05/2023	**Depth of Hole:** 1 m bgl
Job Number: 115175M	**Rig/Machine:**	**Drawn By:** SEB
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Hand Auger and Shovel	**Approved By:** PXB
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm	

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
			FILL: Sandy silty CLAY (0.0 - 0.2 m bgl) Dark brown, soft, slightly moist, zero to low plasticity with minor gravels, rootlets and sub-angular rocks (~10 cm).		
0.1				TP15_0.1	
0.2			**FILL: Silty CLAY (0.2 - 0.5 m bgl)** Dark brown, soft to firm, slightly moist, zero to low plasticity.		
0.3	Shovel and hand auger				
0.4					
0.5			**FILL: CLAY (0.5 - 0.8 m bgl)** Brown, firm, slightly mosit, medium plasticity with roots, rootlets and minor gravels.	TP15_0.5	0.1
0.6				TP15_0.6	0.0
0.7					
0.8	Hand auger		**NATURAL: CLAY (0.8 - 1.0 m bgl)** Dark grey, firm, slightly moist, medium plasticity.	TP15_0.8	0.0
0.9					
1			End of Hole at 1.0 m bgl. Target Depth.	TP15_1.0	0.0

Disclaimer This log is intended for environmental not geotechnical purposes.

TEST PIT LOG TP16

prensa

Client: City of Darebin	**Date of Sampling:** 25/05/2023
Job Number: 115175M	**Rig/Machine:**
Site Location: 143 Normanby Avenue, Northcote	**Excavation Method:** Shovel
Job Name: SCA AIS Northcote Public Golf Course	**PID Calibration:** 95 ppm

Depth of Hole: 0.5 m bgl
Drawn By: SEB
Approved By: PXB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0.1 0.2 0.3 0.4 0.5	Shovel		FILL: Sandy silty CLAY (0.0 - 0.2 m bgl) Dark brown, soft, dry to slightly moist with minor gravels, roots and rootlets. FILL: Silty CLAY (0.2 - 0.5 m bgl) Dark brown, firm, slightly moist, medium plasticity with gravels, roots and rootlets.		
0.6 0.7 0.8 0.9			End of Hole at 0.5 m bgl. Target Depth.		

Disclaimer This log is intended for environmental not geotechnical purposes.

Appendix H: Equipment Calibration Certificates

PID Calibration Certificate

Instrument	PhoCheck Tiger
Serial No.	T-106648

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6eV			
			Low	High	TWA	STEL
Alarms	Beeper	✓	50ppm	100ppm	N/A	N/A
	Settings	✓				
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		95ppm Isobutylene		ME846		95ppm Isobutylene

Calibrated by: Adam Sheehy

Calibration date: 22/05/2023

Next calibration due: 18/11/2023

Appendix I: Bulk Sample Analysis Report

6 June 2023

Ben Smith
City of Darebin
274 Gower Street
Preston VIC 3072

Dear Ben,

Asbestos Bulk Sample Analysis Report
Northcote Golf Course, 143 Normanby Avenue, Northcote VIC 3070

Please find attached the asbestos bulk sample analysis results of the 1 sample collected by Sian Berner of Prensa Pty Ltd for Northcote Golf Course, 143 Normanby Avenue, Northcote VIC 3070 on 26 May 2023 and received at the Prensa Pty Ltd laboratory (GF, 5 Burwood Rd, Hawthorn VIC 3122) on 26 May 2023. The sample was analysed on 1 June 2023 and the results are presented on the following page(s).

Prensa qualitatively analyses bulk samples for asbestos using polarising light microscopy and dispersion staining techniques in accordance with Prensa Test Method PRLAB2002 Asbestos Identification, and in accordance with Australian Standard (AS) 4964 – 2004, *Method for the qualitative identification of asbestos in bulk samples.*

If you require further information please contact the Prensa office on (03) 9508 0100.

Regards,

Kimberly Thomson
Approved Asbestos Identifier and Signatory

Asbestos Bulk Sample Analysis Report

Northcote Golf Course, 143 Normanby Avenue, Northcote VIC 3070

Sample No	Sample Location / Description / Size	Result
	Test Pit 007	*Chrysotile (white asbestos) detected*
115175M - 001 - 001	Grey fibrous cement material	
	70 X 60 X 20 mm	

Only the samples submitted for analysis have been considered in presenting these results.

Appendix J: Air Monitoring Reports

24th May 2023

Airborne Asbestos Fibre Monitoring Report

Attention to:	Ben Smith		Report No.:	115175M.001 AB
Client Name:	Darebin City Council		Sampling Type:	Background

Client Address:	PO Box 91, Preston, Victoria 3072		Site Address:	Northcote Public Golf Course
Date Sampled:	Wednesday, 24 May 2023		Sampled By:	Krystal Greenwood
Date Analysed:	Wednesday, 24 May 2023		Counted By:	Gajani Mohan

Laboratory and Testing Information

Sampling Type:	Control Monitoring, which is using static positional samples to measure the level of a hazardous substance in an area. Control monitoring is designed to assist in assessing the effectiveness of implemented control measures. Control monitoring is not representative of actual occupational exposures and should not be used for that purpose.
Test Method:	Test Method: Prensa Test Method 'PRLAB2003 – Asbestos and Synthetic Mineral Fibre (SMF) Counting' with reference to the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres. 2nd Edition [NOHSC: 3003 (2005)] and AS ISO/IEC 17025, Australian Standard, General requirements for the competence of testing and calibration laboratories.
Laboratory Address:	Melbourne Laboratory (GF, 5 Burwood Rd, Hawthorn VIC 3122)

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Gajani Mohan
Approved Asbestos Fibre Counter

Thomas Broons
Approved Asbestos Fibre Signatory

NATA
WORLD RECOGNISED
ACCREDITATION

GF, 5 Burwood Rd, Hawthorn VIC 3122 ABN: 12 142 106 581

Accredited for compliance with ISO/IEC 17025 - Testing. Corporate Site Number 19121.

Airborne Asbestos Monitoring Results

Job Location: Northcote Public Golf Course

Filter No.	Sample Location	Sample Period (start - finish)	Avg. Flow (mL/min)	Fibres / Fields	Fibres per mL of air
LB094	Ext West Boundary (opposite golf course)	10:32 - 10:33	1800	0.0/100	<0.01
LB2302	Ext East Boundary (opposite residential)	10:32 - 10:33	1800	0.0/100	<0.01
LB2954	Ext South Boundary (opposite residential)	10:32 - 10:33	1800	2.0/100	<0.01
LB186	Ext West North (opposite site entry)	10:32 - 10:33	1800	0.0/100	<0.01

Only the samples submitted for analysis have been considered in presenting these results.

25th May 2023

Airborne Asbestos Fibre Monitoring Report

Attention to:	Ben Smith	**Report No.:**	115175M.002 AB
Client Name:	Darebin City Council	**Sampling Type:**	Background

Client Address:	PO Box 91, Preston, Victoria 3072	**Site Address:**	Northcote Public Golf Course
Date Sampled:	Thursday, 25 May 2023	**Sampled By:**	Krystal Greenwood
Date Analysed:	Thursday, 25 May 2023	**Counted By:**	Gajani Mohan

Laboratory and Testing Information

Sampling Type: Control Monitoring, which is using static positional samples to measure the level of a hazardous substance in an area. Control monitoring is designed to assist in assessing the effectiveness of implemented control measures. Control monitoring is not representative of actual occupational exposures and should not be used for that purpose.

Test Method: Test Method: Prensa Test Method 'PRLAB2003 – Asbestos and Synthetic Mineral Fibre (SMF) Counting' with reference to the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres. 2nd Edition [NOHSC: 3003 (2005)] and AS ISO/IEC 17025, Australian Standard, General requirements for the competence of testing and calibration laboratories.

Laboratory Address: Melbourne Laboratory (GF, 5 Burwood Rd, Hawthorn VIC 3122)

This document shall not be reproduced, except in full.

Gajani Mohan
Approved Asbestos Fibre Counter

Thomas Broons
Approved Asbestos Fibre Signatory

GF, 5 Burwood Rd, Hawthorn VIC 3122 ABN: 12 142 106 581

Accredited for compliance with ISO/IEC 17025 - Testing. Corporate Site Number 19121.

Airborne Asbestos Monitoring Results

Job Location:	Northcote Public Golf Course				
Filter No.	**Sample Location**	**Sample Period (start - finish)**	**Avg. Flow (mL/min)**	**Fibres / Fields**	**Fibres per mL of air**
LB2954	Ext North Boundary (opposite site entrance)	07:08 - 14:40	1200	0.0/100	<0.01
LB186	Ext West Boundary (opposite creek)	07:08 - 14:40	1200	0.0/100	<0.01
LB294	Ext South Boundary (opposite residential)	07:08 - 14:40	1200	0.0/100	<0.01
LB2302	Ext East Boundary (opposite residential)	07:08 - 14:40	1200	0.0/100	<0.01

Only the samples submitted for analysis have been considered in presenting these results.

Appendix K: Quality Assurance and Quality Control

Quality Assurance/Quality Control

Adopted Guidelines

The data quality assurance and control (QA/QC) procedures adopted by Prensa enables for an evaluation to be made regarding the useability of the data collected. Specifically, the use of the data in terms of its accuracy and reliability in forming the conclusions on the condition of the environment being investigated. The approach was generally based on guidance presented in the following documents:

- Standards Australia, Australian Standard, *Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile Compounds*, 2005 (AS 4482.1-2005)[2];

- Standards Australia and Standards New Zealand, Australian/New Zealand Standard, *Water Quality – Sampling Part 1: Guidance on the Design of Sampling Programs, Sampling Techniques and the Preservation and Handling of Samples*, 1998 (AS/NZS 5667.1-1998)[3];

- Victorian EPA Industrial Waste Resource Guidelines (IWRG701), *Sampling and Analysis of Waters, Wastewaters, Soils and Waste*, June 2009;

- NEPC, *National Environmental Protection (Assessment of Site Contamination) Measure 1999*, May 2013 (NEPM (ASC));

- USEPA, *Guidance on Systematic Planning Using the Data Quality Objectives Process*, February 2006; and

- USEPA, *Guidance on Environmental Data Verification and Data Validation*, January 2008.

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[2] AS 4482.1-2005 is only applicable to soil assessment works.
[3] AS/NZS 5667.1-1998 is only applicable to water assessment works.

Quality Assurance Procedure

The following quality assurance procedures and acceptability limits have been adopted to verify the quality of the data collected during completion of the assessment.

Data Assurance Procedure				
Quality Assurance Process	Data Quality Indicators[1]	Description	Acceptability Limit(s)	Reference(s)
Sampling procedures	Precision, Comparability, Representativeness	Sampling conducted in accordance with Prensa work instructions and appropriate standards. Field forms used.	Adhere to standard procedures and forms.	AS/NZS 5667.11-1998 AS/NZS 5667.1-1998 EPAV, Publication 669 2000 Prensa work instructions
Equipment calibration	Accuracy	Field equipment calibrated in accordance with the manufactures specifications.	Field equipment calibrated in accordance with the manufactures specifications.	EPAV, Publication 669 2000 Prensa work instructions
Analytical testing methods	Accuracy, Comparability	National Association of Testing Authorities (NATA) accredited methods to be used for analysis.	Primary and secondary laboratories are to use NATA accredited methods for analysis.	NEPM (ASC) Prensa work instructions
Sample preservation, handling and holding times	Accuracy, Comparability, Representativeness	Samples appropriately preserved upon collection, stored, transported and analysed under recommended conditions within holding times.	Sample containers to be supplied by a NATA accredited laboratory. Appropriately preserved sampling containers to be used for the requested analysis. Samples stored and transported directly to the laboratory in chilled ice chests with completed chain of custody forms. Samples extracted and analysed within the recommended holding times specified by the NATA accredited laboratory.	AS/NZS 5667.1-1998 IWRG701 NEPM (ASC) Prensa work instructions

Data Assurance Procedure				
Quality Assurance Process	Data Quality Indicators[1]	Description	Acceptability Limit(s)	Reference(s)
Data management and reporting	Accuracy	Potential for transcription errors.	Entry of field data is to be peer reviewed during an internal technical review of report and appendices. Laboratory data requested in database format from the laboratory. Database files exported to create summary tables. At least 10% of data in the tables checked for inconsistencies.	Prensa work instructions.
Data useability	Completeness	The sample volume and analytical methods enable for the limit of reporting for contaminants of concern to be less than the adopted investigation levels/criteria.	Limits of reporting less than the investigation levels/screening criteria adopted.	Prensa work instructions.

(1) **Precision** - A measure of the variability (or reproducibility) of data, **Comparability** - The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event, **Representativeness** - The confidence (expressed qualitatively) that data is representative of each medium present on the site, **Accuracy (bias)** - A quantitative measure of the closeness of reported data to the true value and **Completeness** - A measure of the amount of usable data from a data collection activity.

Quality Control Sampling and Analysis

The following quality control sampling and analysis procedures and acceptability limits have been adopted to evaluate the validity of the analytical data.

Quality Control Sampling and Analysis Procedure				
Quality Assurance Process	Data Quality Indicators[1]	Description	Acceptability Limit(s)	Reference(s)
Quality control sampling and analysis frequency	Precision	Field quality control samples collected in accordance with Prensa work instructions and appropriate standards.	Blind replicate sample ≥1 in 20 primary samples Split sample ≥1 in 20 primary samples Rinsate ≥1 per piece of equipment per day Field blank ≥1 per day Trip blank ≥1 per ice chest containing samples to be analysed for volatile compounds	AS/NZS 5667.1-1998 AS 4482.1-2005 Prensa work instructions.
Blind Replicate and split sample analysis	Precision, Accuracy	Blind replicate sample analysis used to quantitatively assess variability in the concentrations of analytes reported from samples collected from the same location. This provides insight into the reproducibility of the lab analysis. Split sample analysis used to assess variability in the analyte concentrations reported when a sample from the same location is analysed at a different laboratory. Used to assess the accuracy of the concentrations reported by the primary laboratory.	Analysed for the same contaminants of concern as the primary sample. RPD [4]— non limiting when concentrations are <10×LOR RPD<30% of mean concentration when >20×LOR RPD<50% of mean concentration when 10-20×LOR	AS 4482.1-2005 NATA laboratory procedures
Rinsate preparation and analysis	Accuracy, Comparability, Representativeness	Used to evaluate the potential for contamination on sampling equipment to have cross contaminated a sample. Samples prepared in the field following decontamination of sampling equipment.	Concentrations of analytes below the LOR.	AS 4482.1-2005 Prensa work instructions.

[4] RPD (relative percentage differences are calculated by dividing the difference between the primary sample and quality control sample by the average of the two, as shown below:

$$RPD = \frac{(X1 - X2)}{(X1 + X2)/2} \times 100\%$$

Where   X1 = Primary sample result
               X2 = Replicate sample result

Quality Control Sampling and Analysis Procedure				
Quality Assurance Process	Data Quality Indicators[1]	Description	Acceptability Limit(s)	Reference(s)
Field blank preparation and analysis	Accuracy, Comparability, Representativeness	Used to evaluate the potential for contamination of a sample during the collection procedure. Samples prepared in the field.	Concentrations of analytes below the LOR.	AS/NZS 5667.1-1998 Prensa work instructions.
Trip blank preparation and analysis	Accuracy, Comparability, Representativeness	Used to evaluate cross contamination between samples in storage and transit as a product of handling. Samples prepared by the laboratory.	Concentrations of analytes below the LOR.	AS/NZS 5667.1-1998 AS 4482.1-2005 Prensa work instructions.
Laboratory quality control analysis	Precision, Accuracy	Duplicates – A second piece of analysis from the same sample and reported in the same units as the result to show comparison	RPD limits specified for blind replicate and split sample analysis.	As per blind replicate and split sample analysis.
		Spike – Addition of a known concentration of an analyte to a sample and reported as percentage recovery.	Recovery typically between 70-130% or 30-130% for phenols. Dynamic limits are typically set by the laboratory.	NATA laboratory procedures
		Method Blanks – Performed on laboratory certified sands (solids) and deionised water (water).	Concentrations below the laboratory's LOR.	NATA laboratory procedures
		Laboratory Control Samples (LCS) – Reported as percent recovery.	Recovery typically between 70-130% or 30-130% for phenols. Dynamic limits are typically set by the laboratory.	NATA laboratory procedures
		Certified Reference Material (CRM) – Use an analyte of known concentration and reported as percent recovery.	Dynamic limits are typically set by the laboratory.	NATA laboratory procedures
		Surrogates - added to all samples where appropriate and reported as a percentage recovery.	Dynamic limits are typically set by the laboratory.	NATA laboratory procedures

Appendix L: NATA Accredited Laboratory Report & Chain of Custody Documentation

Company Name:	Prensa Pty Ltd VIC	Order No.:		Received:	May 26, 2023 5:50 PM
Address:	5 Burwood Rd	Report #:	993629	Due:	Jun 5, 2023
	Hawthorn	Phone:	9508 0100	Priority:	5 Day
	VIC 3122	Fax:		Contact Name:	Sian Berner
Project Name:	Northcote Golf Club SCA				
Project ID:	115175M			**Eurofins Analytical Services Manager : Harry Bacalis**	

Sample Detail						HOLD	VIC EPA Metals : Metals M17	Moisture Set	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	115175M_TP01_0.3	May 26, 2023		Soil	M23-My0070031		X	X	X
2	115175M_TP07_0.1	May 26, 2023		Soil	M23-My0070032		X	X	X
3	115175M_TP10_0.3	May 26, 2023		Soil	M23-My0070033		X	X	X
4	115175M_TP15_0.1	May 26, 2023		Soil	M23-My0070034		X	X	X
5	115175M_TP01_0.1	May 26, 2023		Soil	M23-My0070035	X			
6	115175M_TP10_0.1	May 26, 2023		Soil	M23-My0070036	X			
7	115175M_R03_26MAY23	May 26, 2023		Water	M23-My0070037	X			
8	115175M_FB03_26MAY24	May 26, 2023		Water	M23-My0070038	X			

Company Name:	Prensa Pty Ltd VIC	Order No.:		Received:	May 26, 2023 5:50 PM
Address:	5 Burwood Rd	Report #:	993629	Due:	Jun 5, 2023
	Hawthorn	Phone:	9508 0100	Priority:	5 Day
	VIC 3122	Fax:		Contact Name:	Sian Berner
Project Name:	Northcote Golf Club SCA				
Project ID:	115175M				

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail					HOLD	VIC EPA Metals : Metals M17	Moisture Set	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254					X	X	X	X
9	115175M_TB03_26MAY25	May 26, 2023		Water	M23-My0070039	X			
Test Counts						5	4	4	4

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Prensa Pty Ltd VIC
5 Burwood Rd
Hawthorn
VIC 3122

Attention:	**Sian Berner**

Report	**993629-S**
Project name	Northcote Golf Club SCA
Project ID	115175M
Received Date	May 26, 2023

Client Sample ID			115175M_TP01_0.3	115175M_TP07_0.1	115175M_TP10_0.3	115175M_TP15_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0070031	M23-My0070032	M23-My0070033	M23-My0070034
Date Sampled			May 26, 2023	May 26, 2023	May 26, 2023	May 26, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	77	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	77	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	77	82	66	76
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.2	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.5	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.8	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	1.0	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	0.9	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.9	< 0.5	< 0.5	< 0.5

Environment Testing

Client Sample ID			115175M_TP01_0.3	115175M_TP07_0.1	115175M_TP10_0.3	115175M_TP15_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0070031	M23-My0070032	M23-My0070033	M23-My0070034
Date Sampled			May 26, 2023	May 26, 2023	May 26, 2023	May 26, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Chrysene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	1.3	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	1.3	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	7.3	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	56	63	87	52
p-Terphenyl-d14 (surr.)	1	%	63	65	65	54
Heavy Metals						
Arsenic	2	mg/kg	2.2	< 2	2.5	4.1
Barium	10	mg/kg	100	48	97	78
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Boron	10	mg/kg	< 10	< 10	G01< 25	G01< 25
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	48	27	70	66
Cobalt	5	mg/kg	16	< 5	15	13
Copper	5	mg/kg	18	14	19	22
Lead	5	mg/kg	18	19	12	43
Manganese	5	mg/kg	300	98	290	180
Mercury	0.1	mg/kg	< 0.1	0.1	0.3	1.9
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	30	13	38	25
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	39	53	41	100
Sample Properties						
% Moisture	1	%	18	12	17	21

![eurofins logo] **Environment Testing**

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite 7C: PAH/TRH/BTEXN/M12			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals IWRG 621 : Metals M12	Melbourne	May 30, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
VIC EPA Metals : Metals M17	Melbourne	May 30, 2023	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	May 27, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			

Date Reported: Jun 01, 2023

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175
ABN : 50 005 085 521 Telephone: +61 3 8564 5000

Page 3 of 12
Report Number: 993629-S

web: www.eurofins.com.au

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Company Name:	Prensa Pty Ltd VIC	Order No.:		Received:	May 26, 2023 5:50 PM
Address:	5 Burwood Rd	Report #:	993629	Due:	Jun 5, 2023
	Hawthorn	Phone:	9508 0100	Priority:	5 Day
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Project Name:	Northcote Golf Club SCA				
Project ID:	115175M			**Eurofins Analytical Services Manager : Harry Bacalis**	

Sample Detail						HOLD	VIC EPA Metals : Metals M17	Moisture Set	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	115175M_TP01_0.3	May 26, 2023		Soil	M23-My0070031		X	X	X
2	115175M_TP07_0.1	May 26, 2023		Soil	M23-My0070032		X	X	X
3	115175M_TP10_0.3	May 26, 2023		Soil	M23-My0070033		X	X	X
4	115175M_TP15_0.1	May 26, 2023		Soil	M23-My0070034		X	X	X
5	115175M_TP01_0.1	May 26, 2023		Soil	M23-My0070035	X			
6	115175M_TP10_0.1	May 26, 2023		Soil	M23-My0070036	X			
7	115175M_R03_26MAY23	May 26, 2023		Water	M23-My0070037	X			
8	115175M_FB03_26MAY24	May 26, 2023		Water	M23-My0070038	X			

Date Reported:Jun 01, 2023

Company Name:	Prensa Pty Ltd VIC	Order No.:		Received:	May 26, 2023 5:50 PM
Address:	5 Burwood Rd	Report #:	993629	Due:	Jun 5, 2023
	Hawthorn	Phone:	9508 0100	Priority:	5 Day
	VIC 3122	Fax:		Contact Name:	Sian Berner
Project Name:	Northcote Golf Club SCA				
Project ID:	115175M			**Eurofins Analytical Services Manager : Harry Bacalis**	

Sample Detail					HOLD	VIC EPA Metals : Metals M17	Moisture Set	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254					X	X	X	X
9	115175M_TB03_26MAY25	May 26, 2023		Water	M23-My0070039	X			
Test Counts					5	4	4	4

Date Reported:Jun 01, 2023

General

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

Holding Times

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

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

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

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

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

Units

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

Terms

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

QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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

QC Data General Comments

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

![eurofins Environment Testing logo]

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	90			70-130	Pass	
TRH C10-C14	%	80			70-130	Pass	
TRH C6-C10	%	77			70-130	Pass	
TRH >C10-C16	%	82			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	90			70-130	Pass	
Toluene	%	86			70-130	Pass	
Ethylbenzene	%	79			70-130	Pass	
m&p-Xylenes	%	81			70-130	Pass	
Xylenes - Total*	%	82			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	83			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	80			70-130	Pass	
Acenaphthylene	%	83			70-130	Pass	
Anthracene	%	89			70-130	Pass	
Benz(a)anthracene	%	78			70-130	Pass	
Benzo(a)pyrene	%	71			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g.h.i)perylene	%	97			70-130	Pass	
Benzo(k)fluoranthene	%	125			70-130	Pass	
Chrysene	%	97			70-130	Pass	
Dibenz(a.h)anthracene	%	112			70-130	Pass	
Fluoranthene	%	86			70-130	Pass	
Fluorene	%	78			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	109			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
Phenanthrene	%	78			70-130	Pass	
Pyrene	%	87			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	109			80-120	Pass	
Barium	%	110			80-120	Pass	
Beryllium	%	116			80-120	Pass	
Boron	%	119			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Chromium	%	109			80-120	Pass	
Cobalt	%	112			80-120	Pass	
Copper	%	109			80-120	Pass	
Lead	%	109			80-120	Pass	
Manganese	%	112			80-120	Pass	
Mercury	%	109			80-120	Pass	
Molybdenum	%	107			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel			%	109			80-120	Pass	
Selenium			%	108			80-120	Pass	
Silver			%	111			80-120	Pass	
Tin			%	108			80-120	Pass	
Zinc			%	109			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M23-My0077409	NCP	%	95			70-130	Pass	
TRH C10-C14	M23-My0078324	NCP	%	73			70-130	Pass	
TRH C6-C10	M23-My0077409	NCP	%	86			70-130	Pass	
TRH >C10-C16	M23-My0078324	NCP	%	71			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M23-My0077409	NCP	%	97			70-130	Pass	
Toluene	M23-My0077409	NCP	%	97			70-130	Pass	
Ethylbenzene	M23-My0077409	NCP	%	91			70-130	Pass	
m&p-Xylenes	M23-My0077409	NCP	%	75			70-130	Pass	
o-Xylene	M23-My0077409	NCP	%	101			70-130	Pass	
Xylenes - Total*	M23-My0077409	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M23-My0077409	NCP	%	108			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M23-My0075656	NCP	%	104			70-130	Pass	
Acenaphthylene	M23-My0075656	NCP	%	129			70-130	Pass	
Anthracene	M23-My0075656	NCP	%	115			70-130	Pass	
Benz(a)anthracene	M23-My0075656	NCP	%	110			70-130	Pass	
Benzo(a)pyrene	M23-My0075656	NCP	%	98			70-130	Pass	
Benzo(b&j)fluoranthene	M23-My0075656	NCP	%	94			70-130	Pass	
Benzo(g.h.i)perylene	M23-My0075656	NCP	%	101			70-130	Pass	
Benzo(k)fluoranthene	M23-My0075656	NCP	%	130			70-130	Pass	
Chrysene	M23-My0075656	NCP	%	89			70-130	Pass	
Dibenz(a.h)anthracene	M23-My0075656	NCP	%	84			70-130	Pass	
Fluoranthene	M23-My0075656	NCP	%	126			70-130	Pass	
Fluorene	M23-My0075656	NCP	%	124			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M23-My0075656	NCP	%	101			70-130	Pass	
Naphthalene	M23-My0075656	NCP	%	73			70-130	Pass	
Phenanthrene	M23-My0075656	NCP	%	117			70-130	Pass	
Pyrene	M23-My0075656	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M23-My0069799	NCP	%	79			75-125	Pass	
Barium	M23-My0069799	NCP	%	101			75-125	Pass	
Beryllium	M23-My0069799	NCP	%	92			75-125	Pass	
Boron	M23-My0069852	NCP	%	105			75-125	Pass	
Cadmium	M23-My0069799	NCP	%	104			75-125	Pass	
Chromium	M23-My0069799	NCP	%	92			75-125	Pass	
Cobalt	M23-My0069799	NCP	%	81			75-125	Pass	
Copper	M23-My0069799	NCP	%	85			75-125	Pass	
Lead	M23-My0069799	NCP	%	86			75-125	Pass	
Manganese	M23-My0069799	NCP	%	85			75-125	Pass	
Mercury	M23-My0069799	NCP	%	115			75-125	Pass	

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175

Date Reported: Jun 01, 2023 *ABN : 50 005 085 521 Telephone: +61 3 8564 5000* *Page 9 of 12* *Report Number: 993629-S*

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Molybdenum	M23-My0069799	NCP	%	83			75-125	Pass	
Nickel	M23-My0069799	NCP	%	84			75-125	Pass	
Selenium	M23-My0069799	NCP	%	77			75-125	Pass	
Silver	M23-My0069799	NCP	%	108			75-125	Pass	
Tin	M23-My0069799	NCP	%	85			75-125	Pass	
Zinc	M23-My0069799	NCP	%	84			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M23-My0071681	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M23-My0069877	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M23-My0069877	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M23-My0069877	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	M23-My0071681	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M23-My0069877	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M23-My0069877	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M23-My0069877	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M23-My0071681	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M23-My0071681	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M23-My0071681	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M23-My0071681	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M23-My0071681	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M23-My0071681	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M23-My0071681	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M23-My0069785	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M23-My0069799	NCP	mg/kg	5.5	5.6	2.0	30%	Pass	
Barium	M23-My0069799	NCP	mg/kg	53	52	2.5	30%	Pass	
Beryllium	M23-My0069799	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M23-My0069799	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	M23-My0069799	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M23-My0069799	NCP	mg/kg	52	51	3.1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Cobalt	M23-My0069799	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	M23-My0069799	NCP	mg/kg	11	10	1.4	30%	Pass	
Lead	M23-My0069799	NCP	mg/kg	18	18	3.4	30%	Pass	
Manganese	M23-My0069799	NCP	mg/kg	18	17	3.9	30%	Pass	
Mercury	M23-My0069799	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M23-My0069799	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M23-My0069799	NCP	mg/kg	7.8	7.8	<1	30%	Pass	
Selenium	M23-My0069799	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M23-My0069799	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	M23-My0069799	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M23-My0069799	NCP	mg/kg	11	8.3	31	30%	Fail	Q15
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	M23-My0070031	CP	%	18	20	6.9	30%	Pass	

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175
ABN : 50 005 085 521 Telephone: +61 3 8564 5000

Date Reported: Jun 01, 2023

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Report Number: 993629-S

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Catherine Wilson	Analytical Services Manager
Carroll Lee	Senior Analyst-Volatile
Emily Rosenberg	Senior Analyst-Metal
Joseph Edouard	Senior Analyst-Organic
Mary Makarios	Senior Analyst-Metal
Mary Makarios	Senior Analyst-Sample Properties

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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Company Name: Prensa Pty Ltd VIC	**Order No.:**	**Received:** May 26, 2023 2:44 PM
Address: 5 Burwood Rd	**Report #:** 993591	**Due:** Jun 2, 2023
Hawthorn	**Phone:** 9508 0100	**Priority:** 5 Day
VIC 3122	**Fax:**	**Contact Name:** Sian Berner

Project Name: SCA AIS NORTHCOTE PUBLIC GOLF COURSE
Project ID: 115175M

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail	Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X		
External Laboratory										

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
1	115175M_TP02_0.6	May 24, 2023		Soil	M23-My0069690						X	X			X
2	115175M_TP03_0.55	May 24, 2023		Soil	M23-My0069691	X		X			X	X	X		
3	115175M_TP03_0.8	May 24, 2023		Soil	M23-My0069692						X	X			X
4	115175M_TP05_1.0	May 25, 2023		Soil	M23-My0069693						X	X			X
5	115175M_TP07_0.5	May 25, 2023		Soil	M23-My0069694	X		X			X	X	X		
6	115175M_TP11_0.55	May 25, 2023		Soil	M23-My0069695						X	X			X
7	115175M_TP13_0.6	May 25, 2023		Soil	M23-My0069696						X	X			X

Company Name:	Prensa Pty Ltd VIC
Address:	5 Burwood Rd
	Hawthorn
	VIC 3122
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE
Project ID:	115175M

Order No.:	
Report #:	993591
Phone:	9508 0100
Fax:	

Received:	May 26, 2023 2:44 PM
Due:	Jun 2, 2023
Priority:	5 Day
Contact Name:	Sian Berner

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794													X		
8	115175M_TP15_0.5	May 25, 2023		Soil	M23-My0069697						X	X			X
9	115175M_TP15_1.0	May 25, 2023		Soil	M23-My0069698	X		X			X	X	X		
10	115175M_R01_24MAY23	May 24, 2023		Water	M23-My0069699				X	X					
11	115175M_R02_24MAY23	May 25, 2023		Water	M23-My0069700				X	X					
12	115175M_QC01_24MAY23	May 24, 2023		Soil	M23-My0069701				X	X		X			
13	115175M_TP01_0.5	May 24, 2023		Soil	M23-My0069702		X								
14	115175M_TP01_0.6	May 24, 2023		Soil	M23-My0069703		X								
15	115175M_TP02_0.7	May 24, 2023		Soil	M23-My0069704		X								
16	115175M_TP05_0.5	May 24, 2023		Soil	M23-My0069705		X								

Company Name:	Prensa Pty Ltd VIC	Order No.:		Received:	May 26, 2023 2:44 PM
Address:	5 Burwood Rd	Report #:	993591	Due:	Jun 2, 2023
	Hawthorn	Phone:	9508 0100	Priority:	5 Day
	VIC 3122	Fax:		Contact Name:	Sian Berner
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE				
Project ID:	115175M				

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail							Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254							X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														X		
17	115175M_TP05_0.6	May 24, 2023		Soil	M23-My0069706			X								
18	115175M_TP07_0.8	May 25, 2023		Soil	M23-My0069707			X								
19	115175M_TP07_1.0	May 25, 2023		Soil	M23-My0069708			X								
20	115175M_TP09_0.5	May 25, 2023		Soil	M23-My0069709			X								
21	115175M_TP09_0.9	May 25, 2023		Soil	M23-My0069710			X								
22	115175M_TP11_0.9	May 25, 2023		Soil	M23-My0069711			X								
23	115175M_TP13_0.8	May 25, 2023		Soil	M23-My0069712			X								
24	115175M_TP15_0.6	May 25, 2023		Soil	M23-My0069713			X								
25	115175M_TP15_0.8	May 25, 2023		Soil	M23-My0069714			X								

Company Name:	Prensa Pty Ltd VIC
Address:	5 Burwood Rd
	Hawthorn
	VIC 3122
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE
Project ID:	115175M

Order No.:	
Report #:	993591
Phone:	9508 0100
Fax:	

Received:	May 26, 2023 2:44 PM
Due:	Jun 2, 2023
Priority:	5 Day
Contact Name:	Sian Berner

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail					Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254					X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794												X		
26	115175M_FB01_24MAY23	May 24, 2023		Water	M23-My0069715		X								
27	115175M_FB02_24MAY23	May 25, 2023		Water	M23-My0069716		X								
28	115175M_TB01_24MAY23	May 24, 2023		Soil	M23-My0069717		X								
29	115175M_QC03_24MAY23	May 25, 2023		Soil	M23-My0069718		X								
30	115175M_QC04_24MAY23	May 25, 2023		Soil	M23-My0069719		X								
Test Counts					3	18	3	3	3	6	10	3	3	6

eurofins | **Environment Testing**

Prensa Pty Ltd VIC
5 Burwood Rd
Hawthorn
VIC 3122

Attention:	**Sian Berner**
Report	**993591-S**
Project name	SCA AIS NORTHCOTE PUBLIC GOLF COURSE
Project ID	115175M
Received Date	May 26, 2023

Client Sample ID			115175M_TP02_0.6	115175M_TP03_0.55	115175M_TP03_0.8	115175M_TP05_1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0069690	M23-My0069691	M23-My0069692	M23-My0069693
Date Sampled			May 24, 2023	May 24, 2023	May 24, 2023	May 25, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	100	-	89	90
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

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Date Reported: Jun 06, 2023

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Report Number: 993591-S

Client Sample ID			115175M_TP02_0.6	115175M_TP03_0.55	115175M_TP03_0.8	115175M_TP05_1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0069690	M23-My0069691	M23-My0069692	M23-My0069693
Date Sampled			May 24, 2023	May 24, 2023	May 24, 2023	May 25, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	98	93	60	60
p-Terphenyl-d14 (surr.)	1	%	96	112	75	73
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Barium	10	mg/kg	170	-	25	34
Beryllium	2	mg/kg	< 2	-	< 2	< 2
Boron	10	mg/kg	< 10	-	< 10	< 10
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	20	19	16	39
Cobalt	5	mg/kg	8.9	-	< 5	10
Copper	5	mg/kg	6.0	5.3	< 5	14
Iron	20	mg/kg	-	8000	-	-
Lead	5	mg/kg	12	9.8	8.3	10
Manganese	5	mg/kg	49	-	40	35
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	13	11	6.8	16
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	9.5	6.3	< 5	14
Sample Properties						
% Moisture	1	%	18	15	13	18
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.2.4-Trichlorobenzene	0.5	mg/kg	-	< 0.5	-	-
Hexachlorobutadiene	0.5	mg/kg	-	< 0.5	-	-
1.1-Dichloroethene	0.5	mg/kg	-	< 0.5	-	-
1.1.1-Trichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1.2-Trichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	< 0.5	-	-
1.2-Dibromoethane	0.5	mg/kg	-	< 0.5	-	-
1.2-Dichlorobenzene	0.5	mg/kg	-	< 0.5	-	-
1.2-Dichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.2-Dichloropropane	0.5	mg/kg	-	< 0.5	-	-
1.2.3-Trichloropropane	0.5	mg/kg	-	< 0.5	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	-	< 0.5	-	-
1.3-Dichlorobenzene	0.5	mg/kg	-	< 0.5	-	-

Client Sample ID			115175M_TP02_0.6	115175M_TP03_0.55	115175M_TP03_0.8	115175M_TP05_1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0069690	M23-My0069691	M23-My0069692	M23-My0069693
Date Sampled			May 24, 2023	May 24, 2023	May 24, 2023	May 25, 2023
Test/Reference	LOR	Unit				
Volatile Organics						
1.3-Dichloropropane	0.5	mg/kg	-	< 0.5	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	-	< 0.5	-	-
1.4-Dichlorobenzene	0.5	mg/kg	-	< 0.5	-	-
2-Butanone (MEK)	0.5	mg/kg	-	< 0.5	-	-
2-Propanone (Acetone)	0.5	mg/kg	-	< 0.5	-	-
4-Chlorotoluene	0.5	mg/kg	-	< 0.5	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	< 0.5	-	-
Allyl chloride	0.5	mg/kg	-	< 0.5	-	-
Benzene	0.1	mg/kg	-	< 0.1	-	-
Bromobenzene	0.5	mg/kg	-	< 0.5	-	-
Bromochloromethane	0.5	mg/kg	-	< 0.5	-	-
Bromodichloromethane	0.5	mg/kg	-	< 0.5	-	-
Bromoform	0.5	mg/kg	-	< 0.5	-	-
Bromomethane	0.5	mg/kg	-	< 0.5	-	-
Carbon disulfide	0.5	mg/kg	-	< 0.5	-	-
Carbon Tetrachloride	0.5	mg/kg	-	< 0.5	-	-
Chlorobenzene	0.5	mg/kg	-	< 0.5	-	-
Chloroethane	0.5	mg/kg	-	< 0.5	-	-
Chloroform	0.5	mg/kg	-	< 0.5	-	-
Chloromethane	0.5	mg/kg	-	< 0.5	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	-	< 0.5	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	-	< 0.5	-	-
Dibromochloromethane	0.5	mg/kg	-	< 0.5	-	-
Dibromomethane	0.5	mg/kg	-	< 0.5	-	-
Dichlorodifluoromethane	0.5	mg/kg	-	< 0.5	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
Iodomethane	0.5	mg/kg	-	< 0.5	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	-	< 0.5	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-
Methylene Chloride	0.5	mg/kg	-	< 0.5	-	-
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Styrene	0.5	mg/kg	-	< 0.5	-	-
Tetrachloroethene	0.5	mg/kg	-	< 0.5	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	-	< 0.5	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	-	< 0.5	-	-
Trichloroethene	0.5	mg/kg	-	< 0.5	-	-
Trichlorofluoromethane	0.5	mg/kg	-	< 0.5	-	-
Vinyl chloride	0.5	mg/kg	-	< 0.5	-	-
Xylenes - Total*	0.3	mg/kg	-	< 0.3	-	-
Total MAH*	0.5	mg/kg	-	< 0.5	-	-
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	-	< 0.5	-	-
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	-	< 0.5	-	-
4-Bromofluorobenzene (surr.)	1	%	-	60	-	-
Toluene-d8 (surr.)	1	%	-	68	-	-

Client Sample ID			115175M_TP02_0.6	115175M_TP03_0.55	115175M_TP03_0.8	115175M_TP05_1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0069690	M23-My0069691	M23-My0069692	M23-My0069693
Date Sampled			May 24, 2023	May 24, 2023	May 24, 2023	May 25, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-HCH	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-HCH	0.05	mg/kg	-	< 0.05	-	-
d-HCH	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	0.5	mg/kg	-	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	137	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	112	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	-
Total PCB*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	137	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	112	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4.5-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.4.6-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-	-
Pentachlorophenol	1	mg/kg	-	< 1	-	-
Tetrachlorophenols - Total	10	mg/kg	-	< 10	-	-
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	-

Client Sample ID			115175M_TP02_0.6	115175M_TP03_0.55	115175M_TP03_0.8	115175M_TP05_1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0069690	M23-My0069691	M23-My0069692	M23-My0069693
Date Sampled			May 24, 2023	May 24, 2023	May 24, 2023	May 25, 2023
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
Total cresols*	0.5	mg/kg	-	< 0.5	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Phenol-d6 (surr.)	1	%	-	39	-	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
% Clay	1	%	-	14	-	-
Chloride	5	mg/kg	-	31	-	-
Chromium (hexavalent)	1	mg/kg	-	< 1	-	-
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	53	-	-
Cyanide (total)	5	mg/kg	-	< 5	-	-
Fluoride	100	mg/kg	-	1500	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	7.6	-	-
pH (units)(1:5 soil:CaCl2 extract at 25 °C as rec.)	0.1	pH Units	-	7.7	-	-
Sulphate (as SO4)	30	mg/kg	-	48	-	-
Total Organic Carbon	0.1	%	-	0.4	-	-
Heavy Metals						
Iron (%)	0.01	%	-	0.80	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	4.2	-	-

Client Sample ID			115175M_TP07_0.5	115175M_TP11_0.55	115175M_TP13_0.6	115175M_TP15_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0069694	M23-My0069695	M23-My0069696	M23-My0069697
Date Sampled			May 25, 2023	May 25, 2023	May 25, 2023	May 25, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	81	< 50	270
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	650
TRH C10-C36 (Total)	50	mg/kg	< 50	81	< 50	920
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	730
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	490
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	1220

Client Sample ID			115175M_TP07_0.5	115175M_TP11_0.55	115175M_TP13_0.6	115175M_TP15_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0069694	M23-My0069695	M23-My0069696	M23-My0069697
Date Sampled			May 25, 2023	May 25, 2023	May 25, 2023	May 25, 2023
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	101	87	99
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	1.3	< 0.5	2.3
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	1.5	0.6	2.5
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.8	1.2	2.8
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	0.8	< 0.5	0.6
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.0	< 0.5	1.8
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	0.9	< 0.5	1.2
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	0.6	< 0.5	1.7
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	0.6	< 0.5	1.2
Chrysene	0.5	mg/kg	< 0.5	1.0	< 0.5	1.1
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	1.7	< 0.5	0.7
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	0.5	< 0.5	1.4
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	1.8	< 0.5	1.1
Total PAH*	0.5	mg/kg	< 0.5	8.9	< 0.5	11
2-Fluorobiphenyl (surr.)	1	%	52	92	87	67
p-Terphenyl-d14 (surr.)	1	%	81	65	63	84
Heavy Metals						
Arsenic	2	mg/kg	< 2	2.1	4.7	7.6
Barium	10	mg/kg	-	1200	96	94
Beryllium	2	mg/kg	-	< 2	< 2	< 2
Boron	10	mg/kg	-	< 10	[G01] < 20	[G01] < 20
Cadmium	0.4	mg/kg	< 0.4	0.6	< 0.4	< 0.4
Chromium	5	mg/kg	57	7.2	160	46
Cobalt	5	mg/kg	-	< 5	29	13
Copper	5	mg/kg	21	5.5	29	30
Iron	20	mg/kg	29000	-	-	-
Lead	5	mg/kg	20	380	19	32
Manganese	5	mg/kg	-	50	300	160
Mercury	0.1	mg/kg	< 0.1	< 0.1	1.6	0.5
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	34	< 5	55	41
Selenium	2	mg/kg	< 2	< 2	< 2	< 2

Environment Testing

Client Sample ID			115175M_TP07_0.5	115175M_TP11_0.55	115175M_TP13_0.6	115175M_TP15_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0069694	M23-My0069695	M23-My0069696	M23-My0069697
Date Sampled			May 25, 2023	May 25, 2023	May 25, 2023	May 25, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Silver	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	33	730	86	79
Sample Properties						
% Moisture	1	%	26	8.7	18	18
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Hexachlorobutadiene	0.5	mg/kg	< 0.5	-	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	-	-
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	-	-	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	-	-
Allyl chloride	0.5	mg/kg	< 0.5	-	-	-
Benzene	0.1	mg/kg	< 0.1	-	-	-
Bromobenzene	0.5	mg/kg	< 0.5	-	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromoform	0.5	mg/kg	< 0.5	-	-	-
Bromomethane	0.5	mg/kg	< 0.5	-	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	-	-
Chlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Chloroethane	0.5	mg/kg	< 0.5	-	-	-
Chloroform	0.5	mg/kg	< 0.5	-	-	-
Chloromethane	0.5	mg/kg	< 0.5	-	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Dibromomethane	0.5	mg/kg	< 0.5	-	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
Iodomethane	0.5	mg/kg	< 0.5	-	-	-

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175

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Client Sample ID			115175M_TP07_0.5	115175M_TP11_0.55	115175M_TP13_0.6	115175M_TP15_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0069694	M23-My0069695	M23-My0069696	M23-My0069697
Date Sampled			May 25, 2023	May 25, 2023	May 25, 2023	May 25, 2023
Test/Reference	LOR	Unit				
Volatile Organics						
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Styrene	0.5	mg/kg	< 0.5	-	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Trichloroethene	0.5	mg/kg	< 0.5	-	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	-
Total MAH*	0.5	mg/kg	< 0.5	-	-	-
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	-	-	-
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	-	-	-
4-Bromofluorobenzene (surr.)	1	%	63	-	-	-
Toluene-d8 (surr.)	1	%	71	-	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-HCH	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-HCH	0.05	mg/kg	< 0.05	-	-	-
d-HCH	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	0.5	mg/kg	< 0.5	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	75	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	96	-	-	-

Client Sample ID			115175M_TP07_0.5	115175M_TP11_0.55	115175M_TP13_0.6	115175M_TP15_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-My0069694	M23-My0069695	M23-My0069696	M23-My0069697
Date Sampled			May 25, 2023	May 25, 2023	May 25, 2023	May 25, 2023
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	75	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	96	-	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
2.4.5-Trichlorophenol	1	mg/kg	< 1	-	-	-
2.4.6-Trichlorophenol	1	mg/kg	< 1	-	-	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	-	-
Pentachlorophenol	1	mg/kg	< 1	-	-	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-	-	-
Total Halogenated Phenol*	1	mg/kg	< 1	-	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	-	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	-
2.4-Dinitrophenol	5	mg/kg	< 5	-	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	-
Total cresols*	0.5	mg/kg	< 0.5	-	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-	-
Dinoseb	20	mg/kg	< 20	-	-	-
Phenol	0.5	mg/kg	< 0.5	-	-	-
Phenol-d6 (surr.)	1	%	91	-	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	-
% Clay	1	%	15	-	-	-
Chloride	5	mg/kg	16	-	-	-
Chromium (hexavalent)	1	mg/kg	< 1	-	-	-
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	310	-	-	-
Cyanide (total)	5	mg/kg	< 5	-	-	-
Fluoride	100	mg/kg	< 100	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.7	-	-	-
pH (units)(1:5 soil:CaCl2 extract at 25 °C as rec.)	0.1	pH Units	7.6	-	-	-
Sulphate (as SO4)	30	mg/kg	35	-	-	-
Total Organic Carbon	0.1	%	1.5	-	-	-
Heavy Metals						
Iron (%)	0.01	%	2.9	-	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	54	-	-	-

Client Sample ID			115175M_TP15_1.0	115175M_QC01_24MAY23
Sample Matrix			Soil	Soil
Eurofins Sample No.			M23-My0069698	M23-My0069701
Date Sampled			May 25, 2023	May 24, 2023
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	-
TRH C10-C14	20	mg/kg	< 20	-
TRH C15-C28	50	mg/kg	< 50	-
TRH C29-C36	50	mg/kg	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-
TRH C6-C10	20	mg/kg	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	-
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	62	58
p-Terphenyl-d14 (surr.)	1	%	69	74
Heavy Metals				
Arsenic	2	mg/kg	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	31	49
Copper	5	mg/kg	7.0	14
Iron	20	mg/kg	16000	-
Lead	5	mg/kg	9.7	12
Mercury	0.1	mg/kg	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	-
Nickel	5	mg/kg	14	27
Selenium	2	mg/kg	< 2	-

Client Sample ID			115175M_TP15_1.0	115175M_QC01_24MAY23
Sample Matrix			Soil	Soil
Eurofins Sample No.			M23-My0069698	M23-My0069701
Date Sampled			May 25, 2023	May 24, 2023
Test/Reference	LOR	Unit		
Heavy Metals				
Silver	2	mg/kg	< 2	-
Tin	10	mg/kg	< 10	-
Zinc	5	mg/kg	12	21
Sample Properties				
% Moisture	1	%	19	17
Volatile Organics				
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	-
Hexachlorobutadiene	0.5	mg/kg	< 0.5	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-
Allyl chloride	0.5	mg/kg	< 0.5	-
Benzene	0.1	mg/kg	< 0.1	-
Bromobenzene	0.5	mg/kg	< 0.5	-
Bromochloromethane	0.5	mg/kg	< 0.5	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-
Bromoform	0.5	mg/kg	< 0.5	-
Bromomethane	0.5	mg/kg	< 0.5	-
Carbon disulfide	0.5	mg/kg	< 0.5	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-
Chlorobenzene	0.5	mg/kg	< 0.5	-
Chloroethane	0.5	mg/kg	< 0.5	-
Chloroform	0.5	mg/kg	< 0.5	-
Chloromethane	0.5	mg/kg	< 0.5	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-
Dibromomethane	0.5	mg/kg	< 0.5	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-
Ethylbenzene	0.1	mg/kg	< 0.1	-
Iodomethane	0.5	mg/kg	< 0.5	-

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175
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Date Reported: Jun 06, 2023

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Client Sample ID			115175M_TP15_1.0	115175M_QC01_24MAY23
Sample Matrix			Soil	Soil
Eurofins Sample No.			M23-My0069698	M23-My0069701
Date Sampled			May 25, 2023	May 24, 2023
Test/Reference	LOR	Unit		
Volatile Organics				
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-
Methylene Chloride	0.5	mg/kg	< 0.5	-
o-Xylene	0.1	mg/kg	< 0.1	-
Styrene	0.5	mg/kg	< 0.5	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-
Toluene	0.1	mg/kg	< 0.1	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-
Trichloroethene	0.5	mg/kg	< 0.5	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-
Vinyl chloride	0.5	mg/kg	< 0.5	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-
Total MAH*	0.5	mg/kg	< 0.5	-
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	-
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	-
4-Bromofluorobenzene (surr.)	1	%	68	-
Toluene-d8 (surr.)	1	%	80	-
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-
Dibutylchlorendate (surr.)	1	%	62	-
Tetrachloro-m-xylene (surr.)	1	%	81	-

Client Sample ID			115175M_TP15_1.0	115175M_QC01_24MAY23
Sample Matrix			Soil	Soil
Eurofins Sample No.			M23-My0069698	M23-My0069701
Date Sampled			May 25, 2023	May 24, 2023
Test/Reference	LOR	Unit		
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	-
Dibutylchlorendate (surr.)	1	%	62	-
Tetrachloro-m-xylene (surr.)	1	%	81	-
Phenols (Halogenated)				
2-Chlorophenol	0.5	mg/kg	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-
Pentachlorophenol	1	mg/kg	< 1	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-
Total Halogenated Phenol*	1	mg/kg	< 1	-
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-
2-Nitrophenol	1.0	mg/kg	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-
Total cresols*	0.5	mg/kg	< 0.5	-
4-Nitrophenol	5	mg/kg	< 5	-
Dinoseb	20	mg/kg	< 20	-
Phenol	0.5	mg/kg	< 0.5	-
Phenol-d6 (surr.)	1	%	80	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-
% Clay	1	%	22	-
Chloride	5	mg/kg	14	-
Chromium (hexavalent)	1	mg/kg	< 1	-
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	83	-
Cyanide (total)	5	mg/kg	< 5	-
Fluoride	100	mg/kg	140	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.7	-
pH (units)(1:5 soil:CaCl2 extract at 25 °C as rec.)	0.1	pH Units	7.0	-
Sulphate (as SO4)	30	mg/kg	89	-
Total Organic Carbon	0.1	%	12	-
Heavy Metals				
Iron (%)	0.01	%	1.6	-
Cation Exchange Capacity				
Cation Exchange Capacity	0.05	meq/100g	28	-

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite 7C: PAH/TRH/BTEXN/M12			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals IWRG 621 : Metals M12	Melbourne	May 30, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
VIC EPA Metals : Metals M17	Melbourne	May 30, 2023	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8	Melbourne	May 30, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Chloride	Melbourne	May 30, 2023	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Sulphate (as SO4)	Melbourne	May 30, 2023	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
NEPM Screen for Soil Classification			
Heavy Metals	Melbourne	May 30, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Clay	Brisbane	Jun 03, 2023	14 Days
- Method: LTM-GEN-7040			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Melbourne	May 30, 2023	7 Days
- Method: LTM-INO-4030 Conductivity			
pH (units)(1:5 soil:CaCl2 extract at 25 °C as rec.)	Melbourne	May 30, 2023	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Total Organic Carbon	Melbourne	May 31, 2023	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Cation Exchange Capacity	Melbourne	May 31, 2023	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
% Moisture	Melbourne	May 26, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Vic EPA 1828.2 Table 3 (Solids)			
Volatile Organics	Melbourne	May 30, 2023	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Organochlorine Pesticides	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Polychlorinated Biphenyls	Melbourne	May 30, 2023	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Phenols (Halogenated)	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	May 30, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	May 30, 2023	28 Days
- Method: LTM-INO-4100 Hexavalent Chromium by Spectrometric detection			
Cyanide (total)	Melbourne	May 30, 2023	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			

Environment Testing

Description	Testing Site	Extracted	Holding Time
Fluoride	Melbourne	May 31, 2023	28 Days
- Method: LTM-INO-4150 Determination of Total Fluoride PART A – CIC			
pH (1:5 Aqueous extract at 25 °C as rec.)	Melbourne	May 30, 2023	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			

Company Name:	Prensa Pty Ltd VIC	**Order No.:**	
Address:	5 Burwood Rd	**Report #:**	993591
	Hawthorn	**Phone:**	9508 0100
	VIC 3122	**Fax:**	
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE		
Project ID:	115175M		

Received:	May 26, 2023 2:44 PM
Due:	Jun 2, 2023
Priority:	5 Day
Contact Name:	Sian Berner

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail	Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								X		
External Laboratory										

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	115175M_TP02_0.6	May 24, 2023		Soil	M23-My0069690						X	X			X
2	115175M_TP03_0.55	May 24, 2023		Soil	M23-My0069691	X		X			X	X	X		
3	115175M_TP03_0.8	May 24, 2023		Soil	M23-My0069692						X	X			X
4	115175M_TP05_1.0	May 25, 2023		Soil	M23-My0069693						X	X			X
5	115175M_TP07_0.5	May 25, 2023		Soil	M23-My0069694	X		X			X	X	X		
6	115175M_TP11_0.55	May 25, 2023		Soil	M23-My0069695						X	X			X
7	115175M_TP13_0.6	May 25, 2023		Soil	M23-My0069696						X	X			X

Date Reported:Jun 06, 2023

Company Name:	Prensa Pty Ltd VIC	Order No.:		Received:	May 26, 2023 2:44 PM
Address:	5 Burwood Rd	Report #:	993591	Due:	Jun 2, 2023
	Hawthorn	Phone:	9508 0100	Priority:	5 Day
	VIC 3122	Fax:		Contact Name:	Sian Berner
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE				
Project ID:	115175M				

Eurofins Analytical Services Manager : Harry Bacalis

	Sample Detail					Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794													X		
8	115175M_TP15_0.5	May 25, 2023		Soil	M23-My0069697						X	X			X
9	115175M_TP15_1.0	May 25, 2023		Soil	M23-My0069698	X		X			X	X	X		
10	115175M_R01_24MAY23	May 24, 2023		Water	M23-My0069699				X	X					
11	115175M_R02_24MAY23	May 25, 2023		Water	M23-My0069700				X	X					
12	115175M_QC01_24MAY23	May 24, 2023		Soil	M23-My0069701				X	X		X			
13	115175M_TP01_0.5	May 24, 2023		Soil	M23-My0069702		X								
14	115175M_TP01_0.6	May 24, 2023		Soil	M23-My0069703		X								
15	115175M_TP02_0.7	May 24, 2023		Soil	M23-My0069704		X								
16	115175M_TP05_0.5	May 24, 2023		Soil	M23-My0069705		X								

Date Reported:Jun 06, 2023

Company Name: Prensa Pty Ltd VIC	**Order No.:**	**Received:** May 26, 2023 2:44 PM
Address: 5 Burwood Rd	**Report #:** 993591	**Due:** Jun 2, 2023
Hawthorn	**Phone:** 9508 0100	**Priority:** 5 Day
VIC 3122	**Fax:**	**Contact Name:** Sian Berner
Project Name: SCA AIS NORTHCOTE PUBLIC GOLF COURSE		
Project ID: 115175M		**Eurofins Analytical Services Manager : Harry Bacalis**

Sample Detail						Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794													X		
17	115175M_TP05_0.6	May 24, 2023		Soil	M23-My0069706		X								
18	115175M_TP07_0.8	May 25, 2023		Soil	M23-My0069707		X								
19	115175M_TP07_1.0	May 25, 2023		Soil	M23-My0069708		X								
20	115175M_TP09_0.5	May 25, 2023		Soil	M23-My0069709		X								
21	115175M_TP09_0.9	May 25, 2023		Soil	M23-My0069710		X								
22	115175M_TP11_0.9	May 25, 2023		Soil	M23-My0069711		X								
23	115175M_TP13_0.8	May 25, 2023		Soil	M23-My0069712		X								
24	115175M_TP15_0.6	May 25, 2023		Soil	M23-My0069713		X								
25	115175M_TP15_0.8	May 25, 2023		Soil	M23-My0069714		X								

Company Name:	Prensa Pty Ltd VIC
Address:	5 Burwood Rd
	Hawthorn
	VIC 3122
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE
Project ID:	115175M

Order No.:	
Report #:	993591
Phone:	9508 0100
Fax:	

Received:	May 26, 2023 2:44 PM
Due:	Jun 2, 2023
Priority:	5 Day
Contact Name:	Sian Berner

Eurofins Analytical Services Manager : Harry Bacalis

	Sample Detail					Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794													X		
26	115175M_FB01_24MAY23	May 24, 2023		Water	M23-My0069715		X								
27	115175M_FB02_24MAY23	May 25, 2023		Water	M23-My0069716		X								
28	115175M_TB01_24MAY23	May 24, 2023		Soil	M23-My0069717		X								
29	115175M_QC03_24MAY23	May 25, 2023		Soil	M23-My0069718		X								
30	115175M_QC04_24MAY23	May 25, 2023		Soil	M23-My0069719		X								
Test Counts						3	18	3	3	3	6	10	3	3	6

Date Reported:Jun 06, 2023

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

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

Terms

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

QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Iron	mg/kg	< 20			20	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chloride	mg/kg	< 5			5	Pass	
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Conductivity (1:5 aqueous extract at 25 °C as rec.)	uS/cm	< 10			10	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Sulphate (as SO4)	mg/kg	< 30			30	Pass	
Total Organic Carbon	%	< 0.1			0.1	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	108			70-130	Pass	
TRH C10-C14	%	83			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
TRH >C10-C16	%	87			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	79			70-130	Pass	
Toluene	%	82			70-130	Pass	
Ethylbenzene	%	79			70-130	Pass	
m&p-Xylenes	%	82			70-130	Pass	
Xylenes - Total*	%	83			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	88			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	82			70-130	Pass	
Acenaphthylene	%	83			70-130	Pass	
Anthracene	%	86			70-130	Pass	
Benz(a)anthracene	%	114			70-130	Pass	
Benzo(a)pyrene	%	97			70-130	Pass	
Benzo(b&j)fluoranthene	%	87			70-130	Pass	
Benzo(g.h.i)perylene	%	114			70-130	Pass	
Benzo(k)fluoranthene	%	78			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a.h)anthracene	%	74			70-130	Pass	
Fluoranthene	%	93			70-130	Pass	
Fluorene	%	81			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	100			70-130	Pass	
Naphthalene	%	76			70-130	Pass	
Phenanthrene	%	87			70-130	Pass	
Pyrene	%	97			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	86			80-120	Pass	
Barium	%	84			80-120	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Beryllium	%	91			80-120	Pass	
Boron	%	95			80-120	Pass	
Cadmium	%	103			80-120	Pass	
Chromium	%	92			80-120	Pass	
Cobalt	%	94			80-120	Pass	
Copper	%	90			80-120	Pass	
Iron	%	98			80-120	Pass	
Lead	%	93			80-120	Pass	
Manganese	%	88			80-120	Pass	
Mercury	%	118			80-120	Pass	
Molybdenum	%	85			80-120	Pass	
Nickel	%	87			80-120	Pass	
Selenium	%	84			80-120	Pass	
Silver	%	111			80-120	Pass	
Tin	%	83			80-120	Pass	
Zinc	%	84			80-120	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	75			70-130	Pass	
1.1.1-Trichloroethane	%	75			70-130	Pass	
1.2-Dichlorobenzene	%	97			70-130	Pass	
1.2-Dichloroethane	%	90			70-130	Pass	
Benzene	%	86			70-130	Pass	
Ethylbenzene	%	83			70-130	Pass	
m&p-Xylenes	%	97			70-130	Pass	
Toluene	%	88			70-130	Pass	
Trichloroethene	%	74			70-130	Pass	
Xylenes - Total*	%	95			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	84			70-130	Pass	
4.4'-DDD	%	73			70-130	Pass	
4.4'-DDE	%	80			70-130	Pass	
4.4'-DDT	%	89			70-130	Pass	
a-HCH	%	71			70-130	Pass	
Aldrin	%	75			70-130	Pass	
b-HCH	%	78			70-130	Pass	
d-HCH	%	73			70-130	Pass	
Dieldrin	%	86			70-130	Pass	
Endosulfan I	%	76			70-130	Pass	
Endosulfan II	%	80			70-130	Pass	
Endosulfan sulphate	%	91			70-130	Pass	
Endrin	%	89			70-130	Pass	
Endrin aldehyde	%	77			70-130	Pass	
Endrin ketone	%	83			70-130	Pass	
g-HCH (Lindane)	%	70			70-130	Pass	
Heptachlor	%	80			70-130	Pass	
Heptachlor epoxide	%	88			70-130	Pass	
Hexachlorobenzene	%	74			70-130	Pass	
Methoxychlor	%	78			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	82			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phenols (Halogenated)							
2-Chlorophenol	%	83			25-140	Pass	
2.4-Dichlorophenol	%	36			25-140	Pass	
2.4.5-Trichlorophenol	%	41			25-140	Pass	
2.4.6-Trichlorophenol	%	38			25-140	Pass	
2.6-Dichlorophenol	%	58			25-140	Pass	
4-Chloro-3-methylphenol	%	39			25-140	Pass	
Pentachlorophenol	%	40			25-140	Pass	
Tetrachlorophenols - Total	%	34			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	94			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	63			25-140	Pass	
2-Nitrophenol	%	75			25-140	Pass	
2.4-Dimethylphenol	%	41			25-140	Pass	
2.4-Dinitrophenol	%	93			25-140	Pass	
2-Methylphenol (o-Cresol)	%	73			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	51			25-140	Pass	
4-Nitrophenol	%	39			25-140	Pass	
Dinoseb	%	40			25-140	Pass	
Phenol	%	58			25-140	Pass	
LCS - % Recovery							
% Clay	%	123			70-130	Pass	
Chloride	%	114			70-130	Pass	
Chromium (hexavalent)	%	106			70-130	Pass	
Conductivity (1:5 aqueous extract at 25 °C as rec.)	%	103			70-130	Pass	
Cyanide (total)	%	88			70-130	Pass	
Fluoride	%	114			70-130	Pass	
Sulphate (as SO4)	%	125			70-130	Pass	
Total Organic Carbon	%	101			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M23-My0073909	NCP	%	86			70-130	Pass	
TRH C10-C14	M23-My0079076	NCP	%	108			70-130	Pass	
TRH C6-C10	M23-My0073909	NCP	%	85			70-130	Pass	
TRH >C10-C16	M23-My0079076	NCP	%	105			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M23-My0073909	NCP	%	71			70-130	Pass	
Toluene	M23-My0073909	NCP	%	80			70-130	Pass	
Ethylbenzene	M23-My0073909	NCP	%	78			70-130	Pass	
m&p-Xylenes	M23-My0073909	NCP	%	75			70-130	Pass	
o-Xylene	M23-My0073909	NCP	%	71			70-130	Pass	
Xylenes - Total*	M23-My0073909	NCP	%	74			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M23-My0073909	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M23-My0069906	NCP	%	92			70-130	Pass	
Acenaphthylene	M23-My0069906	NCP	%	87			70-130	Pass	
Anthracene	M23-My0069906	NCP	%	97			70-130	Pass	
Benz(a)anthracene	M23-My0069906	NCP	%	70			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	M23-My0069906	NCP	%	85			70-130	Pass	
Benzo(b&j)fluoranthene	M23-My0069906	NCP	%	80			70-130	Pass	
Benzo(g.h.i)perylene	M23-My0069906	NCP	%	98			70-130	Pass	
Benzo(k)fluoranthene	M23-My0069906	NCP	%	100			70-130	Pass	
Chrysene	M23-My0069906	NCP	%	118			70-130	Pass	
Dibenz(a.h)anthracene	M23-My0069906	NCP	%	81			70-130	Pass	
Fluoranthene	M23-My0069906	NCP	%	103			70-130	Pass	
Fluorene	M23-My0069906	NCP	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M23-My0069906	NCP	%	87			70-130	Pass	
Naphthalene	M23-My0069906	NCP	%	101			70-130	Pass	
Phenanthrene	M23-My0069906	NCP	%	92			70-130	Pass	
Pyrene	M23-My0069906	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M23-My0075030	NCP	%	107			75-125	Pass	
Barium	M23-My0075030	NCP	%	103			75-125	Pass	
Beryllium	M23-My0075030	NCP	%	116			75-125	Pass	
Boron	M23-My0075030	NCP	%	100			75-125	Pass	
Cadmium	M23-My0075030	NCP	%	110			75-125	Pass	
Chromium	M23-My0075030	NCP	%	80			75-125	Pass	
Cobalt	M23-My0075030	NCP	%	115			75-125	Pass	
Copper	M23-My0075030	NCP	%	107			75-125	Pass	
Lead	M23-My0076411	NCP	%	94			75-125	Pass	
Manganese	M23-My0076411	NCP	%	90			75-125	Pass	
Mercury	M23-My0075030	NCP	%	124			75-125	Pass	
Molybdenum	M23-My0075030	NCP	%	108			75-125	Pass	
Nickel	M23-My0075030	NCP	%	82			75-125	Pass	
Selenium	M23-My0075030	NCP	%	102			75-125	Pass	
Silver	M23-My0075030	NCP	%	113			75-125	Pass	
Tin	M23-My0075030	NCP	%	107			75-125	Pass	
Zinc	M23-My0075030	NCP	%	93			75-125	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	M23-Jn0002402	NCP	%	105			70-130	Pass	
1.1.1-Trichloroethane	M23-My0080034	NCP	%	86			70-130	Pass	
1.2-Dichlorobenzene	M23-My0080034	NCP	%	102			70-130	Pass	
1.2-Dichloroethane	M23-My0080034	NCP	%	87			70-130	Pass	
Trichloroethene	M23-My0080034	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M23-My0065509	NCP	%	102			70-130	Pass	
4.4'-DDD	M23-My0065509	NCP	%	110			70-130	Pass	
4.4'-DDE	M23-My0065509	NCP	%	104			70-130	Pass	
4.4'-DDT	M23-My0065509	NCP	%	89			70-130	Pass	
a-HCH	M23-My0065509	NCP	%	101			70-130	Pass	
Aldrin	M23-My0065509	NCP	%	104			70-130	Pass	
b-HCH	M23-My0065509	NCP	%	94			70-130	Pass	
d-HCH	M23-My0065509	NCP	%	106			70-130	Pass	
Dieldrin	M23-My0065509	NCP	%	118			70-130	Pass	
Endosulfan I	M23-My0065509	NCP	%	102			70-130	Pass	
Endosulfan II	M23-My0065509	NCP	%	99			70-130	Pass	
Endosulfan sulphate	M23-My0065509	NCP	%	97			70-130	Pass	
Endrin	M23-My0065509	NCP	%	85			70-130	Pass	
Endrin aldehyde	M23-My0065509	NCP	%	117			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	M23-My0065509	NCP	%	108			70-130	Pass	
g-HCH (Lindane)	M23-My0065509	NCP	%	105			70-130	Pass	
Heptachlor	M23-My0065509	NCP	%	89			70-130	Pass	
Heptachlor epoxide	M23-My0065509	NCP	%	96			70-130	Pass	
Hexachlorobenzene	M23-My0065509	NCP	%	108			70-130	Pass	
Methoxychlor	M23-My0065509	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M23-My0053050	NCP	%	65			30-130	Pass	
2.4.5-Trichlorophenol	M23-My0053050	NCP	%	61			30-130	Pass	
2.4.6-Trichlorophenol	M23-My0053050	NCP	%	51			30-130	Pass	
4-Chloro-3-methylphenol	M23-My0040173	NCP	%	45			30-130	Pass	
Pentachlorophenol	M23-My0053050	NCP	%	79			30-130	Pass	
Tetrachlorophenols - Total	M23-My0053050	NCP	%	74			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M23-My0053050	NCP	%	101			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M23-My0040173	NCP	%	37			30-130	Pass	
2-Nitrophenol	M23-My0053050	NCP	%	33			30-130	Pass	
2.4-Dimethylphenol	M23-My0040173	NCP	%	72			30-130	Pass	
2.4-Dinitrophenol	M23-My0040173	NCP	%	89			30-130	Pass	
2-Methylphenol (o-Cresol)	M23-My0053050	NCP	%	40			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M23-My0040173	NCP	%	46			30-130	Pass	
4-Nitrophenol	M23-My0053050	NCP	%	95			30-130	Pass	
Dinoseb	M23-My0053050	NCP	%	57			30-130	Pass	
Phenol	M23-My0053050	NCP	%	42			30-130	Pass	
Spike - % Recovery									
				Result 1					
Fluoride	M23-My0069613	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2.4-Dichlorophenol	M23-My0055047	NCP	%	55			30-130	Pass	
2.6-Dichlorophenol	M23-My0055047	NCP	%	49			30-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M23-My0069902	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M23-My0069641	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M23-My0069641	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M23-My0069641	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	M23-My0069902	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M23-My0069641	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M23-My0069641	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M23-My0069641	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M23-My0069902	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M23-My0069902	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M23-My0069902	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M23-My0069902	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M23-My0069902	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M23-My0069902	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M23-My0069902	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M23-My0075241	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M23-My0075030	NCP	mg/kg	5.8	5.6	4.7	30%	Pass	
Barium	M23-My0075030	NCP	mg/kg	51	49	2.4	30%	Pass	
Beryllium	M23-My0075030	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M23-My0075030	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Cadmium	M23-My0075030	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M23-My0075030	NCP	mg/kg	42	41	2.4	30%	Pass	
Cobalt	M23-My0075030	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	M23-My0075030	NCP	mg/kg	33	33	1.3	30%	Pass	
Lead	M23-My0075030	NCP	mg/kg	13	13	2.5	30%	Pass	
Manganese	M23-My0075030	NCP	mg/kg	600	580	3.5	30%	Pass	
Mercury	M23-My0075030	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M23-My0075030	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M23-My0075030	NCP	mg/kg	39	39	1.2	30%	Pass	
Selenium	M23-My0075030	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M23-My0075030	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	M23-My0075030	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M23-My0075030	NCP	mg/kg	40	39	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron	M23-My0075030	NCP	mg/kg	46000	45000	3.2	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M23-My0069639	NCP	mg/kg	1.5	0.9	7.2	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.3-Dichlorobenzene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichloropropane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3.5-Trimethylbenzene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.4-Dichlorobenzene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Butanone (MEK)	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Propanone (Acetone)	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chlorotoluene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Allyl chloride	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromobenzene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromochloromethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromodichloromethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromoform	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromomethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon disulfide	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon Tetrachloride	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorobenzene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroform	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloromethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.2-Dichloroethene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.3-Dichloropropene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromochloromethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromomethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorodifluoromethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Iodomethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Isopropyl benzene (Cumene)	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Methylene Chloride	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Styrene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1.2-Dichloroethene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1.3-Dichloropropene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	M23-My0069639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M23-My0065640	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4.4'-DDD	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDE	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDT	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-HCH	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-HCH	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-HCH	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Heptachlor epoxide	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M23-My0065640	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	M23-My0065640	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	M23-My0065640	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	M23-My0065640	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	M23-My0065640	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	M23-My0065640	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	M23-My0065640	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	M23-My0065640	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	M23-My0065640	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	M23-My0065640	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M23-My0065640	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2.4-Dichlorophenol	M23-My0065640	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2.4.5-Trichlorophenol	M23-My0065640	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2.4.6-Trichlorophenol	M23-My0065640	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2.6-Dichlorophenol	M23-My0065640	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M23-My0065640	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M23-My0065640	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M23-My0065640	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4.6-dinitrophenol	M23-My0065640	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4.6-dinitrophenol	M23-My0065640	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Nitrophenol	M23-My0065640	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2.4-Dimethylphenol	M23-My0065640	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2.4-Dinitrophenol	M23-My0065640	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M23-My0065640	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M23-My0065640	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M23-My0065640	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M23-My0065640	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M23-My0065640	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chloride	M23-My0069636	NCP	mg/kg	44	8.6	33	30%	Fail	Q15
Conductivity (1:5 aqueous extract at 25 °C as rec.)	M23-My0073838	NCP	uS/cm	130	150	13	30%	Pass
Cyanide (total)	M23-My0071970	NCP	mg/kg	< 5	< 5	<1	30%	Pass
pH (1:5 Aqueous extract at 25 °C as rec.)	M23-My0073550	NCP	pH Units	8.8	8.8	pass	30%	Pass
pH (units)(1:5 soil:CaCl2 extract at 25 °C as rec.)	M23-My0073838	NCP	pH Units	6.1	6.1	pass	30%	Pass
Sulphate (as SO4)	M23-My0069636	NCP	mg/kg	< 30	31	3.8	30%	Pass
Total Organic Carbon	M23-My0065663	NCP	%	0.1	< 0.1	84	30%	Fail	Q15
Duplicate								
Cation Exchange Capacity				Result 1	Result 2	RPD		
Cation Exchange Capacity	M23-My0065896	NCP	meq/100g	11	11	<1	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	M23-My0069693	CP	%	18	19	5.3	30%	Pass

Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M23-My0069694	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M23-My0069698	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Catherine Wilson	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Joseph Edouard	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Metal
Mary Makarios	Senior Analyst-Inorganic
Joseph Edouard	Senior Analyst-Organic
Mary Makarios	Senior Analyst-Sample Properties
Edward Lee	Senior Analyst-Organic
Jonathon Angell	Senior Analyst-Inorganic
Emily Rosenberg	Senior Analyst-Metal
Carroll Lee	Senior Analyst-Volatile

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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Environment Testing

Prensa Pty Ltd VIC
5 Burwood Rd
Hawthorn
VIC 3122

Attention:	**Sian Berner**

Report	**993591-W**
Project name	SCA AIS NORTHCOTE PUBLIC GOLF COURSE
Project ID	115175M
Received Date	May 26, 2023

Client Sample ID			115175M_R01_24MAY23	115175M_R02_24MAY23
Sample Matrix			Water	Water
Eurofins Sample No.			M23-My0069699	M23-My0069700
Date Sampled			May 24, 2023	May 25, 2023
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.001	mg/L	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	93	56
p-Terphenyl-d14 (surr.)	1	%	117	61
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001
Zinc	0.005	mg/L	< 0.005	< 0.005

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175
ABN : 50 005 085 521 Telephone: +61 3 8564 5000

Date Reported: Jun 06, 2023

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Report Number: 993591-W

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite 7C: PAH/TRH/BTEXN/M12			
Polycyclic Aromatic Hydrocarbons	Melbourne	May 27, 2023	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Melbourne	May 27, 2023	28 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Company Name:	Prensa Pty Ltd VIC
Address:	5 Burwood Rd
	Hawthorn
	VIC 3122
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE
Project ID:	115175M

Order No.:	
Report #:	993591
Phone:	9508 0100
Fax:	

Received:	May 26, 2023 2:44 PM
Due:	Jun 2, 2023
Priority:	5 Day
Contact Name:	Sian Berner

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794													X		
External Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	115175M_TP02_0.6	May 24, 2023		Soil	M23-My0069690						X	X			X
2	115175M_TP03_0.55	May 24, 2023		Soil	M23-My0069691	X		X			X	X	X		
3	115175M_TP03_0.8	May 24, 2023		Soil	M23-My0069692						X	X			X
4	115175M_TP05_1.0	May 25, 2023		Soil	M23-My0069693						X	X			X
5	115175M_TP07_0.5	May 25, 2023		Soil	M23-My0069694	X		X			X	X	X		
6	115175M_TP11_0.55	May 25, 2023		Soil	M23-My0069695						X	X			X
7	115175M_TP13_0.6	May 25, 2023		Soil	M23-My0069696						X	X			X

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Date Reported:Jun 06, 2023

Company Name:	Prensa Pty Ltd VIC	**Order No.:**	
Address:	5 Burwood Rd	**Report #:** 993591	**Received:** May 26, 2023 2:44 PM
	Hawthorn	**Phone:** 9508 0100	**Due:** Jun 2, 2023
	VIC 3122	**Fax:**	**Priority:** 5 Day
			Contact Name: Sian Berner
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE		
Project ID:	115175M		

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail					Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254					X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794												X		
8	115175M_TP15_0.5	May 25, 2023	Soil	M23-My0069697						X	X			X
9	115175M_TP15_1.0	May 25, 2023	Soil	M23-My0069698	X		X			X	X	X		
10	115175M_R01_24MAY23	May 24, 2023	Water	M23-My0069699				X	X					
11	115175M_R02_24MAY23	May 25, 2023	Water	M23-My0069700				X	X					
12	115175M_QC01_24MAY23	May 24, 2023	Soil	M23-My0069701				X	X		X			
13	115175M_TP01_0.5	May 24, 2023	Soil	M23-My0069702		X								
14	115175M_TP01_0.6	May 24, 2023	Soil	M23-My0069703		X								
15	115175M_TP02_0.7	May 24, 2023	Soil	M23-My0069704		X								
16	115175M_TP05_0.5	May 24, 2023	Soil	M23-My0069705		X								

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Date Reported:Jun 06, 2023

Company Name:	Prensa Pty Ltd VIC
Address:	5 Burwood Rd
	Hawthorn
	VIC 3122
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE
Project ID:	115175M

Order No.:	
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Received:	May 26, 2023 2:44 PM
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Contact Name:	Sian Berner

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794													X		
17	115175M_TP05_0.6	May 24, 2023		Soil	M23-My0069706		X								
18	115175M_TP07_0.8	May 25, 2023		Soil	M23-My0069707		X								
19	115175M_TP07_1.0	May 25, 2023		Soil	M23-My0069708		X								
20	115175M_TP09_0.5	May 25, 2023		Soil	M23-My0069709		X								
21	115175M_TP09_0.9	May 25, 2023		Soil	M23-My0069710		X								
22	115175M_TP11_0.9	May 25, 2023		Soil	M23-My0069711		X								
23	115175M_TP13_0.8	May 25, 2023		Soil	M23-My0069712		X								
24	115175M_TP15_0.6	May 25, 2023		Soil	M23-My0069713		X								
25	115175M_TP15_0.8	May 25, 2023		Soil	M23-My0069714		X								

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Date Reported:Jun 06, 2023

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Address:	5 Burwood Rd
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Sample Detail					Chloride	HOLD	Sulphate (as SO4)	Polycyclic Aromatic Hydrocarbons	Metals M8	VIC EPA Metals : Metals M17	Moisture Set	NEPM Screen for Soil Classification	Vic EPA 1828.2 Table 3 (Solids)	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254					X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794												X		
26	115175M_FB01_24MAY23	May 24, 2023		Water	M23-My0069715		X								
27	115175M_FB02_24MAY23	May 25, 2023		Water	M23-My0069716		X								
28	115175M_TB01_24MAY23	May 24, 2023		Soil	M23-My0069717		X								
29	115175M_QC03_24MAY23	May 25, 2023		Soil	M23-My0069718		X								
30	115175M_QC04_24MAY23	May 25, 2023		Soil	M23-My0069719		X								
Test Counts					3	18	3	3	3	6	10	3	3	6

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175
ABN : 50 005 085 521 Telephone: +61 3 8564 5000

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Date Reported:Jun 06, 2023

General

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

Holding Times

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

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

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

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

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

Units

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

Terms

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

QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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

QC Data General Comments

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

![eurofins logo] **Environment Testing**

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	116			70-130	Pass	
Acenaphthylene	%	111			70-130	Pass	
Anthracene	%	79			70-130	Pass	
Benz(a)anthracene	%	122			70-130	Pass	
Benzo(a)pyrene	%	106			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g.h.i)perylene	%	71			70-130	Pass	
Benzo(k)fluoranthene	%	71			70-130	Pass	
Chrysene	%	105			70-130	Pass	
Dibenz(a.h)anthracene	%	103			70-130	Pass	
Fluoranthene	%	95			70-130	Pass	
Fluorene	%	105			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	120			70-130	Pass	
Naphthalene	%	122			70-130	Pass	
Phenanthrene	%	89			70-130	Pass	
Pyrene	%	95			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	99			80-120	Pass	
Cadmium	%	102			80-120	Pass	
Chromium	%	96			80-120	Pass	
Copper	%	97			80-120	Pass	
Lead	%	102			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury			%	87			80-120	Pass	
Nickel			%	98			80-120	Pass	
Zinc			%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M23-My0067258	NCP	%	101			75-125	Pass	
Cadmium	M23-My0067258	NCP	%	103			75-125	Pass	
Chromium	M23-My0067258	NCP	%	98			75-125	Pass	
Copper	M23-My0067258	NCP	%	98			75-125	Pass	
Lead	M23-My0067258	NCP	%	104			75-125	Pass	
Mercury	M23-My0067258	NCP	%	94			75-125	Pass	
Nickel	M23-My0067258	NCP	%	98			75-125	Pass	
Zinc	M23-My0067258	NCP	%	102			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M23-My0060021	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M23-My0067258	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M23-My0067258	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M23-My0067258	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M23-My0067258	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	M23-My0067258	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M23-My0067258	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M23-My0067258	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M23-My0067258	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175

Date Reported: Jun 06, 2023   *ABN : 50 005 085 521 Telephone: +61 3 8564 5000*   *Page 9 of 10*   *Report Number: 993591-W*

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Catherine Wilson	Analytical Services Manager
Joseph Edouard	Senior Analyst-Organic
Mary Makarios	Senior Analyst-Metal

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Company Name:	Prensa Pty Ltd VIC	Order No.:		Received:	Jun 8, 2023 5:39 PM
Address:	5 Burwood Rd	Report #:	997388	Due:	Jun 19, 2023
	Hawthorn	Phone:	9508 0100	Priority:	5 Day
	VIC 3122	Fax:		Contact Name:	Sian Berner
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE				
Project ID:	115175M				

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Benzo(a)pyrene	Fluoride	AUS Leaching Procedure	VIC EPA Metals : Metals M17	Moisture Set	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	115175M_TP15_0.5	May 25, 2023		AUS Leachate	M23-Jn0021448	X		X			
2	115175M_TP01_0.3	May 26, 2023		Soil	M23-Jn0021449		X			X	
3	115175M_TP05_1.0	May 25, 2023		Soil	M23-Jn0021450		X			X	
4	115175M_TP11_0.55	May 25, 2023		Soil	M23-Jn0021451		X			X	
5	115175M_TP02_0.6	May 24, 2023		Soil	M23-Jn0021452		X			X	
6	115175M_TP15_0.1	May 26, 2023		Soil	M23-Jn0021453		X			X	
7	115175M_TP10_0.3	May 26, 2023		Soil	M23-Jn0021454		X			X	
8	115175M_TP05_0.5	May 24, 2023		Soil	M23-Jn0021455				X	X	X

Company Name:	Prensa Pty Ltd VIC	Order No.:		Received:	Jun 8, 2023 5:39 PM
Address:	5 Burwood Rd	Report #:	997388	Due:	Jun 19, 2023
	Hawthorn	Phone:	9508 0100	Priority:	5 Day
	VIC 3122	Fax:		Contact Name:	Sian Berner
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE				
Project ID:	115175M				

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Benzo(a)pyrene	Fluoride	AUS Leaching Procedure	VIC EPA Metals : Metals M17	Moisture Set	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X
9	115175M_TP15_0.5	May 25, 2023		Soil	M23-Jn0021456		X			X	
Test Counts						1	7	1	1	8	1

Prensa Pty Ltd VIC
5 Burwood Rd
Hawthorn
VIC 3122

Attention:	Sian Berner

Report	**997388-L**
Project name	SCA AIS NORTHCOTE PUBLIC GOLF COURSE
Project ID	115175M
Received Date	Jun 08, 2023

Client Sample ID			**115175M_TP15_0.5**
Sample Matrix			**AUS Leachate**
Eurofins Sample No.			**M23-Jn0021448**
Date Sampled			**May 25, 2023**
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.0005	mg/L	< 0.0005
AUS Leaching Procedure			
Leachate Fluid[C01]		comment	1.0
pH (initial)	0.1	pH Units	5.4
pH (Leachate fluid)	0.1	pH Units	5.0
pH (off)	0.1	pH Units	5.1

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Jun 09, 2023	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
AUS Leaching Procedure			
pH (initial)	Melbourne	Jun 09, 2023	0 Days
- Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes			
pH (Leachate fluid)	Melbourne	Jun 09, 2023	0 Days
- Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes			
pH (off)	Melbourne	Jun 09, 2023	0 Days
- Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes			

Company Name:	Prensa Pty Ltd VIC	Order No.:		Received:	Jun 8, 2023 5:39 PM
Address:	5 Burwood Rd	Report #:	997388	Due:	Jun 19, 2023
	Hawthorn	Phone:	9508 0100	Priority:	5 Day
	VIC 3122	Fax:		Contact Name:	Sian Berner
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE				
Project ID:	115175M				

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Benzo(a)pyrene	Fluoride	AUS Leaching Procedure	VIC EPA Metals : Metals M17	Moisture Set	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	115175M_TP15_0.5	May 25, 2023		AUS Leachate	M23-Jn0021448	X		X			
2	115175M_TP01_0.3	May 26, 2023		Soil	M23-Jn0021449		X			X	
3	115175M_TP05_1.0	May 25, 2023		Soil	M23-Jn0021450		X			X	
4	115175M_TP11_0.55	May 25, 2023		Soil	M23-Jn0021451		X			X	
5	115175M_TP02_0.6	May 24, 2023		Soil	M23-Jn0021452		X			X	
6	115175M_TP15_0.1	May 26, 2023		Soil	M23-Jn0021453		X			X	
7	115175M_TP10_0.3	May 26, 2023		Soil	M23-Jn0021454		X			X	
8	115175M_TP05_0.5	May 24, 2023		Soil	M23-Jn0021455				X	X	X

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175
ABN : 50 005 085 521 Telephone: +61 3 8564 5000

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Date Reported:Jun 14, 2023

Company Name:	Prensa Pty Ltd VIC	**Order No.:**	
Address:	5 Burwood Rd	**Report #:** 997388	
	Hawthorn	**Phone:** 9508 0100	
	VIC 3122	**Fax:**	
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE		
Project ID:	115175M		

Received:	Jun 8, 2023 5:39 PM
Due:	Jun 19, 2023
Priority:	5 Day
Contact Name:	Sian Berner

Eurofins Analytical Services Manager : Harry Bacalis

Sample Detail						Benzo(a)pyrene	Fluoride	AUS Leaching Procedure	VIC EPA Metals : Metals M17	Moisture Set	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X
9	115175M_TP15_0.5	May 25, 2023		Soil	M23-Jn0021456		X			X	
Test Counts						1	7	1	1	8	1

Date Reported:Jun 14, 2023

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

Units

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

Terms

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

QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other

Authorised by:

Harry Bacalis	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Mary Makarios	Senior Analyst-Sample Properties

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175
ABN : 50 005 085 521 Telephone: +61 3 8564 5000

Date Reported: Jun 14, 2023

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Report Number: 997388-L

eurofins | Environment Testing

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Prensa Pty Ltd VIC

5 Burwood Rd

Hawthorn

VIC 3122

Attention:	Sian Berner

Report	997388-S
Project name	SCA AIS NORTHCOTE PUBLIC GOLF COURSE
Project ID	115175M
Received Date	Jun 08, 2023

Client Sample ID			115175M_TP01_0.3	115175M_TP05_1.0	115175M_TP11_0.55	115175M_TP02_0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Jn0021449	M23-Jn0021450	M23-Jn0021451	M23-Jn0021452
Date Sampled			May 26, 2023	May 25, 2023	May 25, 2023	May 24, 2023
Test/Reference	LOR	Unit				
Fluoride	100	mg/kg	< 100	< 100	< 100	220
Sample Properties						
% Moisture	1	%	17	18	8.4	18

Client Sample ID			115175M_TP15_0.1	115175M_TP10_0.3	115175M_TP05_0.5	115175M_TP15_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Jn0021453	M23-Jn0021454	M23-Jn0021455	M23-Jn0021456
Date Sampled			May 26, 2023	May 26, 2023	May 24, 2023	May 25, 2023
Test/Reference	LOR	Unit				
Fluoride	100	mg/kg	120	210	-	230
Sample Properties						
% Moisture	1	%	18	17	15	17
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	< 50	-
TRH C29-C36	50	mg/kg	-	-	< 50	-
TRH C10-C36 (Total)	50	mg/kg	-	-	< 50	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	< 100	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	-	-	< 100	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-

Client Sample ID			115175M_TP15_0.1	115175M_TP10_0.3	115175M_TP05_0.5	115175M_TP15_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Jn0021453	M23-Jn0021454	M23-Jn0021455	M23-Jn0021456
Date Sampled			May 26, 2023	May 26, 2023	May 24, 2023	May 25, 2023
Test/Reference	LOR	Unit				
BTEX						
Xylenes - Total*	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	103	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	-	54	-
p-Terphenyl-d14 (surr.)	1	%	-	-	76	-
Heavy Metals						
Arsenic	2	mg/kg	-	-	2.5	-
Barium	10	mg/kg	-	-	87	-
Beryllium	2	mg/kg	-	-	< 2	-
Boron	10	mg/kg	-	-	< 20	-
Cadmium	0.4	mg/kg	-	-	< 0.4	-
Chromium	5	mg/kg	-	-	63	-
Cobalt	5	mg/kg	-	-	13	-
Copper	5	mg/kg	-	-	16	-
Lead	5	mg/kg	-	-	17	-
Manganese	5	mg/kg	-	-	130	-
Mercury	0.1	mg/kg	-	-	0.1	-
Molybdenum	5	mg/kg	-	-	< 5	-
Nickel	5	mg/kg	-	-	36	-
Selenium	2	mg/kg	-	-	< 2	-
Silver	2	mg/kg	-	-	< 2	-
Tin	10	mg/kg	-	-	< 10	-
Zinc	5	mg/kg	-	-	30	-

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175
ABN : 50 005 085 521 Telephone: +61 3 8564 5000

Date Reported: Jun 14, 2023

Page 2 of 12
Report Number: 997388-S

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Fluoride	Melbourne	Jun 10, 2023	28 Days
- Method: LTM-INO-4150 Determination of Total Fluoride PART A – CIC			
VIC EPA Metals : Metals M17	Melbourne	Jun 09, 2023	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jun 08, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Eurofins Suite 7C: PAH/TRH/BTEXN/M12			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jun 09, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jun 09, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jun 09, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Jun 09, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jun 09, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals IWRG 621 : Metals M12	Melbourne	Jun 09, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

Company Name:	Prensa Pty Ltd VIC	Order No.:		Received:	Jun 8, 2023 5:39 PM
Address:	5 Burwood Rd	Report #:	997388	Due:	Jun 19, 2023
	Hawthorn	Phone:	9508 0100	Priority:	5 Day
	VIC 3122	Fax:		Contact Name:	Sian Berner
Project Name:	SCA AIS NORTHCOTE PUBLIC GOLF COURSE				
Project ID:	115175M				

Eurofins Analytical Services Manager : Harry Bacalis

	Sample Detail					Benzo(a)pyrene	Fluoride	AUS Leaching Procedure	VIC EPA Metals : Metals M17	Moisture Set	Eurofins Suite 7C: PAH/TRH/BTEXN/M12
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	115175M_TP15_0.5	May 25, 2023		AUS Leachate	M23-Jn0021448	X		X			
2	115175M_TP01_0.3	May 26, 2023		Soil	M23-Jn0021449		X			X	
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7	115175M_TP10_0.3	May 26, 2023		Soil	M23-Jn0021454		X			X	
8	115175M_TP05_0.5	May 24, 2023		Soil	M23-Jn0021455				X	X	X

Company Name: Prensa Pty Ltd VIC	**Order No.:**	**Received:** Jun 8, 2023 5:39 PM
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Hawthorn	**Phone:** 9508 0100	**Priority:** 5 Day
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Project ID: 115175M		**Eurofins Analytical Services Manager : Harry Bacalis**

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org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

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SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Fluoride	%	121			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	97			70-130	Pass	
TRH C10-C14	%	111			70-130	Pass	
TRH C6-C10	%	120			70-130	Pass	
TRH >C10-C16	%	112			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	111			70-130	Pass	
Ethylbenzene	%	106			70-130	Pass	
m&p-Xylenes	%	104			70-130	Pass	
Xylenes - Total*	%	105			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	101			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	103			70-130	Pass	
Acenaphthylene	%	103			70-130	Pass	
Anthracene	%	102			70-130	Pass	
Benz(a)anthracene	%	79			70-130	Pass	
Benzo(a)pyrene	%	107			70-130	Pass	
Benzo(b&j)fluoranthene	%	100			70-130	Pass	
Benzo(g.h.i)perylene	%	115			70-130	Pass	
Benzo(k)fluoranthene	%	128			70-130	Pass	
Chrysene	%	107			70-130	Pass	
Dibenz(a.h)anthracene	%	72			70-130	Pass	
Fluoranthene	%	82			70-130	Pass	
Fluorene	%	120			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	96			70-130	Pass	
Naphthalene	%	101			70-130	Pass	
Phenanthrene	%	79			70-130	Pass	
Pyrene	%	89			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	85			80-120	Pass	
Barium	%	90			80-120	Pass	
Beryllium	%	88			80-120	Pass	
Boron	%	85			80-120	Pass	
Cadmium	%	109			80-120	Pass	
Chromium	%	91			80-120	Pass	
Cobalt	%	91			80-120	Pass	
Copper	%	85			80-120	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead	%	89			80-120	Pass	
Manganese	%	91			80-120	Pass	
Mercury	%	102			80-120	Pass	
Molybdenum	%	88			80-120	Pass	
Nickel	%	84			80-120	Pass	
Selenium	%	85			80-120	Pass	
Silver	%	111			80-120	Pass	
Tin	%	89			80-120	Pass	
Zinc	%	85			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M23-Jn0021306	NCP	%	107			70-130	Pass	
TRH C10-C14	M23-Jn0021710	NCP	%	96			70-130	Pass	
TRH C6-C10	M23-Jn0021306	NCP	%	104			70-130	Pass	
TRH >C10-C16	M23-Jn0021710	NCP	%	89			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M23-Jn0021306	NCP	%	111			70-130	Pass	
Toluene	M23-Jn0021306	NCP	%	102			70-130	Pass	
Ethylbenzene	M23-Jn0021306	NCP	%	95			70-130	Pass	
m&p-Xylenes	M23-Jn0021306	NCP	%	93			70-130	Pass	
o-Xylene	M23-Jn0021306	NCP	%	98			70-130	Pass	
Xylenes - Total*	M23-Jn0021306	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M23-Jn0021306	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M23-Jn0019669	NCP	%	108			70-130	Pass	
Acenaphthylene	M23-Jn0019669	NCP	%	85			70-130	Pass	
Anthracene	M23-Jn0019669	NCP	%	81			70-130	Pass	
Benz(a)anthracene	M23-Jn0019669	NCP	%	73			70-130	Pass	
Benzo(a)pyrene	M23-Jn0019669	NCP	%	72			70-130	Pass	
Benzo(b&j)fluoranthene	M23-Jn0019669	NCP	%	104			70-130	Pass	
Benzo(g.h.i)perylene	M23-Jn0019669	NCP	%	103			70-130	Pass	
Benzo(k)fluoranthene	M23-Jn0019669	NCP	%	114			70-130	Pass	
Chrysene	M23-Jn0019669	NCP	%	101			70-130	Pass	
Dibenz(a.h)anthracene	M23-Jn0019669	NCP	%	71			70-130	Pass	
Fluoranthene	M23-Jn0019669	NCP	%	85			70-130	Pass	
Fluorene	M23-Jn0019669	NCP	%	123			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M23-Jn0019669	NCP	%	74			70-130	Pass	
Naphthalene	M23-Jn0019669	NCP	%	108			70-130	Pass	
Phenanthrene	M23-Jn0019669	NCP	%	76			70-130	Pass	
Pyrene	M23-Jn0019669	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M23-Jn0017286	NCP	%	78			75-125	Pass	
Barium	M23-Jn0017286	NCP	%	111			75-125	Pass	
Beryllium	M23-Jn0017286	NCP	%	102			75-125	Pass	
Boron	M23-Jn0017286	NCP	%	84			75-125	Pass	
Cadmium	M23-Jn0017286	NCP	%	102			75-125	Pass	
Chromium	M23-Jn0017286	NCP	%	103			75-125	Pass	
Cobalt	M23-Jn0017286	NCP	%	97			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	M23-Jn0017286	NCP	%	104			75-125	Pass	
Lead	M23-Jn0017286	NCP	%	103			75-125	Pass	
Manganese	M23-Jn0017286	NCP	%	81			75-125	Pass	
Mercury	M23-Jn0017286	NCP	%	102			75-125	Pass	
Molybdenum	M23-Jn0017286	NCP	%	102			75-125	Pass	
Nickel	M23-Jn0017286	NCP	%	97			75-125	Pass	
Selenium	M23-Jn0017286	NCP	%	80			75-125	Pass	
Silver	M23-Jn0017286	NCP	%	103			75-125	Pass	
Tin	M23-Jn0017286	NCP	%	109			75-125	Pass	
Zinc	M23-Jn0017286	NCP	%	100			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Fluoride	M23-Jn0023044	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	M23-Jn0021452	CP	%	18	18	2.4	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M23-Jn0021122	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M23-Jn0017172	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M23-Jn0017172	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M23-Jn0017172	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	M23-Jn0021122	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M23-Jn0017172	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M23-Jn0017172	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M23-Jn0017172	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M23-Jn0021122	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M23-Jn0021122	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M23-Jn0021122	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M23-Jn0021122	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M23-Jn0021122	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M23-Jn0021122	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M23-Jn0021122	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M23-Jn0027143	NCP	mg/kg	0.8	0.7	8.5	30%	Pass	
Fluorene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Phenanthrene	M23-Jn0027143	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M23-Jn0027143	NCP	mg/kg	0.8	0.7	9.2	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M23-Jn0017285	NCP	mg/kg	< 2	2.1	50	30%	Fail	Q15
Barium	M23-Jn0017285	NCP	mg/kg	340	410	17	30%	Pass
Beryllium	M23-Jn0017285	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Boron	M23-Jn0017285	NCP	mg/kg	17	27	49	30%	Fail	Q15
Cadmium	M23-Jn0017285	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M23-Jn0017285	NCP	mg/kg	40	43	8.5	30%	Pass
Cobalt	M23-Jn0017285	NCP	mg/kg	14	15	7.4	30%	Pass
Copper	M23-Jn0017285	NCP	mg/kg	6.6	7.0	6.7	30%	Pass
Lead	M23-Jn0017285	NCP	mg/kg	11	12	15	30%	Pass
Manganese	M23-Jn0017285	NCP	mg/kg	75	78	3.6	30%	Pass
Mercury	M23-Jn0017285	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M23-Jn0017285	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M23-Jn0017285	NCP	mg/kg	16	17	7.5	30%	Pass
Selenium	M23-Jn0017285	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M23-Jn0017285	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Tin	M23-Jn0017285	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M23-Jn0017285	NCP	mg/kg	15	16	4.3	30%	Pass

Date Reported: Jun 14, 2023

Eurofins Environment Testing 6 Monterey Road, Dandenong South, Victoria, Australia 3175
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Report Number: 997388-S

Environment Testing

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Harry Bacalis	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Harry Bacalis	Senior Analyst-Volatile
Joseph Edouard	Senior Analyst-Organic
Mary Makarios	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Metal
Mary Makarios	Senior Analyst-Sample Properties

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

CERTIFICATE OF ANALYSIS 37600

Client Details

Client	Prensa
Attention	Sian Berner
Address	Ground level, 5 Burwood Road, PO Box 6058, Hawthorn, VIC, 3122

Sample Details

Your Reference	**115175M -SCA AIS Northcote Public Golf Course**
Number of Samples	1 Soil
Date samples received	29/05/2023
Date completed instructions received	29/05/2023

Analysis Details

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

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

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

Report Details

Date results requested by	05/06/2023
Date of Issue	05/06/2023

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

Results Approved By

Tara White, Metals Team Leader
Tianna Milburn, Senior Chemist

Authorised By

Pamela Adams, Laboratory Manager

PAHs in Soil		
Our Reference		37600-1
Your Reference	UNITS	115175M_QC02_24MAY23
Date Sampled		24/05/2023
Type of sample		Soil
Date extracted	-	31/05/2023
Date analysed	-	03/06/2023
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j&k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d$_{14}$	%	64

Acid Extractable metals in soil		
Our Reference		37600-1
Your Reference	UNITS	115175M_QC02_24MAY23
Date Sampled		24/05/2023
Type of sample		Soil
Date digested	-	02/06/2023
Date analysed	-	02/06/2023
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	21
Copper	mg/kg	7
Lead	mg/kg	5
Mercury	mg/kg	<0.1
Nickel	mg/kg	14
Zinc	mg/kg	8

Moisture		
Our Reference		37600-1
Your Reference	UNITS	115175M_QC02_24MAY23
Date Sampled		24/05/2023
Type of sample		Soil
Date prepared	-	31/05/2023
Date analysed	-	01/06/2023
Moisture	%	17

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105°C for a minimum of 12 hours.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.

Client Reference: 115175M -SCA AIS Northcote Public Golf Course

Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
						Duplicate			Spike Recovery %	
Date extracted	-			31/05/2023	[NT]	[NT]	[NT]	[NT]	31/05/2023	[NT]
Date analysed	-			03/06/2023	[NT]	[NT]	[NT]	[NT]	03/06/2023	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Benzo(b,j&k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	112	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d$_{14}$	%		Org-022/025	64	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: PAHs in Soil

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date digested	-			02/06/2023	[NT]	[NT]	[NT]	[NT]	02/06/2023	[NT]
Date analysed	-			02/06/2023	[NT]	[NT]	[NT]	[NT]	02/06/2023	[NT]
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	[NT]	[NT]	88	[NT]
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	[NT]	[NT]	89	[NT]
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	[NT]	[NT]	125	[NT]
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	88	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

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

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

DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	<u>37600</u>
Client ID	Prensa
Project Reference	115175M -SCA AIS Northcote Public Golf Course
Date Issued	05/06/2023

QC DATA

All laboratory QC data was within the Envirolab Group's specifications.

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant.

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.