Swan River Ferry Expansion

Applecross: Preliminary Site Investigation

Public Transport Authority

4 September 2025

→ **The Power of Commitment**

Acknowledgement of Country

GHD acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the land, water and sky throughout Australia on which we do business. We recognise their strength, diversity, resilience and deep connections to Country. We pay our respects to Elders of the past, present and future, as they hold the memories, knowledges and spirit of Australia. GHD is committed to learning from Aboriginal and Torres Strait Islander peoples in the work we do.

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Executive summary

Background

The Public Transport Authority of Western Australia (PTA) is the primary supplier of public transport services in Western Australia (WA) and is one of three key transport agencies that work to coordinate a smarter, integrated, and optimised network for WA. Future expansion of ferry services at the Swan River is a natural progression to meet the needs of an expanding city, supporting activation of popular, high-density living riverside precincts. GHD understands that the PTA is undertaking feasibility studies to identify appropriate development envelopes (DEs) for future landings to enable the expansion of the Transperth ferry services (the 'Project'). Six DEs are understood to be considered as future landings comprising Applecross, Barrack Street Jetty, Elizabeth Quay, Ellam Street, and Matilda Bay.

The PTA has identified that contamination is a key environmental issue for the Project, and additional information in the form of a Preliminary Site investigation[1] (PSI) to inform feasibility studies for DEs are required to identify Contaminants of Potential Concern (CoPC), which may pose risk to human health and/or the environment.

GHD has been engaged to complete a standalone PSI report for each of the six DEs identified above. This report has been developed for Applecross (herein referred to as 'the Site') and represented by the 'Survey Boundary' presented on Figure 1 (Appendix A).

Purpose and objectives

The purpose of this report is to present a preliminary assessment of potential risks posed by contamination to relevant receptors at the Site in the form of human health, the environment and/or environmental values with respect to proposed development. The outcomes of the PSI will be used to inform decision-making for construction of the proposed Applecross Ferry Landing.

The objectives of this report are to present the findings of a desktop study and site inspection (including limited soil sampling), to develop a preliminary Conceptual Site Model (CSM; which identifies the known and potential sources of contamination, transport and exposure pathways, and receptors), and to determine the need (if any) for further action (e.g., further investigation work or other management) with respect to potential risks posed by contamination to facilitate construction of the proposed ferry landing at the Site.

Scope of work

To meet the stated objectives the below scope of the works was completed for the PSI with reference to the Department of Water and Environmental Regulation (DWER), *Assessment and Management of Contaminated Sites* (DWER 2021).

– Phase 1: Desktop study and data review.
– Phase 2: Site inspection
– Phase 3: PSI Reporting (this report).

Site description

The Site comprises a portion of the Applecross foreshore area bounded by the Canning Highway/Canning Bridge, the Raffles Hotel complex, Canning Beach Road, and the Swan River. The current use of the Site is understood to be for recreational purposes, with a footpath, principal shared path (cycleway) and minor grassed areas/garden beds present within the landside portion of the Site. A small jetty/floating pontoon extends from the eastern foreshore of the Site into the Swan River and small boats are moored in the Swan River to the north and northwest of the Site. The northern portion of the Site (waterside) consists of open water (Swan River).

Based on the available information, it is understood that portions of the Site were historically included in the Raffles Hotel complex landholdings with the balance used as a road. The current Site layout (dominated by pedestrian/cycling infrastructure) has been apparent since at least 2008; however, prior to this the Site layout does not appear to have varied substantially since as early as 1942, with no evidence of major landfilling or variability in

[1] Including limited soil sampling at the following investigation areas; Applecross, Ellam Street, Matilda Bay Option 1 and Matilda Bay Option 2.

land use apparent following review of historical aerial imagery and Certificate of Title (CoT). There are no known potentially contaminating activities currently occurring on the Site.

Site understanding and CSM summary

The Site comprises a portion of the Applecross foreshore area bounded by the Canning Highway/Canning Bridge, the Raffles Hotel complex, Canning Beach Road, and the Swan River. The current use of the Site is understood to be for recreational purposes, with a footpath, principal shared path (cycleway) and minor grassed areas/garden beds present within the landside portion of the Site. A small jetty/floating pontoon extends from the eastern foreshore of the Site into the Swan River and small boats are moored in the Swan River to the north and northwest of the Site. The northern portion of the Site (waterside) consists of open water (Swan River).

Based on the available information, it is understood that portions of the Site were historically included in the Raffles Hotel complex landholdings with the balance used as a road. The current Site layout (dominated by pedestrian/cycling infrastructure) has been apparent since at least 2008; however, prior to this the Site layout does not appear to have varied substantially since as early as 1942, with no evidence of major landfilling or variability in land use apparent following review of historical aerial imagery and CoT. There are no known potentially contaminating activities currently occurring on the Site.

In developing a preliminary CSM, three Areas of Potential Environmental Concern (APECs) were identified, comprising possible fill materials within the subsurface (APEC 1), surface water and sediments (APEC 2), and possible redundant subsurface infrastructure (APEC 3). A potentially complete source-pathway-receptor linkage for APEC 2 (surface water and sediment) was identified as the quality of these environmental media is not currently known and as such it cannot be precluded that surface water and sediment quality are capable of posing a risk to relevant receptors as this time (comprising recreational and cultural users of the Swan River, the Swan River, and avian and aquatic flora and fauna).

Construction works for development of the proposed ferry terminal have the potential cause contamination through mobilisation of unknown contaminants, disturbance of sediment on the riverbed (from piling activities), and spills during construction works. It has been assumed that soil disturbance will be minimal, however the magnitude of sediment disturbance will depend on final construction design and methodology. With respect to the above, incomplete source-pathway-receptor linkages for APEC 1 and APEC 3 were identified in the preliminary CSM (CSM) based on the current Site understanding with respect to relevant receptors comprising:

– On-site intrusive workers.
– Swan River (ecosystem health).
– Threatened fauna (avian and aquatic) of the foreshore environment.

However, it is acknowledged that there is potential for these linkages to become complete in the event that previously unidentified impacts are encountered/disturbed during proposed development. Such impacts may include (but are not limited to): excavation works encountering uncontrolled fill/waste, impacted or damaged infrastructure (including infrastructure composed of ACM) or significantly impacted groundwater.

The preliminary CSM has identified a potentially complete SPR linkage concerning potential surface water and sediment within the waterside portion of the Sites with respect to relevant receptors comprising:

– Recreational and cultural users of the Swan River (beneficial use).
– Swan River (ecosystem health condition).
– Flora and fauna (avian and aquatic) of the Swan River and foreshore environment.

Development of management measures and procedures are therefore considered appropriate at this time to mitigate potential risks to receptors (comprising intrusive Site workers, the Swan River, and avian and aquatic flora and fauna) during construction works; subject to confirmation when the design has progressed and likely construction requirements are better defined.

Conclusions and recommendations

The Site is unlikely to pose an unacceptable risk under the current land use and based on the available information as presented in this PSI report. However, this is subject to uncertainty with respect to potential risks posed to relevant receptors as follows:

– Soil sampling was limited in scope. Soil quality (and fill presence) may vary across the Site, including the potential for ACM presence (although not observed during the Site inspection).
– If off-Site soils disposal (to an appropriately licensed facility) is contemplated, then further characterisation of actual soils to be disposed would be required.
– Surface water, sediment, and groundwater quality at the Site is currently not known. A programme of water quality monitoring at the Site is being undertaken to characterise baseline surface water quality and therefore address this data gap. No further action is considered warranted with respect to groundwater and sediment at this time.
– The Site is within a relatively densely developed area (with an extensive development history) such that a more intensive network of current infrastructure (and possibly redundant infrastructure) is present. If encountered/disturbed during excavation works, management may be required to mitigate harm to potential receptors at the Site.
– Limited information is currently available concerning likely construction requirements, in particular the extent to which the waterside and landside portions of the Site may be disturbed as a result.
– It is further acknowledged that construction works may pose a risk through mobilisation of potential unknown contaminants, strike of abandoned underground services, disturbance of sediment on the riverbed, or spills during construction works.

Based on the conclusions, it is recommended that:

– As a precautionary measure (if landside excavations are required), development of procedures to:
    - Manage excavated materials (for reuse onsite or off-Site disposal).
    - Manage unexpected finds.
– If off-Site disposal of soils (to an appropriately licensed facility) is contemplated, further characterisation of actual soils to be disposed would be required (as indicated by exceedance of contamination threshold (CT) criteria with respect to lead in soils based on preliminary characterisation).
– Ongoing surface water quality monitoring results are assessed to understand baseline surface water quality and potential risks to relevant receptors with respect to the proposed development (and/or the need for sediment sampling and assessment).
– Review of the preliminary CSM upon confirmation of the design and likely construction requirements.

This report is subject to, and must be read in conjunction with, the limitations set out in section 1.4 and the assumptions and qualifications contained throughout the Report.

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1. Introduction

1.1 Background

The Public Transport Authority of Western Australia (PTA) is the primary supplier of public transport services in Western Australia (WA) and is one of three key transport agencies that work to coordinate a smarter, integrated, and optimised network for WA. Future expansion of ferry services at the Swan River is a natural progression to meet the needs of an expanding city, supporting activation of popular, high-density living riverside precincts[2]. The PTA is undertaking feasibility studies to identify appropriate development envelopes (DEs) for future ferry landings to enable the expansion of the Transperth ferry services (the 'Project'). Six DEs are understood to be considered as future landings comprising:

– Applecross
– Barrack Street Jetty
– Elizabeth Quay,
– Ellam Street and
– Matilda Bay Option 1 and Option 2

The PTA has identified that contamination is a key environmental issue for the Project, and additional information in the form of a Preliminary Site investigation[3] (PSI) to inform feasibility studies for DEs are required to identify Contaminants of Potential Concern (CoPC), which may pose risk to human health and/or the environment.

GHD has been engaged to complete a standalone PSI report for each of the six DEs identified above. This report has been developed for Applecross (herein referred to as 'the Site') and represented by the 'Survey Boundary' presented on Figure 1 (Appendix A).

1.2 Purpose of this report

The purpose of this report is to present a preliminary assessment of potential risks posed by contamination (CoPC) to relevant receptors at the Site in the form of human health, the environment and/or environmental values with respect to proposed development. The outcomes of the PSI will be used to inform decision-making for construction of the proposed Applecross Ferry Landing.

1.3 Objective

The objectives of this report are to:

– Present the findings of a desktop study (site history and environmental setting information) and site inspection, including limited soil sampling, conducted at the Site to inform the PSI.
– Develop a preliminary Conceptual Site model (CSM) which identifies the known and potential sources of contamination, transport and exposure pathways, and receptors (human health and environmental). This synthesises the Site understanding with respect to contamination to inform preliminary assessment of risks.
– From the above, determine the need (if any) for further action (e.g. further investigation work or other management) with respect to potential risks posed by contamination, to facilitate construction of the proposed ferry landing at the Site.

To meet the stated objectives, the scope of the works summarised below was completed for the PSI with reference the Department of Water and Environmental Regulation (DWER), *Assessment and Management of Contaminated Sites* (DWER 2021):

– Phase 1: Desktop study and data review.
– Phase 2: Site inspection.
– Phase 3: PSI reporting (this report).

[2] https://www.pta.wa.gov.au/projects/current-projects/ferry-service-expansion
[3] Including limited soil sampling at the following investigation areas; Applecross, Ellam Street, Matilda Bay Option 1 and Matilda Bay Option 2.

A detailed methodology is provided in Section 2.

1.4 Limitations

This report: has been prepared by GHD for Public Transport Authority and may only be used and relied on by Public Transport Authority for the purpose agreed between GHD and Public Transport Authority as set out in Section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Public Transport Authority arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

GHD has prepared this report on the basis of information provided by the PTA who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer Section(s) 1.5 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

Accessibility of documents

If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.

1.5 Assumptions

The following assumptions were made by GHD in the preparation of this report:

- GHD assumes that the information obtained from external sources (Land Insight and Resources Pty Ltd [Land Insight], government bodies, consultants' reports etc.) are correct and up to date and acknowledges that this information may change at any time.
- Relevant third-party information (where referenced) can be relied upon for the purpose of the work.
- No groundwater will be abstracted for the proposed development.
- Limited landside works are understood to be required for the proposed development.
- No significant recreational fishing occurs directly from the Swan River at the shoreline at the Site, to source aquatic fauna for human consumption.
- The end land use setting will remain as Public Open Space. Reuse in a different context and/or location such as a more sensitive land use is not included in this assessment.

2. Scope of works

The following scope of work was undertaken to achieve the objectives of the Project as defined in Section 1.3. Some of the desktop searches were completed and compiled by Land Insight. The returned results of the searches are presented in Appendix B.

2.1 Phase 1: Desktop review

A review of available information was undertaken to gain an understanding of the sites and the surrounding areas and previous site activities to identify potential sources of contamination or potentially contaminating activities. This comprised:

- **Historical Land Use**
  - Review of the Cultural Heritage of the Site (Aboriginal and European) from the Department of Planning, Lands and Heritage (DPLH) Aboriginal Cultural Heritage Inquiry System (ACHIS); the National Native Tribunal online mapping; and the Places database (state Register of Heritage Places), available from the Heritage Council of Western Australia.
  - Review of historical aerial photographs, on a (typically) five to ten-year basis, showing the development of the Site.
  - Review of historical Certificates of Titles (CoT) to determine past owners of the Site and the likely associated Site uses. This was compared against the list of 'potentially contaminating industries, activities and land uses' within the DWER (2021) guidelines.
- **Physical Characteristics**
  - Review of local topography (i.e. landforms) and surface waters (including drainage) to identify possible surface water flows and potential contaminant receptors.
  - Review of local and regional geology and hydrogeology to determine the likely soil type and groundwater regime at the sites.
  - Review of available Acid Sulfate Soil (ASS) risk mapping.
  - Review of relevant DWER and Bureau of Meteorology (BoM) online mapping portals to ascertain the use and available groundwater quality information within the vicinity of the sites.
- **Flora and Fauna**
  - Search of the DCCEEW Protected Matters Search Tool for Threatened communities and species that may potentially occur in the area.
  - Search of Department of Biodiversity, Conservation and Attractions (DBCA) Dandjoo Biodiversity Data Repository database for previously recorded flora and fauna.
  - Search of DPaW Threatened and Priority and WA Herbarium databases for previously recorded Rare and Priority flora.
- **Recent and Present Land Use**
  - Review of Local and State Planning Schemes and Policy search.

    Review of Council records and Complaints Register Search, such as those associated with the presence of any demolished structures, pollution incident reports, prosecution briefs, inspection records and reports of illegal tipping. GHD has submitted a local council search (City of Melville) and is currently awaiting a response. Due to time constraints associated with the Project delivery timeframes it is intended to amend (include) the results of the response received (if any) during finalisation of this report and / or once the information has been received.
  - Review of any site plans made available by PTA or sourced from local and state authorities.
  - Review of surrounding land uses to assess potentially sensitive receptors to any suspected contamination and to assess land uses that have the potential to affect Site 1 and Site 2.
  - Review of current CoTs and survey plans to determine ownership and land uses and any relevant memorials on title.

- Freedom of Information (FOI) requests to the DWER to obtain information (where available) relating to historical spills, complaints and odours at the Site.
- Review of the Dangerous Goods Licence search under the FOI Act to ascertain whether dangerous goods were historically stored on the Site. .
- Review DWER Contaminated Sites Database with respect to the Site and to ascertain whether any surrounding properties have been identified as contaminated sites (note: the DWER Contaminated Sites Database lists sites which are classified as *Contaminated – remediation required* (CRR), *Contaminated – restricted use* (CRU), and *Remediated for restricted use* (RRU) and does not include sites under investigation)
- Submission of DWER Basic Summary of Records (BSR) request to ascertain whether the Site has been reported to or classified under the *Contaminated Sites Act 2003* (CS Act) by the DWER.

The findings of the desktop review were used to inform Phase 2: site inspection, interviews, and limited soil assessment.

2.2 Phase 2:

2.2.1 Site inspection and interview

GHD undertook a site inspection at the Site on 1 May 2025, comprising a site walkover and visual inspection to assess the current site condition and layout, to validate information obtained during the desktop study (Phase 1), and to identify any additional relevant site information. The site inspection was undertaken by suitably experienced GHD environmental scientists. GHD personnel collected photos and recorded field notes to document the site condition at the time of the inspection. No Site personnel were available for interview at the time of inspection.

2.2.2 Limited soil sampling

Soil samples were collected from three locations (GHD_Applecross_HA01, GHD_Applecross_HA02, and GHD_Applecross_HA03) within grassed (unsealed) areas of the Site. A hand auger was used to advance a shallow soil bore at each location to a maximum depth of 1 metre below ground level (m bgl). At each location the soil profile was visually observed and a handheld photoionisation detector (PID) fitted with a 9.6 eV lamp was used to measure the concentration (in parts per million; ppm) of any volatile organic compounds (VOC) present within the soil. Soil characteristics, type, quality, and condition (including the presence/absence of staining or foreign/waste materials) and all field measurements were recorded on bore logs.

Samples were taken at discrete depths and placed directly into laboratory-supplied sampling containers. All samples were submitted to a National Association of Testing Authorities (NATA) accredited laboratory under chain of custody documentation for analysis of metals[4], total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, total xylenes, and naphthalene (BTEXN), polyaromatic hydrocarbons (PAH), chlorinated hydrocarbons, VOC, and semi volatile organic compounds (SVOC).

The hand auger was decontaminated between sampling locations using phosphate-free detergent and field personnel wore dedicated nitrile gloves for each sample collected. Quality assurance/quality control (QA/QC) samples were also collected (one field blank, one rinsate blank, one transport blank, and one blind/split duplicate) as part of the wider sampling program.

All field notes and a photo log are presented in Appendix C. Soil analytical results (Appendix D) were compared to adopted Tier 1 assessment criteria and discussed further within Phase 3: Reporting.

2.3 Phase 3: Reporting

The preparation of a PSI (this report) for the Site with reference to DWER (2021) and NEPC (2013) guidance.

Key items within the report comprise:

[4] Arsenic, cadmium, chromium (III+VI), copper, nickel, lead, zinc, and mercury.

- The scope of work completed.
- Site history and environmental setting information.
- Site inspection observations.
- Presentation of analytical results from soil samples in comparison with Tier 1 assessment criteria.
- A preliminary conceptual site model (CSM) which identifies the known and potential sources of contamination, transport and exposure pathways, and receptors (human health and environmental) and synthesises the Site understanding with respect to contamination and the assessment of risks.
- Conclusions and recommendations with respect to further works or management (if required).

3. Site setting

3.1 Site identification

The Site is located along the foreshore area of the Swan River within the City of Melville, Western Australia and is bounded by Canning Beach Road to the northwest, The Raffles Waterfront Apartments and Hotel to the south and west, and by the Canning Highway/Canning Bridge to the south (refer to Plate 1 and Figure 1, Appendix A). Site identification details are summarised in Table 1 and the current Certificate of Titles (CoT) for the Lots are provided in Appendix E.

Table 1 Site identification

Attribute	Detail
Site address	70-72 Canning Beach Rd, Applecross, WA 6153
Lot on Plan	Part of Lot P ROAD (Land ID 3159415) Part of Lot 501 on Plan 425439 (Land ID 30201380) Part of Lot 310 on Plan 47439 (Land ID 3743482)
Certificate of title	Volume: LR3176, Folio: 104 (Lot 501 on 425439) Volume: LR3151, Folio: 540 (Lot 310 on Plan 47439) NA
Registered proprietor/s	LR3151/540: State of Western Australia – Department of Biodiversity, Consideration, and Attractions – Managed by Swan River Trust LR3176/104: State of Western Australia – Main Roads Western Australia (Road) NA
Local government authority	City of Melville
Area (m^2)	21,740
Current zoning (Land Insight 2025)	Regional open space (Part of Lot P ROAD and Lot 501 on Plan 425439) Waterways (Part of Lot 310 on Plan 47439) Primary Regional Roads (Part of Lot P ROAD)
Existing land-use	At the time of preparing the PSI the Site was operational as foreshore public space, with grassed areas, garden beds, and shared pathways (pedestrians and cyclists) present. A small jetty/pontoon extends into the Swan/Canning River to the east with mooring of private vessels observed at the jetty and in the nearshore water to the north.
Approximate site boundary coordinates, points shown in Plate 1[5]	**A:** Northing – 6458000.539 Easting – 391435.578 **B:** Northing – 6458004.091 Easting – 391561.179 **C:** Northing – 6457872.719 Easting – 391613.585 **D:** Northing – 6457866.805 Easting – 391578.696 **E:** Northing – 6457772.013 Easting – 391630.713 **F:** Northing – 6457744.787 Easting – 391572.435 **G:** Northing – 6457878.748 Easting – 391554.953 **H:** Northing – 6457879.780 Easting – 391443.474

[5] GDA 2020 MGA Zone 50

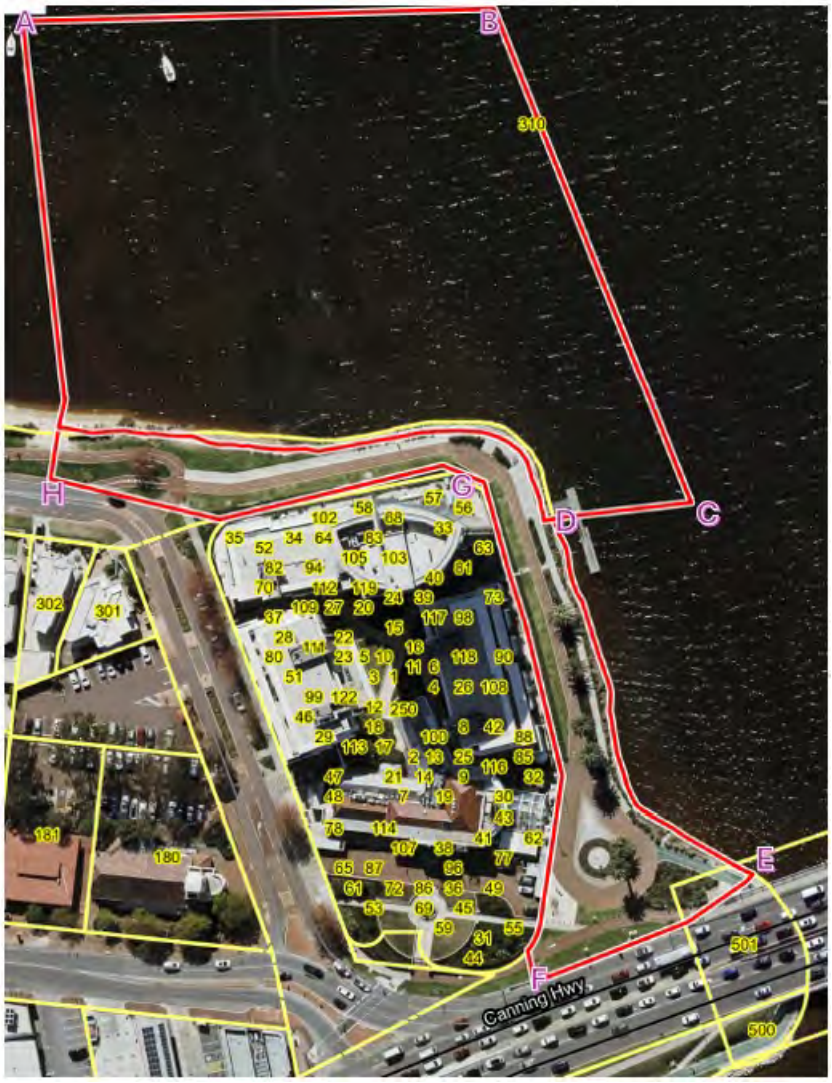

Plate 1 *Site boundary*

3.2 Site overview and layout

The Site comprises a portion of the Applecross foreshore area bounded by the Canning Highway/Canning Bridge, the Raffles Hotel complex, Canning Beach Road, and the Swan River. The current use of the Site is understood to be for recreational purposes, with a footpath, principal shared path (cycleway) and minor grassed areas/garden beds present within the landside portion of the Site. A small jetty/floating pontoon extends from the eastern foreshore of the Site into the Swan River and small boats are moored in the Swan River to the north and northwest of the Site. The northern portion of the Site (waterside) consists of open water (Swan River).

3.3 Current and proposed land use

The ASC NEPM (NEPC 1999) developed generic land use scenarios for the assessment of site contamination based on the typical settings in Australia under which people may be exposed to contaminated media. The current Site use is consistent with the ASC NEPM land use category of *public open space* (POS) as the landside portion of the Site is publicly accessible (consistent with inclusion of footpaths within the POS scenario and presence of recreational users).

With respect to the above, it is noted that the Site surface for the landside portion of the Site comprises both hardstand/sealed surfaces (footpaths and cycle paths) and unsealed surfaces (grassed areas and small garden beds). The majority of the foreshore area separating the landside from the waterside portion of the Site comprises fenced retaining walls/rock walls, with only a small sandy beach area in the northwest portion of the Site. There are no playgrounds or facilities for young children present within the Site.

Based on the current Site layout, it is considered that most Site users would pass through the Site only (walking, cycling, jogging) and would be less likely to spend longer periods of time at the Site (i.e., the ASC NEPM assumes that Site users would spend 2 hours daily at properties with POS land use). Recreational fishers may use the Site for longer durations; however, such use would likely be limited to the small existing jetty and the hardstand areas alongside the retaining walls. As such, for the existing Site use, potential for exposure of Site users (members of the public) to landside contaminated media under normal operating conditions is therefore considered to be negligible.

The proposed development of the Site is understood to include construction of a jetty and boarding pontoon at the northern foreshore of the Site to enable use of the Site as a public ferry terminal. This understanding is based on an indicative design drawing provided by the PTA (as prepared by MPS Architects [2024]), an extract of which is provided in Plate 2.

Plate 2 ***Indicative Ferry Terminal Design (MPS Architects [2024])***

For the proposed development, it is therefore expected that:

– Existing landside Site use and features would be retained
– Waterside use of the Site would likely include increased boat traffic and would result in some disturbance to the riverbed (i.e., the depth of the water appears relatively shallow in the vicinity of the planned development works).

On this basis, future use is not expected to differ significantly from current use, although the intensity of use may increase.

Nevertheless, it is identified that during development, there will be some disturbance of both landside and waterside portions of the Site, the extent of which is not clear based on the indicative designs provided by PTA at this time.

3.4 Surrounding land use and zoning

The immediate surrounds are the Swan/Canning River, residential/commercial premises for the Raffles Waterfront Apartments and Hotel, and the Canning Highway which crosses the Canning River at Canning Bridge, immediately southeast of the Site. Further to the west are civic land uses including the Canning Bridge Express Library and Applecross District Hall, followed by lower-density residential properties. Further to the east, on the eastern bank of the Canning River is the Canning Cloister Foreshore beyond which lies the Kwinana Freeway and low-density residential properties. The surrounding area zoning within 500 m of the Site is summarised in Table 2 (refer to mapping provided with the Land Insight Report in Appendix B).

Table 2 Surrounding zoning

Direction	Description
North	Waterways
East	Waterways, regional open space, primary regional roads, centre (residential)
South	Centre (residential), primary regional road, regional open space, waterways
West	Waterways, regional open space, centre (residential), local distributor road, district distributor road, residential

4. Environmental setting

This section describes the environmental setting of the Site and surrounds. Information has been sourced from Land Insight (2025) unless otherwise specified. Mapping is provided in Appendix B (Land Insight 2025).

4.1 Climate

The Perth region experiences a Mediterranean climate, with hot dry summers and mild wet winters. Based on a search of the climate data available from the Bureau of Meteorology (BoM) database in May 2025, the closest weather station to the Site with long-term data available is Swanbourne station (Station No. 009215). Climate data collected between 1993 and 2025 from this station reports the mean maximum temperature ranges from 18.5 °C (July) to 30.4 °C (February), the mean minimum temperature ranges from 10.0 °C (July) to 18.8 °C (February) and the mean annual rainfall is 716.7 mm, with an average of 80.8 days of the year recording more than 1 mm of rain (BoM 2025). A chart of the climate data for Swanbourne is presented in Plate 3.

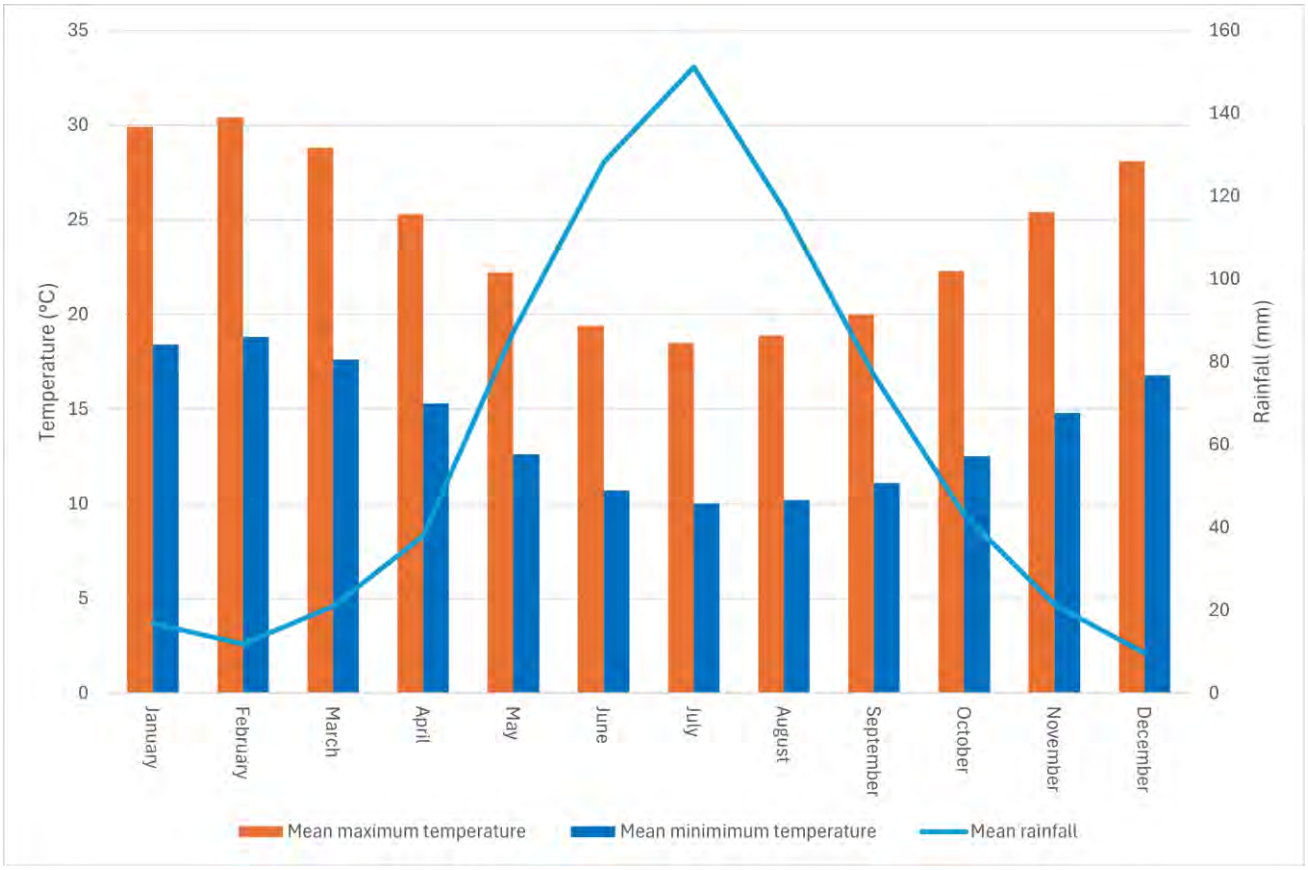

Plate 3 Climate data Swanbourne (009215) 1993-2025

4.2 Topography

The topography of the Site is approximately 2 m Australian Height Datum (AHD) and appears to be relatively flat, with a steep drop to surface water level (retaining wall/rock walls present) at the banks of the Swan/Canning River. Moving off-site to the south and west and inland from the Swan/Canning River foreshore, the land rises gently to around 4-6 m AHD.

4.3 Geology and soils

Geology mapping (Gozzard 1983) indicates that the underlying geology of the Site and immediate surrounding area (land) is Quaternary sand of alluvial origin (S_{14}) described as *pale grey to white sand*. Off-Site to the

southwest (approximately 129 m), the underlying geology is Pleistocene age sand derived from the Tamala Limestone, of residual origin (S_7) described as *pale yellowish-brown sand*.

The soil mapping for the foreshore portion of the Site is described as *SAND - pale grey to white, medium-grained sub-angular, quartz and feldspar, well sorted, abundant whole and broken bivalves and gastropod shells, of alluvial origin*. The northern portion of the Site within the Swan/Canning River is mapped as a Podosol that predominantly comprises leached sands. Off-site to the southwest of the Site (further inland from the banks of the Swan/Canning River), soils are mapped as *SAND – pale and olive yellow, medium to coarse-grained, sub-angular to sub-rounded quartz, trace of feldspar, moderately sorted, of residual origin.* Soil mapping for the Site and off-Site areas within a 500 m radius are consistent with the underlying geology.

Based on information presented within the Land Insight Report, encountered lithology was available for five of the 12 registered groundwater bores present within a 500 m radius of the Site (refer to Section 4.8.3). A summary is presented in Table 3. In general, the lithology for locations nearer to the river foreshore comprise a higher proportion of clays and finer grained sands compared to those located further inland (predominantly sands). This is consistent with the general regional geology and with the alluvial origin of soils along the river banks.

Table 3 Encountered lithology during installation of registered groundwater bores present within 500 m of the Site

Well ID	Depth (m bgl)	Encountered lithology description	Location relative to the Site
61602085	0-2	Clay, red and maroon, sandy, very fine to medium grained, poorly sorted, subangular.	197.2 m west, located within the foreshore reserve area along Canning Beach Road.
	2-4	Clay, mottled, light brown, blue-grey and minor maroon, trace very fine sand.	
	4-6	Clay (mixture of the overlying lithology)	
	6-10	Sand, light yellow, fine to medium grained, moderately sorted, subrounded. Common garnet and heavy minerals, minor feldspar, common iron staining. Interbedded clays at less than 0.4 m intervals.	
	10-12	Clay, light brown, blue grey, sandy (sand as per overlying lithology)	
	12-16	Clay, mottled blue-grey, yellow, red, very sandy, fine grained.	
	16-18	Clay, orange, slightly pebbly and sandy, very coarse sand to very fine pebbles, moderately sorted, subangular and subrounded. Feldspar and quartz.	
	18-19.5	Calcarenite, lime cemented, medium to coarse grained sand, trace very fine pebbles, poorly sorted, subrounded to rounded, trace shells, trace heavy minerals, trace fossils (cavities).	
	19.5-21.5	Clay, greenish-black, calcareous, slightly sandy, common heavy minerals, some shale layering.	
	21.5-22.5	Not logged.	
61601683	0-10.3	Yellow sand	357.8 m southwest, located within residential property, approximately 290 m inland from riverbank.
	10.3-12	Band of soft limestone	
	12-16.7	Coarse yellow sand with washed pebbles	
61601303	0-2.7	Fine yellow sand	370.1 m west, located within residential property, approximately 220 m inland from riverbank.
	2.7-6.1	Medium yellow sand	
	6.1-8.5	Coarse yellow sand	
61601299	0-1.2	Not logged	379.3 m west, within residential area, approximately 150 m inland from riverbank.
	1.2-4.6	Brown sand with fines	
	4.6-4.9	Solid clay	
	4.9-9.4	Sand with fines	

Well ID	Depth (m bgl)	Encountered lithology description	Location relative to the Site
61601489	0-6.1	Sand	414.5 m west, within residential area, approximately 220 m inland from riverbank.
	6.1-10.4	Limestone	
	10.4-16.8	Sand	
	16.8-17.1	Not logged	

It is possible that leveling and filling of land within the Site along the river foreshore areas may have been achieved historically, using imported fill material of unknown quality and origin, especially in the southeast portion of the Site prior to Canning Bridge. However, this is not confirmed or known based on available Site information.

4.4 Acid sulfate soils

The Swan Coastal Plain acid sulfate soils (ASS) mapping indicates the southern portion of the Site (onshore) is moderate risk of ASS occurring within three metres of natural soil surface, while the northern portion of the Site (within the Swan/Canning River) is classed as high to moderate risk of ASS occurring within three metres of natural soil surface.

The national mapping indicates high probability of ASS occurrence for the entire Site area. Approximately 129 m to the southwest, the land is mapped as extremely low probability of occurrence. Although the potential for monosulfidic black ooze (MBO) is not mapped the potential for it to accumulate in sediments at the Site cannot be precluded as it is known to accumulate in the basal sediments of tidally affected estuaries and rivers (Sullivan et al. 2018), such as the Swan River.

4.5 Hydrogeology

There are three aquifers underlying the Site (DWER 2025a), as described in Table 4.

Table 4 Aquifers underlying the Site

Area	Subarea	Aquifer
Perth	City of Melville	Perth – Superficial Swan
	Perth South Confined	Perth – Leederville
		Perth – Yarragadee North

The aquifers are described as porous, extensive highly productive aquifers. Groundwater levels are generally between 1 – 3 m below ground level (m bgl) (DWER 2025b). The groundwater is mapped as marginal (Total Dissolved Solids [TDS] 500-1000 mg/L).

4.6 Wetlands

The Swan-Canning Estuary intersects the northern portion of the Site. Two additional wetlands are mapped as being located within 2000 m of the Site, as follows:

– Estuary-peripheral (Deepwater Point Reserve) located approximately 1320 m south of the Site
– Dampland (within George Burnett Reserve) located approximately 1975 m east of the Site.

There are no Ramsar wetlands listed within 2 km of the Site however the Swan-Canning Estuary is mapped as a Nationally Important Wetland. According to the Protected Matters Search Tool (PMST) search completed in May 2025 (DCEEW 2025), there are no other Nationally Important Wetlands within 2 km of the Site.

4.7 Hydrology and drainage

The northern portion of the Site intersects the Swan-Canning Estuary, and the southern portion of the Site comprises the foreshore area (a mixture of lawn, pavement, and garden beds). Reticulation systems and boxes were identified within the lawn areas and garden beds during the Site inspection.

According to Water Corporation online mapping, underground scheme water and sewer pipes are likely to intersect the westernmost part of the Site alongside Canning Beach Road and a disused sewer line also extends along the southern boundary of the Site along Canning Highway (Water Corporation 2025). Approximately 50 m west of the Site, along Canning Beach Rd, a Water Corporation sewer pump station was observed during the Site inspection and confirmed in the online mapping tool (Water Corporation 2025).

Two concrete pipe outlets were observed at the beach approximately 50 m west of the Site (refer to Photos 50 and 51, Appendix C) and in the grass prior to the northwest Site boundary (refer to Photos 2 to 4, Appendix C). Both were observed to be dry (not flowing) at the time of the inspection and the outlets, with leaves or sand partially blocking the outlets. On the eastern Site boundary, multiple smaller pipe outlets were observed within the rock wall to the north and south of the jetty, with a range of sizes and constructions (i.e., PVC, concrete, grated) noted (e.g., Photos 20 to 25, 27, and 28 in Appendix C). These were not mapped on the Water Corporation (2025) online database and their purpose/catchment is not known; however, they are inferred to convey stormwater/run-off from paved portions of the Site and the adjacent hotel/apartment complex.

Runoff is inferred to be directed towards the 'Melville Water' section of the Swan Canning River system. The lower reaches of the Swan and Canning Rivers form an estuary, where tidal forces and marine salinity can be detected (DBCA 2025b). Overall, the system is considered to be highly modified by historical dredging and land reclamation activities; however, it remains an important environmental system that is also important for recreation (Swan River Trust 1997). Melville Water is the largest section of the Swan Canning estuary system, and the foreshore is publicly accessible with parks and recreation facilities present, including yacht and rowing clubs, hotels, and restaurants (Swan River Trust 1997). The Canning River, which extends to the south of the Site from Canning Bridge, has extensive areas of environmentally sensitive and well-vegetated shorelines and wetlands (Swan River Trust 1997).

Seasonal conditions, including high river flows and flooding, particularly in the upper reaches of the Swan and Canning Rivers, and wind and wave action in the estuary affect the system (Swan River Trust 1997).

According to DBCA (2025b) a range of factors have the potential to impact on the water quality and, subsequently, ecological and human health:

– Excess nutrients (phosphorus and nitrogen) and organic loading enter the Swan Canning River system through groundwater, drainage and catchment runoff. These promote algal blooms and low oxygen conditions, which in turn places stress on fish and other aquatic life and can contribute to fish kills.
– Contaminants such as heavy metals, pesticides and herbicides enter the waterway via the drainage network. These can be directly toxic to organisms, affect life cycles and enter the food chain. Additionally, development work has potential to disturb ASS which also mobilise heavy metals.
– Water borne pathogens which mostly enter the river system in the form of human or animal faeces (stormwater runoff, sewage pump station malfunctions, boating waste, malfunctioning septic tanks and farming activities). Salinity, sunlight, tidal movement, vegetation and microbial processes, wind and wave action all influence the levels of pathogens in the water.

DBCA monitoring reported water quality at Heathcote (HEA) located 2.25 km downstream of the Site and at South Canning Bridge (SCB2) located 240 m upstream of the Site in May 2025 to be (DBCA 2025c and 2025d):

– Saline (40,000 mg/L total dissolved solids at HEA and 38,000 to 40,000 mg/L at SCB2)
– Well-oxygenated (7 to 8 mg/L dissolved oxygen at HEA and 6 to 7 mg/L at SCB2)
– With low chlorophyll fluorescence (20 µg/L)
– Approximately 19°C.

4.8 Environmental value - groundwater

4.8.1 Groundwater protection areas

The Site is not mapped as a public drinking water source area (DWER 2025a).

4.8.2 Licensed abstractions

In the Perth Groundwater Map (DWER 2025a), the Site is mapped within an area classed as *Unsuitable* for garden bores, likely due to the proximity of the Site to the Swan/Canning River and the risk of saltwater intrusion.

The closest licenced groundwater abstraction bore is 27.8 m south of the Site (licence 159537) and registered to the City of Melville. Based on the area covered by this licence (within the Canning Highway road reserve, the adjacent Apex foreshore reserve, and other open space reserves areas across the City), it is likely for irrigation purposes.

According to the Land Insight report and DWER Water Register (DWER 2025a), groundwater within the Leederville and Yarragadee North aquifers is fully allocated, with allocations available within the Superficial Swan aquifer. There are no licensed groundwater abstractions within the Site, and it is inferred that the reticulation infrastructure observed during the Site inspection is connected to scheme water. Seven groundwater abstraction licences, each applicable to multiple land parcels, are present within a 2 km radius of the Site. These groundwater licences are summarised in Table 5, with further information and mapping available in Appendix B

Table 5 Groundwater licences within a 2 km radius of the site

Licence ID	Map ID	Parties	Licence allocation	Aquifer	Number of individual land parcels within 2 km of the Site	Distance and direction from Site to nearest property
159537	2155	City of Melville	2,328,098 kL	Perth – Superficial Swan	15	28 m south
50708	10740	City of South Perth	828,455 kL	Perth – Superficial Swan	26	121 m east
155444	1503	Department of Education	375,750 kL	Perth – Superficial Swan	1	909 m west
155440	1500	Department of Education	152,250 kL	Perth – Superficial Swan	4	1130 m east
208665	9079	Water Corporation	50,000 kL	Perth – Superficial Swan	1	1131 m east
159643	2180	City of Melville	34,875 kL	Perth - Leederville	3	1165 m southwest
172272	3931	Aquinas College	135,000 kL	Perth – Superficial Swan	1	1504 m southeast

4.8.3 Registered bores

Land Insight reviewed the DWER Water Information Reporting (WIR) database (DWER, 2025c) for groundwater boreholes located within a 2 km radius of the Site. Of 287 registered bores, 12 registered bores are located within 500 m of the Site, and these have been summarised in Table 6, with full information and mapping available in Appendix C.

Inferred groundwater flow direction is towards the Swan/Canning River (north/northeast).

Table 6 Registered groundwater bores within a 500 m radius of the Site

Bore ID	Year drilled	Depth drilled (m bgl)	Surface water level (m bgl)	Purpose	Salinity (µS/cm)	Distance and direction from Site
61611798	1984	9.6	1.4	Monitoring	730	196.2 m west

Bore ID	Year drilled	Depth drilled (m bgl)	Surface water level (m bgl)	Purpose	Salinity (µS/cm)	Distance and direction from Site
61611797	1984	6.6	1.4	Monitoring	670	196.2 m west
61611799	1984	19.0	1.4	Monitoring	7230	196.2 m west
61602085	1983	22.5	1.3	Exploration	-	197.2 m west
61602085	-	-	-	-	-	300 m west
61601784	1977	9.4	1.5	Stock and Domestic	-	307.1 m southwest
61601683	1978	16.7	10.0	-	-	357.8 m southwest
61601303	1977	8.5	7.9	-	-	370.1 m west
61601299	1977	9.4	1.4	-	-	379.3 m west
61601489	1978	17.1	10.5	-	-	414.5 m west
61615614	1978	20.6	12.8	Stock and Domestic	-	420.7 m west
61601894	1979	-	-	Stock and Domestic	-	426.7 m southwest

4.8.4 Unregistered bores

Other unregistered bores may be present within and surrounding the Site. However, as the general region is classes as ‘unsuitable for garden bores’, and the Site and surrounds are within the Perth metropolitan region and have adequate scheme water supply, it is considered unlikely that unregistered groundwater bores would be present within the Site or in the surrounding area that are used for potable or non-potable purposes.

4.8.5 Groundwater dependent ecosystems

The Land Insight report identified nine groundwater dependent ecosystems (GDE) occurring within a 2 km radius of the Site, with no GDEs mapped within the Site boundary. A summary of the identified GDEs is presented in Table 7.

Table 7 GDEs located within 2 km of the Site

GDE Type	Potential	Location relative to the Site
Aquatic – ecosystems that rely on the surface expression of groundwater	Low potential	27.2 m northeast (mapped as the central channel of the Canning River)
	High potential	1804.3 m northwest (mapped as the central channel of the Swan/Canning River system)
Terrestrial – ecosystems that rely on subsurface presence of groundwater	High potential	240.0 m east – small, vegetated area adjacent to the Kwinana Freeway at Canning Bridge.
		677 m northwest – Coffee Point foreshore reserve, along Canning Beach Road.
	Low potential	979.6 m northwest – portion of Heathcote reserve.
		1250 m southeast – Salter Point banksia woodlands
		1420 m southeast – Hiser Park
	Moderate potential	1511.3 m southeast – western portion of Clery Park
		1660 m southeast – vegetated area between Aquinas College and Kwinana Freeway

4.9 Environmental value – surface water

The Swan River, including the waterside portion of the Site, and the wider Swan/Canning Riverpark:

– Has beneficial use of public amenity and aesthetic value as a recreational asset. At the Site, mixed use developments and public-use spaces dominate the foreshore environment and surrounds, including footpaths and cycleways, public seating, an historic hotel, and boat mooring facilities.
– Has commercial and tourism value, allowing private use for various watercraft and containing multiple parks and reserves for recreational purposes (DBCA 2025e).
– Has aquatic ecosystem value, supporting a variety of flora and fauna (refer Section 4.10) and contains multiple ecological reserves (DBCA 2025e).
– Has heritage value to the Whadjuk people (refer Section 4.11).

4.10 Flora and fauna

Full results of the PMST (DCCEEW 2025) and Dandjoo[6] (DBCA 2025a) database searches are provided in Appendix B, with the key findings discussed herein.

4.10.1 Vegetation communities

The PMST search completed in April 2025 indicated that two threatened ecological communities (TECs) are likely to occur at the Site and one within a 2 km radius as follows (DCCEEW 2025):

– Banksia Woodlands of the Swan Coastal Plain ecological community (*likely to occur within Site area, Endangered*)
– Subtropical and Temperate Coastal Saltmash (*likely to occur within buffer distance, Vulnerable*)
– Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community (*likely to occur within Site area, Critically Endangered*).

Due to the developed nature of the Site and observations at the time of the Site inspection, it is considered that there are currently no TECs present within the Site.

4.10.2 Flora

The PMST search completed in April 2025 indicated that 13 listed threatened plants may or are likely to occur at the Site or within a 2 km radius (DCCEEW 2025). These comprise eight species listed as Endangered, four species listed as Vulnerable, and one species listed as Critically Endangered.

A search of Dandjoo in May 2025 indicated no sightings of plant species had been recorded within the Site. However, 239 sightings of plant species (native and introduced) had been recorded within a 2 km radius of the Site (DBCA 2025a). Of these, 184 were native species and 80 were listed as either P1 (priority 1), P2 (priority 2), P3 (priority 3), P4 (priority 4), CR (critically endangered), EN (endangered), Parent of conservation listed taxa, or VU (vulnerable).

With respect to aquatic flora, the Department of Water (2009) identifies mainly phytoplankton, benthic micro- and macroalgae (e.g. phytoplankton), benthic macrophytes and other aquatic plants (e.g. seagrass, eel grass, river reeds), detritus (mainly decomposing plant material) to be present in the Swan-Canning Estuary environment. Benthic macrophytes such as seagrass were noted to be the most important overall food source (Department of Water, 2009). The DBCA (2025b) also advises that the Swan River is widely affected by invasive/introduced species (weeds, invasive fish and introduced invertebrates) which present a threat to native species by altering the ecosystem and reducing local biodiversity).

4.10.3 Fauna

Listed fauna

The PMST search completed in May 2025 indicated that 52 listed threatened fauna species may or are likely to occur at the Site or within a 2 km radius (DCCEEW 2025), comprising 31 birds, two mammals, four reptiles

[6] Dandjoo is a Biodiversity Data Repository database for previously recorded flora and fauna within WA.

(turtles), and two shark species. Of these, one species is listed as Conservation Dependent, three are listed as Critically Endangered, 14 are listed as Endangered, and 21 are listed as Vulnerable.

A search of Dandjoo in May 2025 indicated no sightings of fauna species within the Site. However, 267 sightings of fauna species (native and introduced) had been recorded within a 2 km radius of the Site. Of these, 117 were native species and 71 were listed as either P2, P3, P4, Parent of conservation listed taxa, EN, CR, VU, MI (migratory), OS (species otherwise in need of special protection), or Conservation code inherited from parent.

Listed migratory species

The PMST search completed in May 2025 indicated that migratory species may, are likely, or known to occur at the Site or within a 2 km radius (DCCEEW 2025) as follows:

– 12 migratory marine birds (including 10 threatened species)
– Eight migratory marine species (including five threatened species)
– One migratory terrestrial species
– 28 migratory wetland species (including 12 threatened species)

A search of Dandjoo in May 2025 indicated 14 sightings of migratory species within a 2 km radius of the Site, of which 13 were bird species and one was a mammal (dolphin) (DBCA 2025a). One of the species sighted (*Tringa brevipes,* the grey-tailed tattler) is classed as P4.

Listed marine species

The PMST search completed in May 2025 indicated that listed marine species may, are likely, or known to occur at the Site or within a 2 km radius (DCCEEW 2025), as follows:

– 50 bird species (including 23 threatened species)
– Four reptile species (all of which are turtles that are listed as threatened species)

4.10.4 Significance

There is a small section (approximately 55 metres) of sandy beach fringed with minimal vegetation (grasses/sedges) in the northwestern portion of the Site. The remainder of the foreshore at the Site comprises retaining walls and rock walls of anthropogenic origin. The foreshore at the Site is considered to be modified relative to the original (natural) setting.

Due to the developed nature of the Site surrounds, it is likely that fauna species, such as birds, may utilise the Site opportunistically as foraging; however, it is not considered likely that threatened avian species would be reliant on it for breeding or a main food source. Mussels were observed on the underside of the floating jetty at the time of the Site inspection although the exact species present were not identified. *Westralunio carteri* (“Carter’s Freshwater Mussel”), a listed Vulnerable species has been observed to occur within 2 km of the Site based on records in the Danjoo database. However, it is not known whether this species is present at or near the Site. As filter feeders, mussels and other molluscs are susceptible to uptake of potential contaminants within the water.

In addition to listed species, other aquatic fauna are identified to inhabit the Swan-Canning Estuary (Department of Water [2009]) and may be present in the vicinity of the Site, such as:

– Very small invertebrates (e.g. nematodes, copepods), small benthic macroinvertebrates (e.g. gastropods, bivalves), epibenthic macroinvertebrates, (e.g. prawns, crabs), fish, zooplankton (e.g. copepods and larval stages of other invertebrates), surficial fauna (e.g. insects).
– Small fish species, (e.g. hardyheads, gobies), larger fish species (e.g. black bream) and crabs (e.g. blue swimmer crab).

Whilst likely to occur at the Site to some extent, due to the modified nature of this environment and form of use, it is unlikely that the Site represents a significant habitat for such fauna.

4.11 Heritage

4.11.1 Aboriginal

A search of the Aboriginal Cultural Heritage Inquiry System (ACHIS) was undertaken in May 2025 which spatially illustrates the locations of places of Aboriginal cultural heritage significance. The status of places identified in ACHIS are as follows:

- **Registered:** referring to Aboriginal cultural heritage places that are assessed as meeting Section 5 of the *Aboriginal Heritage Act 1972.*
- **Lodged:** referring to places where information has been received in relation to an Aboriginal cultural heritage place, but it is yet to be assessed under Section 5 of the *Aboriginal Heritage Act 1972*.
- **Historic:** referring to places which have been assessed to not meet the criteria of Section 5 of the *Aboriginal Heritage Act 1972* and including places that no longer exist as a result of land use activities with existing approvals.

The search identified five registered sites, three lodged places, and one historic record within 2 km of the Site, as presented in Table 8. The full search maps and reports are presented in Appendix B.

Table 8 Aboriginal heritage places within 2 km radius of the Site

Place ID	Place name	Place type	Culturally sensitive?	Restricted place?	Distance and direction from Site
Aboriginal Cultural Heritage Registered Sites					
3536	Swan River	Creation/Dreaming Narrative	No	No	Onsite (section within the river) and extending off-site to the north and east.
3538	Canning River	Creation/Dreaming Narrative; Ochre; Water Source	No	No	Off-site (37 m south)
119	Winjan	Historical	No	No	Off-Site (466 m southeast)
3705	Foreshore Camping Ground	Camp; Hunting Place	No	No	Off-Site (67 m east)
18623	Goolugatup	Birthplace; Camp; Ritual/Ceremonial; Creation/Dreaming Narrative; Historical; Hunting Place; Meeting Place; Landscape/Seascape Feature; Ochre; Plant Resource; Water Source	No	No	Off-Site (827 m northwest)
Aboriginal Cultural Heritage Lodged Places					
4353	Davilak St, Como	Artefacts/Scatter	No	No	Off-Site (945 m east)
22963	Canning River midden 2	Midden	No	No	Off-Site (912 m southeast)
27842	Mitchell St Scar tree	Modified tree	No	No	Off-Site (1403 m southwest)
Aboriginal Cultural Heritage Historic Records					
20442	Raffles Hotel Site	Sub surface cultural material; Artefacts/Scatter; Birthplace; Camp; Ritual; Ceremonial; Creation/Dreaming Narrative; Fish Trap; Historical; Hunting Place; Meeting Place; Ochre; Plant	No	No	Partially overlaps the northwest, north, and northeast portion of the foreshore area included within the Site boundary

Place ID	Place name	Place type	Culturally sensitive?	Restricted place?	Distance and direction from Site
		Resource; Quarry; Rock Shelter; Shell			and extends off-Site to the south/east.

4.11.2 Other

The Land Insight Report (2025) identified nine individual heritage places within 200 m of the Site; including three of the Aboriginal Heritage Places included in Section 4.11.1; Place 3536, 3538, and 3705). The remaining heritage locations are presented in Table 9, supplemented by a search of the Western Australian Heritage Council's Heritage Places Database (inHerit) (Heritage Council 2025) completed in May 2025, which identified one additional site within 200 m of the Site. Mapping and the full text from the Land Insight Report is included in Appendix B.

The PMST search undertaken in May 2025 did not identify any world or national heritage sites within a 2 km radius of the Site (DCCEEW 2025).

Table 9 Other heritage sites within 200 m of the Site

Place ID	Place name	Details	Listing	Date listed	Distance from site
16178	Canning Bridge	Canning Hwy over the Canning River, between Applecross and Como.	State and Local	2000 - 2020	Intersects the southeast corner of the Site
1544	Raffles Hotel	10 Canning Beach Rd, Applecross	State, Local, & Other (Art Deco Significant Building Survey)	1994 - 2020	0.4 m west
4659	Canning Bridge eastbound	Canning Hwy, Applecross and Como	State & Other (Art Deco Significant Building Survey and Statewide Large Timber Structure Survey)	1994 - 1998	1.7 m southeast
9192	Canning Bridge westbound	Canning Hwy, Applecross and Como	State & Other (Statewide Large Timber Structure Survey)	1998	17.1 m southeast
1543	Applecross District Hall	69 Canning Beach Rd, Applecross	State, Local & Other (Art Deco Significant Building Survey)	1993 - 2020	63.8 m south
25388	Jacaranda & Plane Trees	In public road reserves, Applecross	Local (City of Melville)	2014	149.8 m west
13468	Applecross Library	2 Kintail Rd, Applecross	Other (Statewide War Memorial Survey)	1996	110 m west

4.12 Natural hazards

4.12.1 Bushfire

According to the Land Insight Report (2025), the Site is not mapped within a bushfire prone area and given its proximity to water and lack of significant surrounding vegetation is unlikely to be prone to wildfires.

4.12.2 Flooding

According to the Land Insight Report (2025), the Site is mapped within a flood prone area for flood events, 1 in 10-year and 1 in 100-year floods. As such, in storm surges (creating higher tides) or extreme rainfall, the Site may be prone to flooding. The Site is mapped within a designated flood event floodplain.

There is the potential for flooding to result in erosion, particularly of the sandy beach in the northwest portion of the Site. The retaining walls may also erode over time; however, locations where the rock wall is present will likely mitigate the impacts of erosion.

5. Site history

5.1 Site ownership

5.1.1 Historical Certificates of Title

Historical certificates of title (CoT) were obtained for the Site via Land Insight. To facilitate the historical CoT search, the Site was dissected into nine smaller parcels, as shown in Plate 4. Information obtained from review of the historical CoT refers to these smaller parcels, as summarised in Table 10. The historical CoT and additional information are included in full in Appendix E. The review of historical CoT supports that all terrestrial portions of the Site have historically been used for roadway/road reserve purposes with some areas previously included within the landholdings for the Raffles Hotel. The portion of the Site within the Swan River has not been held for any other recorded purpose other than that of a waterbody for ecological and recreational benefit.

Plate 4 *Individual parcels referred to in the historical CoT search for the Site, completed via Land Insight.*

Table 10 Historical CoT information

Parcel ID	Date of acquisition and term held	Registered proprietor information	Volume/Folio	GHD comment
1	14/7/2010 (2010 to 2015)	Department of Water (managed by Swan River Trust)	3151/540 (Crown Land Record)	Portion of the Swan River that is historically and currently managed as an ecological and recreational reserve.
	13/10/2015 (2015 to current)	State of Western Australia – DBCA (managed by Swan River Trust) Within the Reserve No. 48327 for the purpose of Protection and Enhancement of the Ecological and community benefits and amenity of the Swan and Canning Rivers		
2	*No historical CoT identified – included within the area designated as 'Canning Beach Rd' in historical plan 1751* (included in Appendix E).			
3	4/2/1915 (1915 to 1921)	William Morris Thomas (Hotel Keeper) & Mary Bertha Thomas (Married Woman)	611/61	Historically these parcels were likely part of the land holdings for the Raffles Hotel; however, were excised in 1941 to form part of the 'Canning Beach Rd'. Currently, these parcels form part of the shared path network.
	7/12/1921 (1921 to 1924)	Mary Bertha Thomas (Widow – Surviving Proprietor)		
	31/10/1924 (1924 to 1934)	George McCarter (Tea Room Proprietor) & Louisa McCarter (Married Woman)	873/95	
	26/10/1934 (1934 to 1937)	Peter Joseph Clinton (Sales and Service Manager) & Ellen Mary Clinton (Married Woman)		
	2/3/1937 (1937 to 1941)	Ellen Mary Clinton (Widow – Notice of Death)		
	23/8/1937	Joseph Adolphus Coleman (Hotelkeeper)		
	17/1/1941	Notification of proposed resumption of Land for Road (Road No. 10002)	Government Gazette 17/01/1941 Folio 63	
	14/2/1941	Notification of Opening of Road (Road No. 10002)	Government Gazette 14/02/1941 Folio 211	
4	4/2/1915 (1915 to 1921)	William Morris Thomas (Hotel Keeper) & Mary Bertha Thomas (Married Woman)	611/61	
	7/12/1921 (1921 to 1924)	Mary Bertha Thomas (Widow – Surviving Proprietor)		
	29/1/1924 (1924 to 1924)	Ethel Watt (Married Woman)	850/83	
	30/5/1924 (1924 to 1926)	Bertha Manlova Bursey (Married Woman) & Edith Smythe (Married Woman)	860/72	
	17/9/1926 (1926 to 1929)	Arthur Edmund Bursey (Hotelkeeper)		
	6/7/1929 (1929 to 1929)	Frederick Coleman (Hotelkeeper)	1011/421	
	17/9/1929 (1929 to 1941)	Joseph Adolphus Coleman (Hotelkeeper)		
	17/1/1941	Notification of proposed resumption of Land for Road (Road No. 10002)	Government Gazette 17/01/1941 Folio 63	

Parcel ID	Date of acquisition and term held	Registered proprietor information	Volume/Folio	GHD comment
	14/2/1941	Notification of Opening of Road (Road No. 10002)	Government Gazette 14/02/1941 Folio 211	
5	4/2/1915 (1915 to 1921)	William Morris Thomas (Hotel Keeper) & Mary Bertha Thomas (Married Woman)	611/61	Historically this parcel was likely part of the land holdings for the Raffles Hotel. The parcel was excised in 1927 (earlier than parcels 3 and 4) for use as a road. Currently, this parcel forms part of the shared path network.
	7/12/1921 (1921 to 1924)	Mary Bertha Thomas (Widow – Surviving Proprietor)		
	25/3/1927	Notification of Opening of Road (Road No. 7680)	Government Gazette 25/03/1927 Folio 856	
	17/1/1941	Notification of Proposed Resumption of Land for Road (Road No. 10002)	Government Gazette 17/01/1941 Folio 63	
	14/2/1941	Notification of Opening of Road (Road No. 10002)	Government Gazette 14/02/1941 Folio 211	
6	Prior to 1900	*No historical CoT identified – provided for as a road on a plan dated prior to 1900.*		Historically identified as a road; currently forms part of the shared path network.
	17/1/1941	Notification of Proposed Resumption of Land for Road (Road No. 10002)	Government Gazette 17/01/1941 Folio 63	
	14/2/1941	Notification of Opening of Road (Road No. 10002)	Government Gazette 14/02/1941 Folio 211	
7	*No historical CoT identified – formerly below the high-water mark and part of the Canning River. Refer to attached Plan 2759* (included in Appendix E).			
8	*No historical CoT identified – provided for as part of Canning Highway on a plan dated prior to 1900. Refer to attached Plan 2759* (included in Appendix E).			
9	To current	State of Western Australia – Main Roads Western Australia (Road)	3176/104 (Crown Land Record)	Parcel forms part of Canning Highway and has historically been designated as such (refer to Plan 425439 in Appendix E).

5.1.2 Historical business records

The Land Insight Report (2025) included historical business records in the vicinity of the Site. Each of the records (from 1970, 1990, 2005, 2010, and 2015) were mapped to the address level and identified business activities which may have the potential to cause contamination. None of the records pertained to the Site. A summary of the business records identified is presented in Table 11, with the full list presented in Appendix B.

Table 11 Historical business records identified in the Land Insight Report (2025)

Activity type	Business name	Address	Year (s) registered	Location relative to the Site
Motor Engineers and Repairers & Air Conditioning (Automotive)	Thorp's Auto Service	918 Canning Hwy, Applecross, WA	1990	98.6 m west
Photographers – Portrait & General	Falls JM	57 Canning Beach Rd, Applecross, WA	1970	102.6 m southwest
Motor Garages & Service Stations	Henson Alan C	55 Canning Beach Rd, Applecross, WA	1970	113.3 m west
	Solo Oil Australia Pty Ltd	916 Canning Hwy Canning Bridge, WA	1990	149.9 m west

Activity type	Business name	Address	Year (s) registered	Location relative to the Site
Gardeners; Landscape Contractors 7 Designers	Jansen's Gardening Services	8 Moreau Mews, Applecross, WA	2005	139.9 m southwest
Fruiterers & Greengrocers	S & S Fruit Markets Pty Ltd	916 Canning Hwy, Canning Bridge, WA	1970	149.9 m west
Boat & Yacht (equipment, sales, outboard motors, builders, repairers)	Trailezy Sales/Trailezy Boats Pty Ltd	914 Canning Hwy, Applecross, WA	1990, 2005, 2015	149.9 m west
	WA Boat Sales		1990, 2010	
Motor Car & Truck Cleaning Services	Canning Bridge Car Spa	2 The Esplanade, Applecross, WA	1990	161.1 m southwest

5.2 Historical aerial imagery

A selection of available aerial photographs sourced from Land Insight Report (2025) were reviewed to ascertain the development history of the Site and previous land uses which may have potentially caused contamination. It is noted that the historical imagery is not perfectly georeferenced, and the location of the Site has been inferred or adjusted slightly using surrounding defining features (such as roads).

A summary of the reviewed photographs is provided in Table 12 and imagery from Land Insight (2025) is provided in Appendix F. Based on a review of the historical aerial photography, the Site has had the following land uses:

– 1942 to current: Public open space (foreshore), road reserve (Canning Highway) and water body (Swan River) for ecological and recreational benefit.

Table 12 Historical imagery review

Year	On-Site	Off-site
1942	The Swan River dominates the northern portion of the Site and it fairly shallow proximal to the northern foreshore area and appears deeper proximal to the eastern foreshore. The terrestrial portions of the Site are dominated by an asphalt roadway. A limited section of sandy beach is present in the northwest portion of the Site and limited vegetation (shrub-like) is apparent along the northern foreshore area, with one tree visible in the southeast portion of the Site.	**North:** the Swan River is present, appearing as relatively shallow along the foreshore areas and appearing deeper within the main water body area. **East:** a small jetty/floating pontoon extends from the eastern foreshore section of the Site approximately 60 m north of Canning Bridge. Further to the east is the Swan River, followed by the foreshore area (limited wetland/vegetated areas) with low-density residential properties and roadways of the Como area beyond. **South:** the Raffles Hotel complex (comprising a main building, several minor additional buildings, asphalt entry/parking area, and a grassed area lies to the south of the northern portion of the Site (and to the west of the southeastern portion of the Site). The Canning Highway and Canning Bridge is present to the south of the Site and runs approximately east-west. Beyond the Canning Highway is a limited foreshore area (grassed with minimal vegetation and a narrow sandy beach) prior to the Canning River. **West:** land to the west of the Site is dominated by low-density residential properties and roadways, interspersed with areas of vegetation with minor tracks throughout. The Applecross District Hall and Raffles Hotel are notable historical buildings evident to the west of the Site.
1953	Additional small trees appear to have been planted within the eastern portion of the Site. A boat is present within the Swan River in the northern portion of the Site. Otherwise, consistent with previous imagery.	**North:** consistent with previous imagery. **East:** multiple boats are present in the vicinity of the small jetty/floating pontoon which adjoins the eastern portion of the Site.

Year	On-Site	Off-site
		South: some minor changes to the Raffles Hotel complex are visible (potential addition of minor buildings to the north and east of the main building and some changes to the grass/vegetated area although image resolution is poor). **West:** development of the previous areas of remnant vegetation (likely to low-density residential properties) is evident to the west, especially along Kintail Rd and Canning Highway. Trees have been planted along the Canning Highway. Otherwise, consistent with previous imagery.
1965	There appears to be less vegetation present along the foreshore areas of the Site (although some trees remain in the southeast portion). The extent of sandy beach along the north and east foreshore areas appears greater.	**North:** multiple small boats are present within the river to the north-northwest of the Site (likely moored). Otherwise, consistent with previous imagery. **East:** the small jetty/floating pontoon which adjoints the eastern portion of the Site is no longer present. Further east, some land filling has occurred on the eastern riverbank to narrow the channel and enable construction of a roadway (the beginnings of the Kwinana Freeway) which extends north towards the Perth CBD. **South:** expansion of the Raffles Hotel complex is noted, with additional larger buildings constructed to the north of the main (original) hotel building within the former grassed area. The area to the south of the main hotel building is now a cleared carpark area within some vegetation present around the outside. Further south, the Canning Highway has been widened and is now a dual carriageway. **West:** notable development of properties to the west has occurred, with multiple low-density residential properties (although density has increased relative to earlier imagery) and commercial premises along Kintail Rd and Canning Highway.
1975	There appears to be less vegetation present along the foreshore areas of the Site (although two trees remain in the southeast portion of the Site). Some small boats are present in the very northern portion of the Swan River section of the Site (likely moored). It is noted that the image resolution is poor.	**North:** consistent with previous imagery. **East:** the eastern river foreshore area (between the new roadway and the Swan River) appears slightly narrower. Otherwise, consistent with previous imagery. **South:** consistent with previous imagery (noting that image resolution is poor). **West:** consistent with previous imagery (noting that image resolution is poor).
1985	Generally consistent with previous imagery; however, higher image resolution/quality allows for more detailed description. The northern foreshore is unvegetated (excepting some grass) and includes a sand beach. A road (asphalt) runs along the north and east section of the Site connecting Canning Beach Rd to the carpark area to the south/southeast of the Raffles Hotel complex. The eastern foreshore is also largely unvegetated (excepting some trees) and includes a sand beach. A small platform (viewing platform or small jetty) extends from the foreshore to the Swan River in the northeast portion of the Site (approximately 110 m north of Canning Bridge).	**North:** consistent with previous imagery. **East:** the Kwinana Freeway has been constructed and is visible at the eastern extent of the image running north-south with on-off ramps providing connection to the Canning Highway. Otherwise, consistent with previous imagery. **South:** consistent with previous imagery; however, higher image resolution/quality allows for more detailed description. The Raffles Hotel complex expansion includes at least eight additional buildings to the main (original) form, most with what appear to be interconnected walkways. Lettering on the rooves indicates that buildings are part of the 'Raffles Motel'. The surrounding area is predominantly asphalt carparking with minor trees and no ground cover vegetation. **West:** consistent with previous imagery.

Year	On-Site	Off-site
1995	A footpath has been constructed along the northern and eastern foreshore areas between the roadway and the grass/foreshore. The roadway appears to have been resurfaced. Otherwise, consistent with previous imagery.	**North:** consistent with previous imagery. **East:** consistent with previous imagery. **South:** consistent with previous imagery. **West:** some expansion of commercial premises is noted between Kintail Rd and Canning Hwy. Otherwise, consistent with previous imagery.
2003	The extent of sand beaches at the northern and eastern foreshore areas appears to have diminished. The small platform appears to have been replaced by a small jetty/floating pontoon (partially obscured by the Site boundary in this image). Otherwise, the Site generally appears consistent with previous imagery, noting the image resolution is poor.	**North:** consistent with previous imagery. **East:** the extent of vegetation on the eastern riverbank (between the freeway and the Swan River) appears to have increased. Canning Bridge train station and bus station is evident within the freeway. Otherwise, consistent with previous imagery. **South:** consistent with previous imagery. **West:** further development of commercial premises between Kintail Rd and Canning Hwy has occurred. Otherwise, consistent with previous imagery.
2008	The roadway previously present along the Site foreshore appears to have been converted to a red asphalt principal shared path with adjacent footpath (as per current layout). A small boat is moored at the small jetty which extends from the eastern Site foreshore. A sandy beach is evident in the northern portion of the Site; however, it is possible that the northeast and eastern foreshore areas have been converted to retaining walls/rock walls (as per current layout). Grass and garden beds appear to have been established between the shared pathways and footpath areas.	**North:** consistent with previous imagery. **East:** consistent with previous imagery. **South:** The Raffles site has undergone major redevelopments. The original building remains with three larger buildings (high-rise) which form an apartment complex between the hotel and the Site. The area to the south of the main hotel building has also undergone extensive landscaping, with a small red asphalt car park and areas of garden bed and grass. **West:** consistent with previous imagery.
2009	Consistent with previous imagery.	**North:** consistent with previous imagery. **East:** consistent with previous imagery. **South:** consistent with previous imagery. **West:** some minor changes to residential properties (increased density) and commercial properties to west of the Site. Otherwise, consistent with previous imagery.
2011	Resurfacing of the shared path in the northwest foreshore portion of the Site (and extending off-Site) has occurred. The extent of sand beach in the northwest portion of the Site also appears to have reduced and some additional vegetation is present between the grass and the sand in this area. Otherwise, consistent with previous imagery.	**North:** consistent with previous imagery. **East:** consistent with previous imagery. **South:** consistent with previous imagery. **West:** redevelopment of some commercial properties between Canning Hwy and Kintail Rd is underway. Otherwise, consistent with previous imagery.
2013	Consistent with previous imagery.	**North:** consistent with previous imagery. **East:** consistent with previous imagery. **South:** consistent with previous imagery. **West:** consistent with previous imagery.
2015	Consistent with previous imagery.	**North:** consistent with previous imagery. **East:** consistent with previous imagery. **South:** consistent with previous imagery. **West:** consistent with previous imagery.
2017	Consistent with previous imagery.	**North:** consistent with previous imagery. **East:** principal shared path on eastern bank passing beneath Canning Bridge has been resurfaced (green). Otherwise, consistent with previous imagery. **South:** consistent with previous imagery. **West:** consistent with previous imagery.

Year	On-Site	Off-site
2019	Consistent with previous imagery.	**North:** consistent with previous imagery. **East:** consistent with previous imagery. **South:** consistent with previous imagery. **West:** development is underway on properties between Kintail Rd and Canning Hwy. Otherwise, consistent with previous imagery.
2021	Section of principal shared path in the southeast section of the Site which passes under Canning Bridge heading south has been resurfaced (green). Otherwise, consistent with previous imagery.	**North:** consistent with previous imagery. **East:** consistent with previous imagery. **South:** principal shared path which passes beneath Canning Bridge has been resurfaced (green) and rock wall has been constructed beneath Canning Bridge, likely for erosion control. Heavy vehicles are parked in road reserve to the south of Canning Hwy (possibly for maintenance activities). Otherwise, consistent with previous imagery. **West:** two large vacant blocks are present to the west of the Site. Otherwise, consistent with previous imagery.
2023	Consistent with previous imagery.	**North:** consistent with previous imagery. **East:** consistent with previous imagery. **South:** consistent with previous imagery. **West:** development is underway within Canning Beach Rd reserve and across two large properties to the west (likely high-rise construction for mixed use or residential use).
2025	Consistent with previous imagery.	**North: c**onsistent with previous imagery. **East:** consistent with previous imagery. **South:** consistent with previous imagery. **West:** construction works are complete or nearing completion at large development sites to the west of the Site. Otherwise, consistent with previous imagery.

5.3 DWER contaminated sites database

Land Insight search identified 10 listed contaminated sites within a 1 km radius of the Site, as presented in Table 13 and illustrated in mapping provided in Appendix B.

The Land Insight search was based on a review of properties visible within the DWER contaminated sites database (DWER 2025d) which indicates the location and details of properties which have been classified under the Contaminated Sites Act (CS Act) as either *Contaminated – Remediation required* (C-RR), *Contaminated – Restricted use* C-RU), or *Remediated – Restricted use* (R-RU), therefore it is possible that properties may also exist within 1 km radius of the Site which:

– have been reported to the DWER under the CS Act but have not yet received a classification, or
– received a classification of *Possibly Contaminated – Investigation Required* (PC-IR), *Decontaminated*, or *Report Not Substantiated* (RNS).

It is therefore acknowledged that there may be additional contaminated sites present in the vicinity of the Site in addition to those presented in Table 13. Additional relevant details for each of the properties listed in Table 13 have been obtained from the Basic Summary of Records (BSR) documents available in the contaminated sites database (DWER 2025d) and included in the table below. Full BSRs for each of the identified documents are presented in Appendix B.

Table 13 Summary of listed contaminated sites within 1 km of the Site

Address	Classification under the CS Act	Description	Distance/direction from the Site
Lot 1854 on Plan 208889	R-RU	Lot 1 was formerly a service station. Hydrocarbons (such as from diesel and petrol) and lead are present in soil beneath this land parcel. Hydrocarbons (such as from diesel and petrol) are present in groundwater beneath this land parcel and extend beneath Lot 1854, the road reserve, and Lot 1855 towards the Canning River. Land use for each of the land parcels is restricted to the current use (i.e., commercial and high-rise residential for Lot 1, road reserve and recreation reserve for the affected land parcels) and the current layout and the land parcels must not be redeveloped to a more sensitive use without prior assessment and/or remediation. Abstraction/use of groundwater is restricted, and site-specific health and safety plan should be developed and implemented to manage risks to any workers planning to undertake intrusive works.	27.7 m south
Road Reserve Mount Pleasant, WA, 6153	R-RU		169.4 m southwest
Lot 1855 on Plan 208889	R-RU		190.6 m southwest
Lot 1 on Strata Plan 43064 (Strata Block)	R-RU		204 m southwest
Approximate spatial representation of Canning Beach Road reserve (Landgate PIN 11802369)	R-RU	Hydrocarbons (such as from diesel and petrol) are present in soil and groundwater beneath a service station (Lot 22 on Diagram 19618) and extend to the east and southeast to affect adjacent land parcels (Landgate PINs 11802369 and 1284137). Lot 22 is restricted for use as a service station and both Landgate PIN 11802369 and 1284137 are restricted for use as a road reserve. Redevelopment of these land parcels to more sensitive land uses must not occur without prior assessment and/or remediation, including basement construction. Abstraction and use of groundwater from beneath each of the land parcels is restricted, and a Site Management Plan (developed for Lot 22) is to be applied for all excavation works undertaken at depths greater than 0.6 m bgl.	47.3 m southwest
Approximate spatial representation of Canning Highway road reserve (Landgate PIN 1284137)	R-RU		47.4 m southwest
Lot 22 on Diagram 19618	R-RU		67.1 m west
Lot 51 on Plan 1751	R-RU	Hydrocarbons (such as from oils) are present in soils beneath this land parcel (a road verge location of a Western Power electrical transformer). Lot 51 is restricted for use as a road reserve and should not be developed for a more sensitive use without further contamination assessment and/or remediation.	285.9 m west
That portion of Lot 100 on Diagram 75742 as shown as Subject M on Deposited Plan 415521	R-RU	Hydrocarbons (such as from transformer oil) are present in soils beneath the electrical transformer on this land parcel. The land use is restricted to commercial/industrial use and should not be developed for a more sensitive use without further contamination assessment and/or remediation.	571 m southwest
Lot 4 on Diagram 48045	C-RR	The land parcel has operated as a service station since 1976 (and continues to operate as a service station). Hydrocarbons (such as from diesel and petrol) have historically been detected in soil on this land parcel and are present in groundwater as a plume beneath the service station. Abstraction/use of groundwater is restricted for the land parcel.	862.5 m southwest

As the Site does not appear in the contaminated sites database (DWER 2025d), a BSR request was submitted to on 6 May 2025 for the Site. A response was received which indicated that as of 13 May 2025, the Site has not been reported to the DWER as a known or suspected contaminated site either prior to or after the commencement of the CS Act. The full BSR request response is presented in Appendix G.

5.4 Review of council records

A FOI request to the City of Melville has been submitted in relation to any complaints regarding odour and water quality or environmental incident reports and use of the Site. A response was received from City of Melville on 18 June 2025 which indicated the existence of seven documents in relation to environmental complaints and incidents within the vicinity of the Site. These documents have been included in Appendix H.

No complaints register was available on the City of Melville website.

5.5 Freedom of information searches

A FOI request for dangerous goods for the Site was submitted to the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) and DWER on 13 April 2025.

A response was received from DWER on 13 May 2025 which indicated that the Site was not classified under the CS Act (2003) as provided in Appendix G.

A further FOI request was received from DWER on 15 July 2025 which provided information on reported historical environmental incidences to DWER between 2020 to 2025. The FOI information is available in Appendix H.

5.6 Other contaminating or hazardous activities

The Land Insight report also included a search of state and national databases associated with potentially contaminating or hazardous activities and returned the following results in/around the Site:

- A Works Approval (W6459/2020) is held by the Water Corporation for the sewage pumping station located approximately 30 m west of the Site (the location of which was confirmed during the site walkover; refer Photo 49, Appendix C).
- No properties that are subject to a clean-up, penalty notice or order.
- No properties that are classified as contaminated legacy areas, Defence/military sites or UXO areas, former gasworks sites, or per- and polyfluoroalkyl substances (PFAS) sites.
- No properties occupied by current or historical mines/quarries or landfills.
- No properties listed in the National Pollutant Inventory (NPI).

In addition, three properties with current potentially contaminating activities (i.e., industries, business and activities that may cause contamination) were identified within 200 m of the Site. These are listed in Table 14. It is noted that these properties have been identified as having an increased likelihood of causing contamination due to their potential to store or use substances that could cause contamination to the surrounding environment if not management appropriately. Commentary on GHD's assessment of the listed properties is also included in Table 14.

Table 14 Summary of properties with current potentially contaminating activities within 200 m of the Site

Property name/Address	Category	Description	Distance/Direction from the Site	GHD comment
Ampol Foodary Applecross 918 Canning Highway, Applecross	Petrol Stations and Fuel Terminals	Petrol station	67.2 m west	This property has been classified under the CS Act as R-RU (refer to Table 13).
Executive Risk Solutions 1/7 Kintail Rd, Applecross	Depots and Storage Yard	Security service	160.4 m southwest	The property is a head office and may not be used for storage of significant quantities of potentially contaminating substances or where activities other than

Property name/Address	Category	Description	Distance/Direction from the Site	GHD comment
				administrative are undertaken.
Rowing WA 4 The Esplanade, Mount Pleasant		Rowing club	190.8 m southwest	The property is a rowing club. Storage activities likely limited to storage of rowing boats and potentially limited quantities of tools/chemicals associated with rowing boat maintenance.

There are known ambient PFAS concentrations in surface water and groundwater across the Perth metropolitan area, due to urban land uses, which includes the Site (Richmond, 2022). In surface water (collected from urban lakes), the three most-commonly detected PFAS compounds were perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and perfluorohexane sulfonate (PFHxS) (Richmond, 2022). The median PFOS concentration for sampling sites located on the Swan Coastal Plain was 0.005 µg/L and tended to be higher in catchments with industrial or commercial land uses (Richmond, 2022). In the surface water of the Swan Canning Estuary (i.e. within the Swan River), PFAS were detected above the 99% species protection limit (mostly PFOS, PFOA and PFHxS) (Novak and Hoeksema, 2022). Novak and Hoeksema (2022) noted that total PFAS concentrations were consistently higher for the middle Swan Estuary (where the Site is located) and lowest in the Lower Swan Canning Estuary (downstream of the Site), likely due to mixing and dilution effects.

PFAS compounds in groundwater were noted to be lower than those in surface water at 91% of locations reporting above the laboratory limit of reporting and median PFOS concentrations of 0.0027 µg/L in autumn and 0.0054 µg/L in spring (Richmond, 2022).

PFAS compounds were detected in black bream and blue swimmer crab specimens collected from the Swan Canning Estuary (Novak and Hoeksema, 2022). PFAS accumulates in aquatic biota and transfer through the food chain in varying levels and difficult to determine on potential impact of the observed concentrations of PFAS in water and biota on higher order consumers, such as humans (Novak and Hoeksema, 2022). Novak and Hoeksema (2022) noted that the consumption of fish and crabs presents minimal risk to human health based on current data.

Richmond (2022) indicated that there is no unacceptable risk to human health from ambient concentrations of PFAS in surface water or groundwater. As such, the groundwater and surface water at the Site and surrounds (including the Swan River Estuary) is anticipated to contain low levels of PFAS but not at levels which pose an unacceptable risk to human or ecological receptors. Given that the proposed development is generally consistent with current land-use, it is considered unlikely that the proposed development would significantly change these conditions.

5.7 Underground services

A Before-You-Dig-Australia (BDYA) search was undertaken on 22 April 2025 and responses were received from ATCO Gas Australia, NBN Co, Nextgen, Optus, Telstra, Vocus, Water Corporation, and Western Power. Most identified assets traverse the southeast portion of the Site alongside Canning Highway/Canning Bridge.

A summary of the responses is presented in Table 15, with all responses presented in full in Appendix B.

Table 15 Summary of underground services based on BYDA search response from 22 April 2025

Asset owner	Asset type	Assets identified?	Comment
ATCO Gas Australia	Gas	Yes	A natural gas transmission pipeline traverses the southeast portion of the Site along Canning Highway/Canning Bridge with maximum allowable operating pressure (MAOP) greater than 1900 kPa.

Asset owner	Asset type	Assets identified?	Comment
NBN Co	Communications	Yes	Communications cabling (in Telstra conduit) traverses the southeast portion of the Site along Canning Highway, a manhole is present immediately adjacent to Canning Bridge.
	Electricity	No	N/A
Nextgen	Communications	Yes	Cables (in third-party duct) traverse the southeast portion of the Site along Canning Highway/Canning Bridge.
Optus	Communications	Yes	Cables (in other utility conduit) traverse the southeast portion of the Site along Canning Highway/Canning Bridge.
Telstra	Communications	Yes	Fibre-optic cables traverse the southeast portion of the Site along Canning Highway/Canning Bridge.
Vocus	Communications	Yes	Fibre-optic cables traverse the southeast portion of the Site along Canning Highway/Canning Bridge.
Water Corporation	Water	Yes	Water pipes service the Raffles apartment complex and run along Canning Beach Rd. Water pipes traverse the southeast portion of the Site along Canning Highway/Canning Bridge.
	Sewer	Yes	Active sewage pipes are present on Canning Beach Road west of the Site. A sewage pipe (not in use) traverses the southeast portion of the Site along Canning Highway/Canning Bridge.
Western Power	Electricity	Yes	The northwest landside section of the Site partially intersects a proposed 'design area' for overhead power construction along Canning Beach Road. No power poles are mapped as within the Site boundary. Low-voltage (<1000 V) underground power lines are present within the Site, predominantly around the boundary with the Raffles Hotel and Apartments. A pillar is present in the southeast portion of the Site within the Canning Highway road reserve (refer to Photo 42, Appendix C).
	Communications	Yes	Fibre-optic cables (80 mm conduit) traverse the southeast portion of the Site along Canning Highway/Canning Bridge.

6. Site inspection

6.1 Site inspection

A Site inspection was completed on the 1 May 2025 at 7:45 am. Photos and notes from the visit are provided in Appendix C. There was no one available on-Site for an interview.

The weather conditions at the time of the inspection were noted as fine (~26ºC) with no rain, moderate winds[7] (north-easterly) and minimal cloud cover. It was noted that construction works were underway in the surrounding area. The landside portion of the Site was observed to comprise a mixture of unsealed surfaces (grassed areas, garden beds) and hardstand (footpath, and principal shared path/cycleway both in good condition) (e.g., Photos 1, 3, 33). The waterside portion of the Site was observed to comprise open water (the Swan River). The northwest foreshore area consisted of a limited area of sand beach, with retaining walls and rock walls forming the foreshore boundary between the landside and waterside portions of the Site in all other areas (e.g., Photos 15, 16). A small jetty/floating pontoon was observed to extend from the eastern foreshore area out into the Swan River. No boats were moored at the jetty at the time of the Site inspection and mussels were observed on the underside of the floating pontoon (Photo 26).

The vegetation (grass and garden beds) was observed to be in good health and a reticulation system was present (e.g., Photos 9, 19). Some areas of limestone retaining walls along the eastern side of the neighbouring apartment complex (i.e., at the western Site boundary) were observed to be stained and wet which was inferred to be due to recent irrigation (Photo 30)

No overhead services were identified. Other evidence of underground services within the landside Site area included concrete manhole covers (Photos 7, 8, 13, 14, 17, 18), distribution panels (Photo 5), and valve/pipework associated with the neighbouring apartment complex (Photos 6, 11, 12). Numerous pipe outlets (inferred to be stormwater drains) were identified at the Site, all of which were dry at the time of the Site inspection but are inferred to discharge to the Swan River (Photos 2-4, 20-25, 27-28). Numerous services were observed at the southeastern Site boundary, within the Canning Highway road reserve and beneath Canning Bridge (e.g., Photos 35-46).

Off-Site to the west, a 415 V distribution panels and a Water Corporation sewage pumping station were identified approximately 40 m west along Canning Beach Rd (Photos 47-49).

Site observations are also provided on Figure 2, Appendix A.

[7] As defined in the Beaufort wind scale between 11 – 16 knots

7. Data quality objectives

As noted in Section 2.2, limited soil (terrestrial) sampling was included in the scope of work to inform this preliminary assessment.

Based on the desktop study and Site inspection completed for the DE, GHD considers that formulation of a series of appropriate objectives are required to ensure that data are captured in a consistent manner and with respect to appropriate guidance. Therefore, GHD has developed the following data quality objective (DQO) program with reference to guidance presented in the ASC NEPM (NEPC 1999).

The DQO process comprises the following seven steps and is presented in detail in Table 16.

– Step 1: State the problem
– Step 2: Identify the decision(s) (questions and alternative actions)
– Step 3: Identify information inputs
– Step 4: Study boundaries
– Step 5: Develop decision rules
– Step 6: Performance/criteria (tolerable limits on decision errors)
– Step 7: Develop a plan for obtaining data (optimise the DQOs).

Table 16 Data quality objectives

Step	Description
Step 1: State the problem	The potential risks posed by contamination to human health, the environment and/or environmental values present at DEs for the proposed Project are unknown. Further information is required to inform whether further investigation, risk assessment and/or remediation and management works are required to facilitate the development of the DEs. Due to the nature of the project, limited landside disturbance of soils only will be required. Disturbance of surface water (Swan River) and river sediments will however be required. There is potential for various CoPC to be encountered within soil, sediments, surface water and groundwater during the Project that may require management. The nature and severity of such impacts is however uncertain at this time.
Step 2: Identify decision(s)	Are contamination-impacted soils, sediment, surface water and groundwater present at the Site[8] and do they indicate management is required to address potential risks in order to facilitate construction of the proposed ferry landing[9].
Step 3: Identify Information inputs	The following data inputs will be required for the limited scope (terrestrial) soil sampling: – Based upon the desktop assessment – identification of relevant CoPC. – Relevant constraints (preliminary nature of the assessment – i.e., limited-scope soil sampling, level of information available for the development proposals, access constraints such as existing buried services, public use of the Site). – Selection of appropriate assessment criteria relevant to the context of the assessment (adopted guidelines and policies presented in Section 8). – Collection of soil samples, PID readings, and laboratory analysis of selected representative samples for CoPC (advance three soil bores to a maximum depth of 1 m bgl). – Documented field evidence of visual/olfactory impacts in soils used to inform sampling and analysis strategy.
Step 4: Study boundaries	**Spatial:** Soil bores located within the DE (refer to Figure 3, Appendix A). **Vertical:** The depth range of interest for soil sampling comprises maximum depths of 1 m[10]. **Temporal:** Information is required to inform the construction within the DE. The intrusive fieldwork data gathering on site was completed on 1 May 2025.

[8] Subject to the limitations of the preliminary nature of the assessment (i.e., limited-scope soil sampling).
[9] Within the context of the concept study and construction works assumed to be required at this time to facilitate the design.
[10] For two of the soil bores completed at the Site, the maximum depth achieved was 1.5 m bgl due to field error.

Step	Description
Step 5: Develop decision rule	If CoPC are present in relevant media exceeding relevant assessment criteria, then the following actions may be undertaken (separate scope of work): Identify (at a high level) management measures or controls to be adopted including consideration of: – Additional assessment to further characterise risk and inform decision making as deemed appropriate. – Review of design and/or construction methods to minimise requirements for waste disposal, soil and sediment disturbance as proposals are developed further and more information is available. – Other management action with respect to relevant media to mitigate risks to human health, the environment, or any environmental value.
Step 6: Performance/ criteria	The Data Quality Indicators (DQIs) for sampling techniques and laboratory analysis of collected samples defines the acceptable level of error required for this investigation. The DQOs were assessed by reference to DQIs as follows: **Completeness:** A measure of the amount of useable data (expressed as %) from a data collection activity. Completeness is achieved if samples have been taken from all the required sampling locations and analysed for the CoPC. Preparation of sampling documentation also forms part of the data completeness. **Comparability:** The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event. Methodologies for sampling and sample analysis will be consistent throughout the assessment to ensure that data can be reliably compared. **Representativeness:** The confidence (expressed qualitatively) that data are representative of each media present on site (as applicable). The soil assessment is considered to be representative of site conditions if all samples have been collected and analysed in accordance with the DQOs. **Precision:** A quantitative measure of the variability (or reproducibility) of data. RPD results for field and laboratory duplicates and triplicates are calculated and expected to be generally < 30 %. **Accuracy (bias):** A quantitative measure of the closeness of reported data to the true value. Accuracy is achieved if results for field and laboratory blanks, matrix spike, surrogate and laboratory control samples are of acceptable quality. Blanks are generally expected to have results below the laboratory's LOR and laboratory spike and surrogate recoveries are expected to be between 70 to 130 % (depending on analyte). The following are examples of how the DQIs will be appropriately assessed: – Analyte selection informed by identified CoPC – Assessment criteria based on ASC NEPM guidelines have risk probabilities incorporated – Decisions based on comparing 95% upper confidence limits against criteria – Acceptance limits for field and inter-laboratory duplicate comparisons specified – Acceptance limits for laboratory QA/QC based on AS4482.1-2005 and ASC NEPM requirements.
Step 7: Develop a plan for obtaining data (optimise the DQOs)	Design optimisation as follows: – Sampling and analytical schedules based on: • Review of historical data findings and concept design information • Selection of targeted locations within the DE based upon desktop findings against consideration of concept design information and access constraints (e.g. sealed surfaces) – DQOs prepared in accordance with the ASC NEPM. – The use of National Association of Testing Authorities (NATA) accredited laboratories. – Suitably experienced field scientist(s) utilised for fieldworks.

8. Assessment criteria

The following guidelines will be utilised to undertake the Tier 1 risk evaluation of collected soil samples"

– Department of Water and Environmental Regulation (DWER) 2021, *Assessment and management of contaminated sites*, Contaminated Sites Guidelines, November 2021.
– DWER (2019), *Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)*, December 2019.
– Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) 2011, Technical Report no. 10, *Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater*, September 2011.
– National Environment Protection Council (NEPC) 1999, *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1),* April 2013 [ASC NEPM].

As defined in the ASC NEPM, investigation levels and screening levels detailed herein are the concentrations of a contaminant above which further investigation and evaluation will be required.

8.1 Tier 1 screening – soil

A land use setting of 'C' – Public Open Space has been adopted as this is the current land use for the Site and is not expected to change post-development. The criteria to be used as summarised in the following subsections.

8.1.1 Human health screening criteria

Health screening levels (HSLs) published in Schedule B1 of the ASC NEPM will be adopted to assess potential chronic human health risks from hydrocarbon impacted soils via the vapour intrusion pathway for a recreational/open space land use (HSL-C VI) (NEPC 1999). Criteria for the SAND soil type will be adopted as this is the soil type encountered in all soil sampling locations within the DE.

Direct contact HSLs for recreational/open space land use (HSL-C direct contact) and intrusive maintenance workers (IMW) and vapour intrusion HSLs for IMW will be adopted from CRC CARE (2011) as they are not published in the ASC NEPM (NEPC 1999).

Health investigation levels (HILs) published in Scheule B1 of the ASC NEPM will be adopted to assess chronic human health risks from other non-petroleum hydrocarbon contaminants for a recreational land use setting such as public open space (HIL-C).

8.1.2 Ecological screening criteria

Given the Site setting and proximity of the Site to the Swan River and Canning River systems, ecological screening levels (ESLs) and ecological investigation levels (EILs) published in Schedule B1 of the ASC NEPM for urban residential/public open space will be adopted as Tier 1 ecological screening criteria.

ESLs and EILs typically apply to the upper 2 m bgl which represents the typical depth extent for most ecological species to be present within.

8.1.3 Management limits

The Management Limits (MLs) published in the ASC NEPM are intended to be applied following evaluation of human health risks, ecological risks, and risks to groundwater resources. The MLs are not depth limited and are utilised as Tier 1 criteria to screen for the following potential risks associated hydrocarbon contaminants:

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

The ASC NEPM qualifies that the MLs are relevant to operating sites, where sub-surface leakage of petroleum compounds has occurred, or when decommissioning industrial and commercial sites.

8.2 Waste classification – soil

The characterisation of soil (in-situ) will be undertaken with reference to DWER (2019) guidelines. The material will be assessed relative to the following criteria:

– Uncontaminated fill

– Landfill classification: Contaminant Threshold (CT) values.

Soil results were compared to waste classification criteria to inform potential disposal options (if required) – the comparison is however based upon limited sampling and is preliminary in nature only.

An exceedance of waste classification criteria does indicate an unacceptable risk to human or ecological health and does not (in isolation) indicate that the soils require remediation or management (i.e. disposal). Requirements for waste disposal (if any) require assessment when the proposed design has been confirmed, and likely construction requirements are better defined. Requirements for further investigation for waste classification purposes can then be determined to inform construction (where such disposal is contemplated).

8.3 Summary of criteria

A summary of the soil assessment criteria is provided in Table 17.

Table 17 Summary of adopted soil criteria

Matrix	Type	Criteria
Soil	Health-based	NEPM (2013) Table 1A(1) Health Investigation Level (HIL) for Recreational C (HIL-C)
		NEPM (2013) Table 1A(3) Health Screening Level (HSL) for Recreational/ Open Space Land Use (HSL-C)
		CRC CARE (2011) Soil Direct Contact Health Screening Level for Recreational/ Open Space Land Use (HSL-C)
		CRC CARE (2011) Soil Health Screening Level for Vapour Intrusion Intrusive Works
		CRC CARE (2011) Soil Vapour Health Screening Level for Intrusive Maintenance Worker
	Ecological	NEPM (2013) Table 1B(6) Ecological Screening Level (ESL) Urban Residential and Public Open Space, Course Soil
		NEPM (2013) Table 1B Ecological Investigation Level (EIL) for and Residential and Public Open Space Land Use
	In-ground Services	NEPM (2013) Table 1B(7) Management Limits Residential, Parkland and Public Open Space, Coarse Soil
	Waste classification	DWER (2019) Landfill CT Class 1-4
		DWER (2019) Landfill Uncontaminated Maximum Concentration

9. Methodology - limited soil assessment

9.1 Pre-mobilisation tasks

9.1.1 Health and safety

Prior to Site mobilisation the following tasks were undertaken:

– Completion of relevant health, safety, and environment (HSE) documentation for GHD personnel during the Site activities, comprising preparation and review of a Job, Safety, and Environmental Analysis (JSEA) and completion of pre-work assessments onsite prior to commencing works and at any relevant hold points (where required). A Safe Work Method Statement (SWM) describing the method for the proposed Site inspection and soil sampling (via hand augering) being undertaken was also prepared. These documents were provided to the PTA for review prior to commencement of Site works.
– Review of service plans for the Site (BYDA) to identify potential locations of subsurface infrastructure and ground-truthing of these features onsite. Soil sampling locations were positioned to avoid known services (Section 9.1.2).
– All personnel involved in the Site works met for a pre-work assessment prior to commencing work which included review of the JSEA and discussion/identification of any additional safety concerns such as weather conditions, traffic, access etc. on the day of works.
– Checking of personal protective equipment (PPE) as required.
– Review the GHD JSEA on-site via toolbox meeting or briefing.

GHD personnel who completed works onsite were suitably trained and experienced to complete the proposed works safely.

9.1.2 Services

To minimise the risk of underground services being encountered, disturbed, or damaged, the following was undertaken:

– Desktop searches for utility information (BYDA) were carried out prior to field work
– Ground-truthing of utilities onsite (where possible)
– Visual assessment of any obvious surface scarring or other evidence of buried services/ground disturbance in the vicinity of planned investigation locations
– Investigation locations were planned to avoid the locations of known services and the locations were moved as needed during the Site works to minimise the risk of damaging/encountering underground services based on Site observations
– Soil bores were advanced using manual hand tools only (i.e., a hang auger) and due care was taken by GHD personnel to mitigate damage to sensitive and potentially unprotected utilities (e.g., fibre optic cables)
– Work stopped if potential buried services or asbestos containing materials (ACM) were encountered[11].

Further practical considerations (where relevant) comprised the locations within areas of unsealed ground (i.e., garden beds and lawns) to enable the use of manual hand tools and to avoid trafficked areas such as roadways and paths (i.e., for safety and to minimise disturbance).

9.1.3 Soil sample location selection

Soil sample locations (HA01, HA02, and HA03) were selected based on a number of practical and investigation considerations that were based on the findings of the desktop study and information review and based on observations made onsite during the inspection. Specific investigation considerations comprised:

[11] No asbestos was encountered during the soil investigation.

– Positioning the locations to enable adequate spatial coverage of the soils present in the upper 1 m bgl across the Site.
– Positioning of location GHD_Applecross_HA02 to target soil conditions proximal to the jetty (it is understood that this area is likely to be disturbed as a result of the proposed development works).

The locations of soil bores (GHD_Applecross_HA01, GHD_Applecross_HA02, and GHD_Applecross_HA03) are shown on Figure 3 (Appendix A).

9.1.4 Field equipment calibration

Field instrumentation (Photoionisation Detector [PID]) was calibrated prior to use by the equipment supplier. The calibration certificate is provided in Appendix J.

9.2 Methodology

Soil sampling was undertaken via hand augering at three terrestrial locations. The hand augering methodology is provided below:

– Inspection of the soil surface at the intended sampling locations for potential indicators of contamination (e.g., staining, liquids, odours, potential ACM, rubble, or waste materials).
– Clear the area to be sampled of leaf litter and any surface debris (e.g., sticks, rocks, litter) using a spade/trowel and (depending on the stability of the soil) removal of the first few centimetres of soil from a radius of around 150 mm around the drilling location.
– Commencement of augering, periodically removing and depositing accumulated soils onto a plastic sheet or core tray placed beside the hole, continuing until the target depth (1 m bgl) is reached or until refusal is encountered[12].
– Collection of samples from the removed soils using laboratory supplied sample containers either by a gloved hand or using a hand trowel. Record the location of the sampling point and the soil type and depths at which samples are taken. Any non-soil debris (such as gravels, organic materials, or foreign objects) were excluded from the sample container, where possible.
– PID reading of soils taken at each sampled depth by placing a small amount of soil in a ziplock bag and placing the probe inlet from the PID within the bag.
– Excess soil cuttings returned to the hole in the order in which it was removed and tamp down.

All observations, measurements, and information obtained during hand augering and soil sampling were recorded on soil bore logs, included in Appendix J.

9.2.1 Decontamination methods

All reusable equipment that came into contact with the soil samples (i.e., hand auger, trowel) was decontaminated prior to commencing the investigation and between the investigation locations. The decontamination method was as follows:

– Remove bulk residual material (i.e., soils) from the equipment by using a stiff brush, scrubbing in a bucket of tap water.
– Thoroughly wash the equipment in a second bucket containing tap water and detergent of known composition (Decon 90).
– Rinse the equipment with tap water.

Care was taken during the decontamination process to reduce spills and control the release of all water.

Dedicated, disposable nitrile gloves were worn by field personnel during sampling, and these were replaced between samples to minimise the potential for cross-contamination.

[12] At two of the hand auger locations (HA01 and HA02), field personnel progressed the soil bores to a maximum depth of 1.5 m bgl due to field error. The location of HA02 was moved westwards away from the jetty (initially proposed location) following four attempts which resulted in refusal within the upper 0.3 m bgl.

10. Quality assurance and quality control program

QA/QC procedures were undertaken in accordance with the ASC NEPM (NEPC 1999) and DWER (2021) requirements and a QA/QC evaluation is summarised in Table 18 (overleaf). The fieldwork for the three DEs (including the Site) where soil sampling was completed were treated as a single continuous field program for the purposes of the QA/QC program. Therefore, QA/QC was assessed with respect to the whole program rather than on an individual Site basis for the purpose of frequency (such as blind and split duplicate collection) and completeness. A review of the field and laboratory QA/QC data and procedures indicates an acceptable level of compliance with DQOs, general project requirements and project objectives.

With consideration for the DQIs of completeness, comparability, representativeness, precision, and accuracy (NEPC 1999), the collected data is assessed to be of suitable quality with respect to consideration of relevant soil characteristics at the sampled locations within the Site. As such, it is considered that there is an acceptable level of confidence in the data to inform decision-making.

Table 18 Summary of QA/QC compliance

QA/QC element	Requirement	Requirement adhered to?	Information/data acceptable?
Fieldwork aspects			
Detailed records (completeness)	Records documenting field activities using standardised templates, CoC forms and records	Yes	Yes - Detailed field notes (site inspection and bore logs) were collected and recorded in standardised templates (Appendix C and Appendix J respectively). CoCs were completed and provided to the laboratory with the collected samples (Appendix K).
Methodology (comparability)	Sampling was completed in accordance with the proposed methodology (Section 9).	Yes	Yes – Sampling was completed in accordance with the proposed methodology. The same methodology was used at all soil sampling locations during this investigation.
Decontamination	The use of new disposable gloves for the collection of each sample and decontamination of the sampling equipment between each sampling location.	Yes	Yes – Sampling procedures adhered to acceptable level in conducting fieldworks to a level considered sufficient to minimise risk of cross contamination. No analyte concentrations were observed above LOR in the field rinsate, blank or transport blank samples collected on the day of sampling (1 May 2025). This further supports that decontamination methods were effective between sampling locations, and that the data set has not been compromised by possible cross contamination issues to an extent to prevent decision making.
Sample preservation and analytical holding times	All samples transported/received by the analytical laboratory in accordance with relevant holding time requirements	Yes	Yes – All samples were received by the laboratories and analysed within the respective holding times (Appendix K). Collected samples were immediately transferred to laboratory supplied sample containers of appropriate composition and preservation for the required laboratory analysis. All sample containers were clearly labelled with a sample number, job number, sample depth and sample date. The sample containers are then transferred to a chilled insulated container (using ice bricks contained in plastic) for sample preservation prior to and during shipment to the analytical laboratory and were received chilled.
Calibration of field equipment	Field equipment will be calibrated by the rental supplier to ensure accuracy of measurements taken in the field.	Yes	Yes – The PID used during the field works was calibrated by the supplier prior to use and the calibration certificate provided (Appendix I)
Analysis suite (accuracy)	Samples were submitted for proposed soil analysis suite	Yes	Yes – All soil samples were submitted for the proposed soil analysis suite.

QA/QC element	Requirement	Requirement adhered to?	Information/data acceptable?
QC sampling frequency (precision)	Duplicate sampling and sampling protocols 1: 20.	Yes	Yes – the total number of primary samples analysed as part of the project was 39. Two blind duplicates and two split duplicates were collected/analysed for the same analytical suite as the primary samples (although not collected from the Site). This achieves the required frequency of 5% (1 blind/split duplicate pair per 20 primary samples) for the project.
Representativeness of samples collected/analysed (representativeness and completeness)	All relevant media were sampled during the investigation. Soil samples were collected at the proposed sampling locations and intervals (three per location at 0.0 m bgl, 0.5 m bgl and 1 m bgl) or at least one sample from each unique soil horizon.	Yes	Yes – The relevant media (soil) was sampled during the investigation. Yes – Soil samples were obtained at an appropriate frequency and within relevant lithological units. All proposed soil sampling locations were completed.
RPDs (precision)	RPDs are within acceptable range (<30%)	Yes, with minor exceptions	Yes – with minor exceptions[13] – 659 out of 671 RPD calculations (98%) returned a value within the acceptable range (<30%). All 12 of the RPDs outside the acceptable range occurred where both analyte results were close to the LOR (<10 x LOR). As results approach the LOR accuracy decreases and therefore, the observed RPD exceedances are likely caused by the decreasing accuracy of the laboratory method at low concentrations. Most (nine) of the RPD exceedances occurred between the primary and blind duplicate samples. The RPDs exceedances were not considered to have affected the soil assessment were there was acceptable field and laboratory precision.
Laboratory aspects			
NATA accreditation (accuracy)	Analysis of COPCs performed under NATA accreditation or equivalent government-endorsed provider of accreditation	Yes	Yes – The two laboratories used for this investigation: ARL I Eurofins (primary) and ALS Environmental (secondary), are NATA accredited laboratories.
Holding times	Laboratory to complete sample extraction and analysis of COPC within method specifications	Yes	Yes – Analytes were extracted and analysed within the recommended holding times by the laboratories (Appendix K).
Analytical methods (accuracy)	Appropriate methods for each COPC with regard to Schedule B(3) of the ASC NEPM and in accordance with the laboratory's NATA accreditation	Yes	Yes – Methods provided in Appendix K.
Applied laboratory limit of reporting (LOR) values (accuracy)	Laboratory LOR values below the adopted assessment criteria	Yes	Yes – All CoPC LORs achieved for soil samples submitted for analysis were at or below the relevant adopted assessment criteria.

[13] GHD notes that the duplicate samples were collected from the Ellam St DE (not the Site) but, as soil sampling was completed as a single continuous program, has been treated as representative of precision for QA/QC purposes across all the sampled DEs.

QA/QC element	Requirement	Requirement adhered to?	Information/data acceptable?
Laboratory QC results (accuracy)	Laboratory quality control performance to comply with the requirements described	Yes, with minor exceptions	Yes, with minor exceptions – No method blank, laboratory duplicate, matrix spike, surrogate recovery or quality control sample frequency outliers were reported (Appendix K). Some minor laboratory control spike outliers exist: Five analyses had recoveries greater than upper control limit (Appendix K). These were not considered to have affected the soil assessment as all concentrations of these analytes were below LOR in soils analysed as part of this investigation.

11. Results – limited soil assessment

Soil sampling was completed at the Site on 1 May 2025. Soil sampling locations are illustrated in Figure 3 (Appendix A). The sampling locations at the Site are summarised below:

– GHD_Applecross_HA01
– GHD_Applecross_HA02
– GHD_Applecross_HA03

11.1 Field observations

11.1.1 Site-specific ground conditions

The lithology encountered on-Site was generally consistent with that expected following review of desktop information (Section 4.3). A summary of the soils encountered on-Site is provided in Table 19. Soil bore logs are presented in Appendix J.

Table 19 Summary of general lithology encountered on-Site

Depth (m bgl)	Material	General lithology encountered	PID reading (ppm)
0.0 to 0.1	N/A	GRASS, grass over dark brown sands with organics.	
0.1 to 0.4	FILL	SAND, grey or pale brown, poorly graded, medium grained, subangular to subrounded, slightly moist, medium dense, with trace fine to coarse gravel and trace organics. *Sand was loose at GHD_Applecross_HA03.*	0.0 – 0.2
0.4 to 1.0		SAND, orange or pale yellow, poorly graded, medium grained, subangular to subrounded, slightly moist, medium dense. *Sand was well-graded and loose at GHD_Applecross_HA03.*	0.0
0.6 to 1.25	NATURAL - Alluvium	SAND, grey or pale grey, poorly graded, medium to coarse grained, subangular to subrounded, wet (becoming more saturated with depth), medium dense. *Sand was observed to be uniform and subrounded at GHD_Applecross_HA02.*	0.0
0.8 to 1.5		SAND, dark grey or pale grey, poorly graded, medium to coarse grained, subangular to subrounded, saturated, medium dense. *Sand was observed to be uniform and subrounded at GHD_Applecross_HA02.*	0.0
Comments	The target depth (1 m bgl) was achieved at all hand auger locations completed at the Site. The investigation depth exceeded the target depth (i.e., soil bores were advanced to 1.5 m bgl) at GHD_Applecross_HA01 and GHD_Applecross_HA02 due to field error. GHD_Applecross_HA02 was relocated after several attempts resulted in refusal within the upper 0.3 m bgl at the original location (nearer to the jetty). Following relocation, the target depth was achieved.		

11.1.2 Visual and olfactory observations

No odours or staining were observed in the soil profile at the locations subject to soil assessment. No observations of foreign material (i.e., waste, rubble, or other non-natural objects) were observed in the soil profile. Recorded PID measurements were typically 0.0 parts per million (ppm), excepting soils present at 0.1 m bgl at location GHD_Applecross_HA01 which recorded 0.1 ppm.

11.2 Soil analytical results

11.2.1 Soil analytical suite

The analytical suite for this limited soil assessment was selected based upon information obtained from the desktop component of this PSI and summarised in in Table 20.

Table 20 Soil analytical suite

Analyte group	Reason	Applicable area
Metals (arsenic, cadmium, chromium [III+VI], copper, lead, mercury, nickel, and zinc)	Uncontrolled fill of unknown origin suspected to be present within the Site area.	Site wide
Hydrocarbons (total recoverable hydrocarbons [TRH], benzene, toluene, ethylbenzene, total xylenes, and naphthalene [BTEXN], polycyclic aromatic hydrocarbons [PAH])		
Chlorinated hydrocarbons, semivolatile organic compounds (SVOC), and volatile organic compounds (VOC)		

Four of the collected soil samples for GHD_Applecross_HA01 and GHD_Applecross_HA02 and three of the collected soil samples for GHD_Applecross_HA03 (11 samples total) were scheduled for laboratory analysis.

11.2.2 Tier 1 screening - soil

Soil analytical results for each Site were compared against the adopted assessment criteria in Section 8. Tabulated results are presented in Appendix D and laboratory documents are presented in Appendix K.

No samples recorded concentrations of the analysed CoPC above the adopted human health or ecological screening levels or the management limits. Few, marginal detections of CoPC above the limit of reporting (LOR) were recorded for metals and chrysene. Metals concentrations were generally highest within the shallower soil profile and decreased with depth and were generally higher in samples collected from HA01 relative to other those collected from other sampling locations. A summary of detectable concentrations above the LOR is provided in Table 21. All other CoPC were not recorded at concentrations detectable above the LOR in any of the samples collected.

Table 21 Summary of CoPC detections above the LOR (note: all results were below assessment criteria)

Sample location	Depth (m bgl)	CoPC detected above LOR		CoPC (recorded concentrations)
		Metals	PAH	
GHD_Applecross_HA01	0.1 – 0.3	✓	-	Cr (4.3 mg/kg), Cu (5.1 mg/kg), Pb (39 mg/kg), Hg (0.02 mg/kg), Ni (1.2 mg/kg), Zn (26 mg/kg)
	0.3 – 0.6	✓	-	Cr (6.0 mg/kg), Cu (3.3 mg/kg), Pb (68 mg/kg), Hg (0.03 mg/kg), Ni (1.7 mg/kg), Zn (46 mg/kg)
	0.6 – 1.25	✓	-	Cr (2.5 mg/kg), Cu (1.8 mg/kg), Pb (17 mg/kg), Hg (0.03 mg/kg), Zn (16 mg/kg)
	1.25 – 1.5	✓	-	Cr (1.6 mg/kg), Cu (1.2 mg/lg), Pb (6.4 mg/kg), Hg (0.04 mg/kg), Zn (8.0 mg/kg)
GHD_Applecross_HA02	0.1 – 0.4	✓	-	Cr (6.5 mg/kg), Cu (3.1 mg/kg), Pb (9.4 mg/kg), Hg (0.02 mg/kg), Ni (1.0 mg/kg), Zn (17 mg/kg)
	0.4 – 0.6	✓	-	Cr (6.9 mg/kg), Cu (2.7 mg/kg), Pb (15 mg/kg), Hg (0.03 mg/kg), Ni (1.0 mg/kg), Zn (19 mg/kg)
	0.6 – 0.8	✓	-	Cr (1.5 mg/kg), Pb (1.9 mg/kg)
	0.8 – 1.0	-	-	-

Sample location	Depth (m bgl)	CoPC detected above LOR		CoPC (recorded concentrations)
		Metals	PAH	
GHD_Applecross_HA03	0.1 – 0.2	✓	-	Cr (5.3 mg/kg), Cu (3.2 mg/lg), Pb (8.9 mg/kg), Hg (0.02 mg/kg), Zn (20 mg/kg)
	0.2 – 0.5	✓	✓	As (2.4 mg/kg), Cr (11 mg/kg), Pb (3.0 mg/kg), Hg (0.03 mg/kg), Zn (6.9 mg/kg) Chrysene (1.8 mg/kg)
	0.5	✓	-	As (2.2 mg/kg), Cr (11 mg/kg), Pb (3.7 mg/kg), Hg (0.03 mg/kg), Ni (2.1 mg/kg)
Notes: As – arsenic, Cr – chromium (III+VI), Cu – copper, Pb – lead, Hg – mercury, Ni – nickel, Zn – zinc.				

11.2.3 Preliminary waste classification

Soil results were compared to waste classification criteria to inform potential disposal options – the comparison is however based upon limited sampling and is preliminary in nature only.

As noted in Section 8, an exceedance of waste classification criteria does indicate an unacceptable risk to human or ecological health and does not (in isolation) indicate that the soils require remediation or management (i.e. disposal). Requirements for waste disposal (if any) require assessment when the proposed design has been confirmed and likely construction requirements are better defined. Requirements for further investigation for waste classification purposes can then be determined to inform construction (where such disposal is contemplated).

All reported CoPC concentrations were below the uncontaminated maximum concentration landfill criteria. All reported CoPC concentrations were below the CT 1 to 4 classification criteria except for lead concentrations which exceeded CT Class 1&2 in most samples and the Class 3 criteria in two samples collected from GHD_Applecross_HA01. A summary of these exceedances is provided in Table 22.

Table 22 Summary of CoPC exceedances of the waste classification (CT) criteria

Sample location	Depth (m bgl)	Landfill criteria exceeded			CoPC (recorded concentration)
		CT 1 & 2	CT3	CT4	
GHD_Applecross_HA01	0.1 – 0.3	✓	✓	-	Lead (39 mg/kg)
	0.3 – 0.6	✓	✓	-	Lead (68 mg/kg)
	0.6 – 1.25	✓	-	-	Lead (17 mg/kg)
	1.25 – 1.5	✓	-	-	Lead (6.4 mg/kg)
GHD_Applecross_HA02	0.1 – 0.4	✓	-	-	Lead (9.4 mg/kg)
	0.4 – 0.6	✓	-	-	Lead (15 mg/kg)
	0.6 – 0.8	-	-	-	-
	0.8 – 1.0	-	-	-	-
GHD_Applecross_HA03	0.1 – 0.2	✓	-	-	Lead (8.9 mg/kg)
	0.2 – 0.5	✓	-	-	Lead (3 mg/kg)
	0.5	✓	-	-	Lead (3.7 mg/kg)

Exceedance of CT criteria with respect to lead in soils in this preliminary classification indicates that, in the event that disposal of soils off-Site to an appropriately licensed facility is contemplated then:

– Further characterisation of actual soils to be disposed would be required (access to such soils was constrained in the current assessment).
– Such further characterisation should include (but not be limited to) consideration of CL criteria including with respect to Australian Standard Leaching Procedures (ASLP) to facilitate such further classification.

12. Preliminary conceptual site model

A preliminary CSM is a qualitative analysis tool identifying potential contamination sources, migration pathways, exposure routes, and risk to receptors. The preliminary CSM gives consideration to the Site in its current use and potential for future exposure to occur.

The preliminary CSM has been developed to enable formulation of a robust set of data quality objectives (DQOs) in accordance with NEPM. The preliminary CSM incorporates the body of work completed and review of re-purposed data, prior to the development of this PSI.

The preliminary CSM and associated exposure pathway assessment and identified data gaps requiring further assessment are summarised in Section 12.4.

It is important to note that:

– The development of this preliminary CSM is an iterative process and may require re-assessment and review following collection of additional information as part of the staged approach to assessment of contamination provided in the ASC NEPM.
– Identification of a potential source of contamination does not necessarily result in exposure (and a risk of harm) occurring to a relevant receptor. For a current and/or future use, a complete pathway must exist between a source of contamination and a receptor for exposure to occur and a risk to be present (i.e., complete source-pathway-receptor linkage).

The inputs to the preliminary CSM are provided in below sections and the preliminary CSM is provided in Table 24.

12.1 Areas of potential environmental concern

Based on a review of desktop information and the site inspection and interview, the areas of potential environmental concerns (APECs) and associated contaminants of potential concerns (CoPC) at the Site are summarised in Table 23.

Table 23 APECs

APEC	CoPC
APEC 1: Landside: Subsurface fill soils at the Site Suspected fill sand was encountered in the upper soil profile to a maximum depth of 1.0 m bgl at the Site and metals concentrations were noted to be higher in samples targeting these upper strata. Potential for the presence of additional fill materials, associated with historical development of the Site (such as from road construction and land reclamation) elsewhere within subsurface soils at the Site (including ACM) cannot be precluded.	Heavy metals PAH Asbestos (primarily in the form of ACM) ASS
APEC 2: Surface water and sediment in Swan River A number of pipe outlets were observed at the Site and are inferred to convey stormwater and runoff towards the Swan River. Groundwater beneath the Site is also expected to be in hydraulic connection with the Swan River. The Site is dominated by footpath, cycle path, and lawn/garden beds and is used for recreational purposes by members of the public. Use of the small jetty/floating pontoon has not been confirmed; however, it is possible that it is used for recreational boating and fishing. General urban surface water runoff (e.g. containing residues of birds, dog and other animal faeces, fertilisers heavy metals, fuel from nearby roadways or boats, potentially PFAS) may drain into the Swan River in the vicinity of the Site. There are known ambient PFAS concentrations in surface water and groundwater across the Perth metropolitan area which includes Elizabeth Quay and the Site. Sediments have the potential to store/accumulate contaminants that fall out of suspension/solution from the water column. It is possible that sediments in the vicinity of the Site may have been impacted by discharging stormwater and any contaminants present within the Swan River.	Bacteria (*Escherichia coli*) Heavy metals TRH BTEXN PAH Nutrients Organotins Inorganics: Ammonium, nitrate, nitrite, organic nitrogen, and ammonia as N. Inorganic and organic phosphorous (total phosphorous) PFAS ASS (including potential ASS and MBO)

APEC	CoPC
APEC 3: Possible redundant subsurface infrastructure The Site has been used (largely as a roadway and as part of the Raffles Hotel complex) for over 100 years. It is possible that redundant infrastructure may be present within the subsurface at the Site. If present, there is the potential for the redundant infrastructure to be in poor condition and/or to be encountered during any future ground disturbing works as part of the proposed development. The construction materials (e.g., ACM) and former contents (e.g., sewage) of the redundant infrastructure may pose a potential risk of harm to human health and the environment if not properly managed when encountered.	Heavy metals Asbestos (primarily in the form of ACM)

12.1.1 Off-Site sources

The Site is located within the Perth metropolitan region and the Swan River in the vicinity of the Site is considered a modified system subject to inputs from numerous surrounding and upstream land uses. Known contaminated sites are located within 1 km of the Site and potentially contaminating land uses have also been identified (refer to Sections 5.3 and 5.6). Nevertheless, it is not considered that the quality of land, water, and air present at the Site would be significantly impacted by point source contamination emanating from these off-Site sources. However, it is acknowledged that media at the Site may be influenced by more diffuse sources of contamination associated with the urban setting (i.e., ambient levels of contaminants associated with widespread urban land uses).

12.2 Potential migration and exposure pathways

A general summary of potential exposure and/or migration pathways identified include:

- **Exposure:** Inhalation (windblown dust) – during landside construction disturbance (if any) of potentially impacted soils.
- **Exposure:** Dermal contact (impacted soils – during landside construction disturbance [if any], surface water).
- **Exposure:** Ecological uptake (impacted water, sediments, or soils by flora and fauna).
- **Exposure:** Ingestion (human consumption of impacted fauna – recreational fishing).
- **Exposure:** Incidental ingestion (construction disturbance with resultant ingestion of impacted soils, surface water, groundwater by workers undertaking construction activity)
- **Migration:** Disturbance of potentially impacted soils, surface water, and sediments:
  - Generation of windblown dust
  - Subsequent transport via surface water runoff with overland flow and discharge to the Swan River
- **Migration:** Landside construction disturbance, leaching of impacts (in soil) to groundwater, lateral transport, discharge, and impact to surface water and sediment.
- **Migration:** Waterside construction disturbance, mobilisation/release of contaminants from impacted sediments (if any) to impact surface water and further sediments.

12.3 Potential receptors

Potential receptors identified are detailed below:

- **Human health**
  - On-site intrusive workers
  - Public users (cultural and recreational use, including boating and fishing)
- **Ecological**
  - Swan River (ecosystem health condition)
  - Threatened fauna (avian and aquatic)

12.4 Preliminary CSM

A summary of the preliminary CSM is provided in Table 24 (overleaf). The preliminary CSM also identifies the assessed status of the source-pathway-receptor linkage and identifies data gaps based on the current CSM understanding.

Table 24 Preliminary CSM

APEC	CoPC	Exposure pathways	Receptors	Linkage completion	Data gaps and other comments
APEC 1: Possible fill soils at the Site (landside)	Heavy metals PAH Asbestos (in the form of ACM) ASS	Inhalation (windblown dust) Dermal contact (impacted soils) Incidental ingestion (impacted soils) Ecological uptake Leaching and subsequent migration of CoPCs (landside) to groundwater, surface water, and sediments.	On-site intrusive workers Swan River (ecosystem health) Threatened fauna (avian and aquatic) of the foreshore environment	**Incomplete** Some areas of the Site may have been subject to minor filling over time, such as during historic road construction or to increase the foreshore area in the vicinity of Canning Bridge (i.e., the area identified as parcel 7 in Plate 4). Although the upper soil profile encountered during the limited soil sampling assessment at the Site was identified as possible fill materials, visual and olfactory assessment of the soils did not identify any indicators of potential contamination, the PID measurements were also low <0.1 ppm for all samples) and the analytical results of soil samples did not identify any concentrations of the analysed CoPC above the applied Tier 1 assessment criteria for consideration of potential human health and ecological receptors (although metals and chrysene were identified at detectable concentrations). Waste or foreign materials (including ACM) were not observed at the Site surface or within the soil profile at the investigation locations. However, the potential presence of such materials elsewhere at the Site cannot be precluded. Based on the development history of the Site (obtained through review of historical aerial images and historical CoT), it is not considered likely at this time that substantial areas of the Site have been subject to historical landfilling activities or that substantial quantities of bulk waste materials are present in the subsurface at the Site. Groundwater quality at the Site is also not currently known; however, based on the information obtained in the PSI and the soil quality data from the limited soil assessment, it is not considered likely that groundwater quality has been significantly impacted due to current or known historical Site activities. *The potential for a change to the status of this linkage cannot however entirely be precluded at this time. This may change to* ***potentially complete*** *if previously unidentified uncontrolled fill/waste or significantly impacted groundwater is encountered/disturbed during proposed development (e.g. in excavation works).*	The limited nature of the soil assessment completed for this PSI is acknowledged as well as the potential for soil quality (and fill presence) to vary across the Site area. ACM was not observed, however potential for such presence cannot be precluded at this time. Soil sampling has provided an indicator of soil quality at the Site and soil suitability for off-Site disposal which may be required as part of the development works. Limited information is however available for the proposed development. Based on current information, as a precautionary measure (if landside excavations are required) then: – A procedure for managing excavated materials (destined for either reuse onsite or off-Site disposal) should be developed and implemented for the project. Additional analysis and assessment may be required for actual materials excavated. – A procedure for unexpected finds management should be developed and implemented if earthworks result in identification of materials such as (but not limited to) bulk waste materials or ACM within the subsurface. – In the event that disposal of soils off-Site to an appropriately licenced facility is contemplated, further characterisation of actual soils to be disposed would be required (as indicated by exceedance of CT criteria with respect to lead in soils in preliminary classification). – Groundwater quality at the Site is not currently known. However, based on current information it is not considered likely that this data gap requires resolution at this time for the proposed development. – The above matters should be confirmed/refined when the proposed design has been confirmed, and likely construction requirements are better defined.
APEC 2: Surface water and sediment in Swan River (surface water portion of the Site)	Bacteria (*Escherichia coli*) Heavy metals TRH BTEXN PAH Organotins Inorganics: Ammonium, nitrate, nitrite, organic nitrogen, and ammonia as N. Inorganic and organic phosphorous (total phosphorous) PFAS ASS	Dermal contact (impacted surface water and sediment) Ingestion (impacted fauna by recreational fishers) Incidental ingestion (impacted surface water and sediment) Ecological uptake Leaching and subsequent migration of CoPCs (landside) to groundwater, surface water, and sediments.	Recreational and cultural users of the Swan River (beneficial use) Swan River (ecosystem health condition) Flora and fauna (avian and aquatic) of the Swan River and foreshore environment	**Potentially complete** Surface water and sediment quality within and surrounding the Site is not known with respect to identified potential CoPC at this time. It is likely that aquatic fauna and bird species may utilise the Site and surrounds and that aquatic flora may have become established at the Site. However, it is not considered that the foreshore and aquatic environment at the Site represents significant habitat for flora and fauna. The Site is mapped over a historical Aboriginal Heritage recorded place as well as the Swan River which is a current registered place of Aboriginal Cultural Heritage (refer to Section 4.11.1) as well as holding significant recreational value. The current land use at the Site (recreational) is not expected to change as a result of the proposed development and as such, it is not anticipated that this will significantly impact the current beneficial use of the Swan River. Nevertheless, as there is uncertainty as to the baseline water and sediment quality, the source-pathway-receptor linkage is potentially complete, and it cannot be precluded that surface water and sediment quality are capable of posing a risk to relevant receptors at this time.	Surface water quality at the Site is not known at this time. However, programme of water quality monitoring at the Site is being undertaken to characterise baseline surface water quality at the Site and relevant reference points. The information collected during this surface water sampling will be used to address this data gap*. Results of such monitoring require review when the design has progressed, and likely construction requirements are better defined; in particular with respect to the extent of waterside disturbance (such as from pile installation). Sediment quality is also unknown at this time. However, given the small scale of the proposed development, the significance of this data gap is considered to be limited and not require further action at this time. This preliminary assessment requires confirmation when: – The design has progressed, and likely construction requirements are better defined, in particular with respect to the extent of waterside disturbance (such as from pile installation). – Data to characterise baseline surface water quality is available. Subject to the above, additional management measures may also be required during landside development activities to mitigate the potential for sedimentation and runoff to impact the adjacent surface water. * *Excluding bacteria (Escherichia coli and Naegleria fowleri)*
APEC 3: Possible redundant subsurface infrastructure	Heavy metals Asbestos (in the form of ACM)	Dermal contact (infrastructure and surrounding soils)	Onsite intrusive workers	**Incomplete**	The presence of redundant/former infrastructure in the subsurface at the Site is not known. If present, during excavation works, there is potential for this infrastructure to be encountered and disturbed.

APEC	CoPC	Exposure pathways	Receptors	Linkage completion	Data gaps and other comments
		Inhalation (infrastructure and surrounding soils)		Based on the current Site setting and observations made at the time of the Site inspection, no complete source-pathway-receptor pathways have been identified for APEC 3. The Site is however noted to be in a relatively densely developed area (with an extensive development history) such that a more intensive network of current infrastructure (and possibly redundant former infrastructure is present in the locality). Presence within the subsurface of any impacted or damaged infrastructure (including but not limited to infrastructure composed of ACM) limits potential for exposure unless disturbed, such as in construction activity. *The potential for a change to the status of this linkage cannot entirely be precluded at this time. This may change to* ***potentially complete*** *if previously unidentified impacted or damaged infrastructure (including but not limited to infrastructure composed of ACM) is encountered/disturbed/inadvertently damaged during proposed development (e.g. in excavation works).*	Depending on the nature and condition of the infrastructure encountered, management may be required to mitigate harm to potential receptors at the Site. At this time, it is considered that a procedure for unexpected finds management should be developed and implemented for the proposed development works and should include management measures and procedures to be implemented if earthworks result in identification of redundant subsurface infrastructure. This matter should be confirmed/refined when the proposed design has been confirmed, and likely construction requirements are better defined, in particular in relation to interaction with underground infrastructure.

13. Conclusions and recommendations

13.1 Site understanding and CSM summary

The Site comprises a portion of the Applecross foreshore area bounded by the Canning Highway/Canning Bridge, the Raffles Hotel complex, Canning Beach Road, and the Swan River. The current use of the Site is understood to be for recreational purposes, with a footpath, principal shared path (cycleway) and minor grassed areas/garden beds present within the landside portion of the Site. A small jetty/floating pontoon extends from the eastern foreshore of the Site into the Swan River and small boats are moored in the Swan River to the north and northwest of the Site. The northern portion of the Site (waterside) consists of open water (Swan River).

Based on the available information, it is understood that portions of the Site were historically included in the Raffles Hotel complex landholdings with the balance used as a road. The current Site layout (dominated by pedestrian/cycling infrastructure) has been apparent since at least 2008; however, prior to this the Site layout does not appear to have varied substantially since as early as 1942, with no evidence of major landfilling or variability in land use apparent following review of historical aerial imagery and CoT. There are no known potentially contaminating activities currently occurring on the Site.

In developing a preliminary CSM, three APECs were identified, comprising possible fill materials within the subsurface (APEC 1), surface water and sediments (APEC 2), and possible redundant subsurface infrastructure (APEC 3). A potentially complete source-pathway-receptor linkage for APEC 2 (surface water and sediment) was identified as the quality of these environmental media is not currently known and as such it cannot be precluded that surface water and sediment quality are capable of posing a risk to relevant receptors as this time (comprising recreational and cultural users of the Swan River, the Swan River, and avian and aquatic flora and fauna).

Construction works for development of the proposed ferry terminal have the potential cause contamination through mobilisation of unknown contaminants, disturbance of sediment on the riverbed (from piling activities), and spills during construction works. It has been assumed that soil disturbance will be minimal, however the magnitude of sediment disturbance will depend on final construction design and methodology. With respect to the above, incomplete source-pathway-receptor linkages for APEC 1 and APEC 3 were identified in the preliminary CSM based on the current Site understanding with respect to relevant receptors comprising:

– On-site intrusive workers
– Swan River (ecosystem health)
– Threatened fauna (avian and aquatic) of the foreshore environment

However, it is acknowledged that there is potential for these linkages to become complete in the event that previously unidentified impacts are encountered/disturbed during proposed development. Such impacts may include (but are not limited to): excavation works encountering uncontrolled fill/waste, impacted or damaged infrastructure (including infrastructure composed of ACM) or significantly impacted groundwater.

The preliminary CSM has identified a potentially complete SPR linkage concerning potential surface water and sediment within the waterside portion of the Sites with respect to relevant receptors comprising:

– Recreational and cultural users of the Swan River (beneficial use)
– Swan River (ecosystem health condition)
– Flora and fauna (avian and aquatic) of the Swan River and foreshore environment

Development of management measures and procedures are therefore considered appropriate at this time to mitigate potential risks to receptors (comprising intrusive Site workers, the Swan River, and avian and aquatic flora and fauna) during construction works; subject to confirmation when the design has progressed and likely construction requirements are better defined.

13.2 Conclusions

The Site is unlikely to pose an unacceptable risk under the current land use and based on the available information as presented in this PSI report. However, this is subject to uncertainty with respect to potential risks posed to relevant receptors as follows:

– Soil sampling was limited in scope and there remains a potential for soil quality (and fill presence) to vary across the Site area. ACM was not observed, however potential for such presence cannot be precluded at this time.
– In the event that disposal of soils offsite to an appropriately licensed facility is contemplated then further characterisation of actual soils to be disposed would be required.
– Surface water quality at the Site is currently not known. A programme of water quality monitoring at the Site is being undertaken to characterise baseline surface water quality and therefore address this data gap.
– Sediment quality at the Site is currently not known. However, the significance of this data gap is considered to be limited, and further action is not warranted at this time.
– Groundwater quality at the Site is currently not known; however, the significance of this data gap is considered to be limited, and further action is not warranted at this time.
– The Site is noted to be in a relatively densely developed area (with an extensive development history) such that a more intensive network of current infrastructure (and possibly redundant former infrastructure is present in the locality). The presence of impacted current or redundant/former infrastructure in the subsurface at the Site is not known. If encountered/disturbed during excavation works, management may be required to mitigate harm to potential receptors at the Site.
– Limited information is currently available concerning likely construction requirements, in particular, the extent to which the waterside and landside portions of the Site may be disturbed as a result. It is further acknowledged that construction works may pose a risk through mobilisation of potential unknown contaminants, strike of abandoned underground services, disturbance of sediment on the riverbed, or spills during construction works.

Recommendations are provided in Section 13.3 with respect to these matters.

13.3 Recommendations

Based on the above conclusions, it is recommended that:

– As a precautionary measure (if landside excavations are required), development of:
  - A procedure for managing excavated materials (destined for either reuse onsite or off-Site disposal), with allowance for additional soils characterisation (if required) and measures to mitigate the potential for sedimentation and runoff from excavations to impact the adjacent surface water environment.
  - A procedure for unexpected finds management to be implemented if earthworks result in identification of materials not identified based on assessment completed to date. Such finds may include (but not be limited to) bulk waste materials, asbestos or ACM, and redundant subsurface infrastructure.
– In the event that disposal of soils off-Site to an appropriately licenced facility is contemplated, further characterisation of actual soils to be disposed would be required (as indicated by exceedance of CT criteria with respect to lead in soils in preliminary classification).
– When the proposed design has been confirmed and likely construction requirements are better defined, confirm the preliminary assessment outcome that no action is needed to address the current data gap concerning groundwater quality.
– Ongoing surface water quality monitoring results are assessed to understand baseline surface water quality and potential risks posed to relevant receptors with respect to the proposed development (and/or the need for sediment sampling and assessment).

The above matters should be confirmed/refined when the proposed design has been confirmed, and likely construction requirements are better defined. This should include review of the preliminary CSM, in particular with respect to the extent of waterside disturbance (such as from pile installation) and landside disturbance (such as

from excavations), including the need (if any) for sediment sampling, controls to manage excavated materials and interaction with underground infrastructure.

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Appendices

Appendix A

Figures

Paper Size ISO A4

0 10 20 30 40

Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50

N

GHD

Public Transport Authority of Western Australia
Swan River Ferry Expansion
PSI & Swan River WQ Monitoring

Project No. **12658388**
Revision No. **B**
Date **21/05/2025**

Applecross Site

FIGURE 1

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Paper Size ISO A4

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Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50

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GHD

Public Transport Authority of Western Australia
Swan River Ferry Expansion
PSI & Swan River WQ Monitoring

Project No. **12658388**
Revision No. **A**
Date **23/05/2025**

Applecross – Site Features

FIGURE 2

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Paper Size ISO A4

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Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50

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GHD

Public Transport Authority of Western Australia
Swan River Ferry Expansion
PSI & Swan River WQ Monitoring

Applecross – Site Boundary and Soil Sampling Locations

Project No. **12658388**
Revision No. **A**
Date **21/05/2025**

FIGURE 3

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Appendix B

Desktop searches and mapping

Land Insight

Environmental Information Report

Applecross Site (Swan River Ferry Expansion)
Applecross, WA

23 Apr 2025

Report nº:
LI-4720 DDR

Understanding your report

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

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

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

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

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

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

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

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Report Summary

	Dataset name	Onsite	On Buffer	Buffer Distance
Section 1 - Property Setting				
1.1	Sensitive Receptors	✓	✓	200m
1.2a	Planning Controls *(Zoning)*		✓	500m
1.2b	Planning Overlays *(Environmental Planning Instruments)*	✓	✓	500m
	Planning Overlays *(Other Planning Information)*			500m
1.3	Heritage *(State and Local Heritage)*	✓	✓	200m
	Heritage *(Australian and World Heritage Database Register)*			200m
1.4a	Soil and Land Use Information *(Soil Landscape)*	✓	✓	500m
	Soil and Land Use Information *(Soil Salinity)*	✓	✓	500m
	Soil and Land Use Information *(Radon)*	✓	✓	500m
1.4b	Acid Sulfate Soil *(State and Local Acid Sulfate Soil Registers)*	✓	✓	500m
	Acid Sulfate Soil *(National Acid Sulfate Soil Registers)*	✓	✓	500m
1.5	Geology and Topography *(Geology)*	✓	✓	500m
	Geology and Topography *(Naturally Occurring Asbestos Potential NOA)*			500m
Section 2 – Hydrogeology and Geotechnical				
2.1	GDE & Hydrogeology Constraints *(Aquifer Type)*	✓	✓	2000m
	GDE & Hydrogeology Constraints *(Groundwater Protection Areas)*	✓	✓	2000m
	GDE & Hydrogeology Constraints *(Wetlands)*	✓	✓	2000m
	GDE & Hydrogeology Constraints *(GDE Surface)*		✓	2000m
	GDE & Hydrogeology Constraints *(GDE Subsurface)*		✓	2000m
	GDE & Hydrogeology Constraints *(Groundwater Licences)*		✓	2000m
	GDE & Hydrogeology Constraints *(Groundwater Bores)*		✓	2000m
2.2	Groundwater and Other Bores *(Groundwater Restricted Use Zones)*			2000m
	Groundwater and Other Bores *(Groundwater Salinity)*		✓	2000m
	Groundwater and Other Bores *(Other Known Boreholes Investigations)*			2000m
Section 3 - Environmental Registers, Licences and Incidents				
3.1	Contaminated Land Public Register (Contaminated Sites)		✓	1000m
3.2	Licences, Approvals & Assessments *(Licences)*		✓	1000m
	Licences, Approvals & Assessments *(Audits)*			1000m
	Licences, Approvals & Assessments *(Clean up Notices, Penalty Notices and Orders)*			1000m
3.3a	Sites Regulated by other Jurisdictional Body (*Contaminated Legacy Areas)*			2000m
	Sites Regulated by other Jurisdictional Body (*Defence, Military Sites and UXO Areas)*			2000m
	Sites Regulated by other Jurisdictional Body (*Former Gasworks Sites)*			2000m
	Sites Regulated by other Jurisdictional Body (*PFAS Sites)*			2000m
3.3b	Other Potential Hazard Sources (*Mines and Quarries)*			500m
	Other Potential Hazard Sources (*Landfills)*			500m
	Other Potential Hazard Sources (*National Pollutant Inventory NPI)*			500m
Section 4 - Potentially Contaminated Areas				
4.1	Potentially Contaminating Activities (Liquid Fuel Facilities)		✓	200m
4.2	Historical Business Directories		✓	200m
Section 5 - Natural Hazards				
5.1	Fire Hazard *(Bushfire Prone Areas)*			500m
	Fire Hazard *(Bushfire History)*			500m
5.2	Flood Hazard *(Flood Planning Area)*	✓	✓	500m
	Flood Hazard *(Other Flood Studies)*	✓	✓	500m
	Flood Hazard *(Flood History)*			500m
5.3	Erosion Hazard	✓	✓	500m

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Appendix B - Historical Imagery

Section 1 Property Setting

1.1 Sensitive Receptors and Features of Interest

Map 1.1 (200m Buffer)

Sensitive receptor	Type	Distance (m)	Direction
Canning River	Watercourse Area	0.0	Onsite

Source: Sensitive Receptors

1.2a Planning Controls

Map 1.2a (500m Buffer)

Zoning

Zoning	Type	Details	Distance (m)	Direction
1307	Centre	City of Melville LPS No. 6	0.4	West
788	Local distributor road	City of Melville LPS No. 6	0.4	South
598	District distributor road	City of Melville LPS No. 6	28.0	West
796	Local road	City of Melville LPS No. 6	122.3	West
1	Residential	City of Melville LPS No. 6	149.1	West
796	Local road	City of South Perth LPS No. 7	401.8	East
1307	Centre	City of South Perth LPS No. 7	403.4	East
1097	Public open space	City of South Perth LPS No. 7	409.7	East
788	Local distributor road	City of South Perth LPS No. 7	478.6	North-east
132	Infrastructure Services	City of South Perth LPS No. 7	490.4	East

Source: Zoning, Planning Overlays and Other Planning Information

1.2b Planning Overlays

Environmental Planning Instruments

Map 1.2b (500m Buffer)

Name	Type	Details	Distance (m)	Direction
Metropolitan Region Scheme Boundary	Region Planning Scheme Boundary	MRS	0.0	Onsite
Parks and recreation	Region Scheme Zones and Reserves	Class: Reserve, Region scheme: 80	0.0	Onsite
Melville	Local Planning Scheme Boundary	City of Melville LPS No. 6	0.0	Onsite
Waterways	Region Scheme Zones and Reserves	Class: Reserve, Region scheme: 79	0.0	Onsite
Primary regional roads	Region Scheme Zones and Reserves	Class: Reserve, Region scheme: 75	0.0	Onsite
R-AC0	Local Planning Scheme R-Code Boundary	Shire of Melville LPS No. 6	0.4	West
Urban	Region Scheme Zones and Reserves	Class: Zone, Region scheme: 1	0.4	West
Application Number: 153 - Planning control area	Region Scheme Applications	Planning control area	27.8	South
South Perth	Local Planning Scheme Boundary	City of South Perth LPS No. 7	118.5	East
R30	Local Planning Scheme R-Code Boundary	Shire of Melville LPS No. 6	159.7	West
R12.5	Local Planning Scheme R-Code Boundary	Shire of Melville LPS No. 6	205.8	West
R-AC0	Local Planning Scheme R-Code Boundary	Shire of South Perth LPS No. 7	403.4	East
R15	Local Planning Scheme R-Code Boundary	Shire of Melville LPS No. 6	409.8	West

Other Planning Information

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

Including Mining Subsidence Areas.
Source: Zoning, Planning Overlays and Other Planning Information

1.3 Heritage

Map 1.3 (200m Buffer)

State and Local Heritage Registers

Site ID	Site Name	Type	Details	Distance (m)	Direction
16178	Canning Bridge	Heritage Register	Canning Hwy over the Canning River, between Applecross and Como, Applecross and Como	0.0	Onsite
16178	Canning Bridge	State Heritage Register	Canning Hwy over the Canning River, between Applecross and Como, Applecross and Como	0.0	Onsite
ACH-00003536	SWAN RIVER	Aboriginal Heritage Places	place type: Creation / Dreaming Narrative, culturally sensitive: No	0.0	Onsite

Site ID	Site Name	Type	Details	Distance (m)	Direction
1544	Raffles Hotel	Heritage Register	70 Canning Beach Rd, Applecross	0.4	West
1544	Raffles Hotel	State Heritage Register	70 Canning Beach Rd, Applecross	0.4	West
4659	Canning Bridge eastbound	State Heritage Register	Canning Hwy, Applecross and Como	1.7	South-east
9192	Canning Bridge westbound	State Heritage Register	Canning Hwy, Applecross and Como	17.1	South-east
ACH-00003538	CANNING RIVER.	Aboriginal Heritage Places	place type: Creation / Dreaming Narrative; Ochre; Water Source, culturally sensitive: No	36.4	South-east
1543	Applecross District Hall	Heritage Register	69 Canning Beach Rd, Applecross	63.8	South
1543	Applecross District Hall	State Heritage Register	69 Canning Beach Rd, Applecross	63.8	South
ACH-00003705	FORESHORE CAMPING GROUND.	Aboriginal Heritage Places	place type: Camp; Hunting Place, culturally sensitive: No	67.0	East
25388	Jacaranda & Plane Trees	State Heritage Register	In public road reserves,, Applecross	149.8	West

Source: State and Local Heritage Registers

Australian Heritage Database Register

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

Source: Commonwealth Heritage List, National Heritage List and World Heritage Area

1.4a Soil and Land Use Information

Map 1.4a (500m Buffer)

Soil Landscape

Code	Name	Soil Group	Description	Distance (m)	Direction
211Sp__S14	EnvGeol S14 phase	Pale deep sand	SAND - pale grey to white, medium-grained sub-angular, quartz and feldspar, well sorted, abundant whole and broken bivalves and gastropod shells, of alluvial origin	0.0	Onsite
Cb39	Subdued dune-swale terrain	Podosol	Subdued dune-swale terrain: chief soils are leached sands (Uc2.33) with (Uc2.22) and (Uc2.21) on the low dunes. Associated are small areas of other sand soils (Uc)	0.0	Onsite
211Sp__S7	EnvGeol S7 phase	Yellow deep sand	SAND - pale and olive yellow, medium to coarse-grained, sub-angular to sub-rounded quartz, trace of feldspar, moderately sorted, of residual origin	129.1	South-west

Source: Soil Landscape

Salinity

Salinity Hazard	Type	Details	Distance (m)	Direction
Low	Salinity Hazard	Soil landscape land quality - Salinity Risk	0.0	Onsite
High hazard or risk	Australian Dryland Salinity Assessment (1:2,500,000) 2001	High hazard or risk in 2050	0.0	Onsite

Source: Soil Salinity

Radon

Radon Level (Bq/m³)	Distance (m)	Direction
10	0.0	Onsite

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

1.4b Acid Sulfate Soil

Map 1.4b (500m Buffer)

State and Local Acid Sulfate Soil Registers

Name	Classification	Description	Distance (m)	Direction
Acid Sulfate Soils Risk	Moderate to low risk	Moderate to low risk of ASS occurring within 3m of natural soil surface but high to moderate risk of ASS beyond 3m of natural soil surface	0.0	Onsite
Acid Sulfate Soils Risk	High to moderate risk	High to moderate risk of ASS occurring within 3m of natural soil surface	0.0	Onsite

To ensure that development does not disturb, expose, or drain acid sulfate soils and cause environmental damage, development consent may be required for conducting works within areas and land shown on the Acid Sulfate Soils Map.
Source: National, State and Local Acid Sulfate Soils Registers

National Acid Sulfate Soil Register

Name	Classification	Description	Distance (m)	Direction
Atlas of Australian Acid Sulfate Soils	High Probability of occurrence	Potential acid sulfate soil material and/or Monosulfidic Black Ooze (MBO).	0.0	Onsite
Atlas of Australian Acid Sulfate Soils	High Probability of occurrence	Acid sulfate soil generally below 1m of the surface.	0.0	Onsite
Atlas of Australian Acid Sulfate Soils	Extremely low probability of occurrence	Unclassified	128.4	South-west

Acid Sulfate Soils (ASS) are all those soils in which sulfuric acid may be produced, is being produced, or has been produced in amounts that have a lasting effect on main soil characteristics.
Source: National, State and Local Acid Sulfate Soils Registers

1.5 Geology and Topography

Map 1.5 (500m Buffer)

Geology

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
WA 1:50,000 Geological Map Series (20334)	Water	Null	Null	Null	Null	Water	0.0	Onsite
WA 1:50,000 Geological Map Series (20334)	S14	Null	CAINOZOIC, QUATERNARY, HOLOCENE,	Null	Null	SAND - pale grey to white, medium-grained, sub-angular, quartz and feldspar, well sorted, abundant whole and broken bivalve and gastropod shells, of alluvial origin	0.0	Onsite

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
WA 1:50,000 Geological Map Series (20334)	S7	Null	CAINOZOIC, QUATERNARY, PLEISTOCENE,	Null	Null	SAND - pale yellowish brown, medium to coarse-grained sub-angular quartz, trace of feldspar, moderately sorted, of residual origin	128.4	South-west

Source: Geology

Naturally Occurring Asbestos Potential (NOA)

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

Source: Naturally Occurring Asbestos NOA

Topography

Topography (Onsite)	2 mAHD

Source: National, State and Local Acid Sulfate Soils Registers

Section 2 Hydrogeology and Geotechnical

2.1 GDE & Hydrogeology Constraints

Map 1.5 (500m Buffer)

Aquifer Type

Type	Distance (m)	Direction
Porous, extensive highly productive aquifers	0.0	Onsite

Source: Groundwater Aquifers

Groundwater Protection Areas

Name	Water Plan Area	Distance (m)	Direction
Perth	Perth Groundwater Area	0.0	Onsite

Source: Groundwater Protection Areas and Groundwater Restricted Use Zones

Wetlands

Name	Description	Distance (m)	Direction
Swan-Canning Estuary	TOPO250K: WATERBODY	0.0	Onsite
Swan-Canning Estuary	Recreation, Conservation, Government requirements, Drainage, Historical sites, Housing, Vacant land	0.0	Onsite
Swan River Estuary	TOPO250K: WATERBODY	0.0	Onsite
unknown	Estuary-Peripheral	1319.8	South
unknown	Dampland	1974.8	East

Source: Wetlands

Groundwater Dependent Ecosystems (GDE) - Aquatic (Surface)

Potential	Distance (m)	Direction
Low potential GDE - from national assessment	27.2	North-east
High potential GDE - from national assessment	1804.3	North-west

Aquatic - Ecosystems that rely on the Surface expression of groundwater.
Source: Groundwater Dependent Ecosystems

Groundwater Dependent Ecosystems (GDE) - Terrestrial (Subsurface)

Potential	Distance (m)	Direction
High potential GDE - from national assessment	240.0	East
Low potential GDE - from national assessment	979.6	North-west
Moderate potential GDE - from national assessment	1511.3	South-east

Terrestrial - Ecosystems that rely on the Subsurface expression of groundwater.
Source: Groundwater Dependent Ecosystems

Groundwater Licences (Western Australia)

Map ID	WRI number	Allocation (KL)	Address	All Parties	Distance (m)	Direction
2155	159537	2328098 KL	Crown Reserve 40062 Lot 2902 Jackson Av Winthrop Hill Park; Lot 7 On Strata Plan 14660 Volume/Folio 1763/195 Lot 1 Canning Hwy Attadale Lot 6 On Strata Plan ; LOT 447 ON PLAN 1751 - Volume/Folio 10/303A - Lot 447 GAIRLOCH ST APPLECROSS; Lot 4007 On Plan 218002 Volume/Folio Lr3099/201 Lot 4007 Le Souef Dr Kardinya Frederick Baldwin; Road Reserve - Pin1216450; LOT 3030 ON PLAN 16640 - Volume/Folio LR3140/442 - Lot 3030 LE SOUEF DR KARDINYA; LOT 9 ON DIAGRAM 6262 - Lot 9 CANNING HWY ALFRED COVE; LOT 16 ON PLAN 4436 - Volume/Folio 1031/459 - Lot 16 PHIPPS ST BICTON; LOT 562 ON PLAN 12388 - Volume/Folio 1504/982 - Lot 562 PASSEY PL KARDINYA; Crown Reserve 25725 Lot 6960 Hillary St Willagee Roy Neal; Ardross Riseley Street Median Strip Ardross; Lot 352 On Diagram 65379 Volume/Folio 1652/675 Lot 352 Townsing Rd Kardinya Ralph Trotter; Lot 4121 On Plan 17289 Volume/Folio Lr3105/24 Lot 4121 Jolley Gr Winthrop Somerville; Crown Reserve 27636 Lot 2051 On 8182 Volume/Folio Lr3015/436 Lot 2051 Portree Way Ardross Jim Ai; Crown Reserve 33786 Lot 2450 Stone Ct Kardinya Emma George Park; LOT 144 ON PLAN 4996 - Volume/Folio 1115/461 - Lot 144 BAAL ST PALMYRA; Lot 1854 On Plan 208889 Volume/Folio Lr3056/225 Lot 1854 The Esplanade Mount Pleasant Apex Park; Crown Reserve 38635 Lot 2761 Le Souef Dr Kardinya Leonnard Gould; LOT 2500 ON PLAN 9494 - Volume/Folio LR3057/187 - Lot 2500 MORPHETT CR BATEMAN; Crown	City of Melville	27.8	South

Map ID	WRI number	Allocation (KL)	Address	All Parties	Distance (m)	Direction
			Reserve 37527 Volume/Folio Lr3093/297 Lot 2927 Findlay Rd Leeming Robert Weir Reserve; Crown Reserve 40192 Lot 2939 Eckersley Hts Winthrop Robert Smith Reserve; LOT 13 ON PLAN 4436 - Volume/Folio 1031/459 - Lot 13 PHIPPS ST BICTON; LOT 17 ON PLAN 4436 - Volume/Folio 1031/459 - Lot 17 PHIPPS ST BICTON; Willetton South Street Median Strip (Between Gracechurch St And Vahland St) Leeming; Crown Reserve 35948 Lot 2698 Riseley St Booragoon Hugh Corbett Crown Reserve 35948 Lot 2567 Rise; LOT 459 ON PLAN 1751 - Volume/Folio 10/303A - Lot 459 GAIRLOCH ST APPLECROSS; Crown Reserve 25318 Lot 1672 Leach Hwy Booragoon Crown Reserve 25318 Lot 2306 Leach Hwy Booragoon; Lot 2823 On Plan 14996 Volume/Folio Lr3054/502 Lot 2823 Gledhill Wy Leeming Dudley Hartree; Lot 5830 On Plan 216108 Volume/Folio Lr3089/697 Lot 5830 Hodge St Willagee Webber Reserve; LOT 455 ON PLAN 1751 - Volume/Folio 10/303A - Lot 455 GAIRLOCH ST APPLECROSS; Crown Reserve 35249 Lot 3019 Hogarth Wy Bateman Hogarth Way Reserve; LOT 458 ON PLAN 1751 - Volume/Folio 10/303A - Lot 458 GAIRLOCH ST APPLECROSS; Mount Pleasant Canning Hwy Glenelg St Mount Pleasant; LOT 446 ON PLAN 1751 - Volume/Folio 10/303A - Lot 446 GAIRLOCH ST APPLECROSS; Crown Reserve 26742 Volume/Folio Lr3000/786 Lot 2005 Marmion St Booragoon Len Shearer Reserve; LOT 2820 ON PLAN 15143 - Volume/Folio LR3054/487 - Lot 2820 WILLIAMSON RD KARDINYA; Crown Reserve 36867 Lot 2631 Prider Ct Kardinya Alan Edwards; Lot 3796 On Plan 18333 Volume/Folio Lr3145/802 Lot 3796 Stringfellow Dr Bull Creek Brockman Park; Crown Reserve 33770 Lot 2752 Henry Bull Dr Bull Creek Noel Kroll; Crown Reserve 30721 Lot 2319 Freeth Ct Brentwood Alec Lambert; LOT 200 ON DEPOSITED PLAN 300429 - Volume/Folio 1421/728 - Lot 200 HAMMAD ST PALMYRA; LOT 12 ON PLAN 6129 - Volume/Folio 1285/845 - Lot 12 CANNING HWY ALFRED COVE; LOT 14 ON PLAN 6129 - Volume/Folio 1285/845 - Lot 14 CANNING HWY ALFRED COVE; Crown Reserve 24413 Lot 5697 Knox Cr Melville W.N. Malcolm Reserve; Crown Reserve 17378; Lot 1712 McKimmie Road Palmyra Palmyra Primary School; Lot 12625 On Plan 21506 Volume/Folio Lr3107/759 Lot 12625 Dann Ct Willagee Dann Park; Lot 3688 On Plan 16899 Crown Reserve 41192 Lot 3688 (46) Chamberlain Cir Bateman Chamberlain Park; LOT 150 ON DIAGRAM 12674 -			

Map ID	WRI number	Allocation (KL)	Address	All Parties	Distance (m)	Direction
			Volume/Folio 1103/189 - Lot 150 DUNKLEY AV APPLECROSS; LOT 224 ON PLAN 4996 - Volume/Folio 1042/952 - Lot 224 FORREST ST PALMYRA; LOT 2830 ON PLAN 14784 - Volume/Folio LR3142/499 - Lot 2830 AULBERRY PDE LEEMING; Lot 12884 On Plan 219802 Volume/Fol			
10740	50708	828455 KL	LOT 4008 ON PLAN 402554; Road Reserve - Pin 12109422; Lot 100 On Diagram 64043 Volume/Folio 1635/377 Lot 100 Vista St Kensington David Vincent Park; Canning/ Cloister Foreshore Reserve, Como; Verges along Stiffold Prom and between Benson Ch and Crowley Vsta; Mettam Fawy between Gentilli Wy &; Crown Reserve 23967 Lot 1279 Salter Point Pde Salter Point Sandon Park; Road Reserve - Pin 11804681; Lot 993 On Plan 188180 Volume/Folio Lr3116/472 Lot 993 Mill Point Rd South Perth Windsor Park; LOT 4002 ON PLAN 70746; Road Reserve - Pin 11963745; Crown Reserve 24329 Lot 1928 Bradshaw Cr Manning Bradshaw/Conochie Reserve; Lot 3817 On Plan 218435 Volume/Folio Lr3100/613 Lot 3817 Thelma St Como Bill Grayden Reserve; Lot 3924 On Diagram 66482 Volume/Folio Lr3104/559 Lot 3924 Canning Hwy Como Bickley Reserve; Verges between Godwin & Henley Street, Manning; Crown Reserve 24213 Lot 5597 Douglas Av Kensington Moresby St Reserve; Road Reserve - Pin 11963743; Lot 1302 On Plan 6384 Lot 1302 Henley St Manning Canavan Cst Reserve/ Kindergarten; Lot 3834 On Plan 18896 Volume/Folio Lr3101/124 Lot 3834 Doneraile Ct Waterford Doneraile Ct Reser; Verges along Crossman Pass between Benson Ch & Crowley Vsta, Salter Point; Crown Reserve 38665 Volume/Folio Lr3035/830 Lot 3296 Morrison St Como Crown Reserve 38665 Volume; Verges along Dyer Wy between McNess Gld & Kenneally Cct, Salter Point; Crown Reserve 21483 Lot 725 Melville Pde South Perth Melville Parade South & Como Beach Reserve; Lot 339 On Plan 6385 Volume/Folio 1166/801 Lot 339 Pether Rd Manning Pether Street Park; Crown Reserve 24331 Lot 1297 Bradshaw Cr Manning Manning Hall Precinct; LOT 4004 ON PLAN 70746; Road Reserve - Pin 12028271; Lot 67 On Plan 6038 Volume/Folio 2172/900 Lot 67 Ranelagh Cr South Perth Meadowvale Avenue Reserv; Lot 687 On Plan 4528 Volume/Folio 887/151 Lot 687 Throssell St Como Ryrie Avenue Reserve Lot 700; Lot 301 On Plan 44440 Volume/Folio Lr3155/582 Lot 301 Salter Point Pde Salter Point Sandon Park ; Lot 2 On Plan 14563 Volume/Folio 1748/107 Lot 2 South Tce South Perth	City of South Perth	121.1	East

Map ID	WRI number	Allocation (KL)	Address	All Parties	Distance (m)	Direction
			Ernest Johnston Oval & Civi; Road Reserve - Pin 12195764; Crown Reserve 37712 Volume/Folio Lr3102/884 Lot 3318 Elderfield Rd Waterford Waterford Foreshore ; LOT 4003 ON PLAN 70746; Crown Reserve 26622 Lot 1896 Roebuck Dr Salter Point Hope Ave Reserve; Verges along Dick Perry Av, Burvill Ct and roundabouts on Kent St and Burvill Ct; Lot 12507 On Plan 219118 Volume/Folio Lr3040/53 Lot 12507 Como Olives Reserve; Lot 4525 On Plan 23856 Volume/Folio Lr3120/759 Lot 4525 Kenneally Cct Salter Point Lot 4717 On Pl; Crown Reserve 24330 Lot 1768 Duckett Dr Manning Crown Reserve 24330 Lots 1299 & 1768 Duckett Dr M; Lot 3816 On Plan 218435 Volume/Folio Lr3100/612 Lot 3816 Thelma St Como Infrastructure Depot; Lot 3497 On Plan 187254 Lot 3497 Hayman Rd Como Transfer Station Grounds; Verges along Mettam Fawy between Benson Ch & Gentilli Wy, Salter Point; Lot 3815 On Plan 218435 Volume/Folio Lr3100/611 Lot 3815 Thelma St Como Collier Reserve; Crown Reserve 33639 Lot 2723 Manning Rd Karawara Manning Library; Road Reserve - Pin 11804047; Lot 100 On Diagram 71837 Volume/Folio 1782/114 Lot 100 Davilak St Como Neil Mcdougall Park; Lots 5159, 6169, 7479, 610629, 710729 on Plan 576 Lots 5159 Carey St, Lots 6169 Broad St, Lots 7479; Crown Reserve 39783 Lot 3552 Kilkenny Cir Waterford Kilkenny Cse Reserve; Lot 300 On Plan 5230 Volume/Folio 1053/491 Lot 300 Swanview Tce South Perth Swanview Tce Reserve; Crown Reserve 37648 Volume/Folio Lr3000/131 Lot 3305 Kilkenny Cir Waterford Bodkin Park; Lot 1333 On Plan 6280 Lot 1333 Craigie Cr Manning Isabella/ Craigie Reserve & Manning PreSchool; Road Reserve - Pin 12028272; Verges along Gwenyfred Road, Kensington; Crown Reserve 30009 Lot 2256 Garvey St Waterford Garvey St Reserve; Lot 264 On Plan 4908 Volume/Folio 1033/904 Lot 264 Mackie St Kensington Lot 11 On Diagram 8248 V; Verges along Stitfold Prom			
1503	155444	375750 KL	Lot 201 On Plan 53096 Volume/Folio 2679/995 Lot 201 Curtis Rd Melville; Crown Reserve 28910; Lot 2702 Links Road Ardross Applecross Senior High School; Crown Reserve 28813 Lot 2098 Links Rd Ardross Ardross Primary School; Crown Reserve 38073; Lot 3366 Hardy Street Bull Creek Bull Creek Primary School; Crown Reserve 37916 Lot 568 Olsen Ct Leeming Banksia Park Primary School Crown Reserve 37916 Lot ; Lot 300 On Plan	Department of Education	909.0	West

Map ID	WRI number	Allocation (KL)	Address	All Parties	Distance (m)	Direction
			54401 Volume/Folio Lr3139/962 Lot 300 Kintail Rd Applecross Applecross Primary Sc; Crown Reserve 38570 Volume/Folio Lr3102/897 Lot 2754 Aulberry Pde Leeming Leeming High School; Lot 970 On Plan 157595 Volume/Folio Lr3016/534 Lot 970 Mckimmie Rd Palmyra Lot 1712 On Diagram 169; Lot 559 On Diagram 62153 Volume/Folio Lr3150/965 Lot 559 Hicks St Leeming Banksia Park Primary Sc; Crown Reserve 17378; Lot 1712 McKimmie Road Palmyra Palmyra Primary School; Lot 8881 On Diagram 33789 Volume/Folio Lr3046/972 Lot 8881 Clements Rd Booragoon Booragoon Primar; Crown Reserve 32333 Lot 2281 Ochiltree Wy Kardinya Kardinya Primary School; Crown Reserve 24844; Lot 1604 Moolyeen Road Brentwood Brentwood Primary School; Crown Reserve 25351 Lot 6820 Drury St Willagee Caralee Community School; Crown Reserve 38208 Lot 3383 Oberthur Cr Bull Creek Oberthur Primary School; Crown Reserve 24064 Lot 5553 Potts St Melville Melville Senior High School; Crown Reserve 29526 Lot 2189 Bartling Cr Bateman Bateman Primary School; Lot 2846 On Plan 15168 Lot 2846 Westall Tce Leeming West Leeming High School; Lot 4226 On Plan 192656 Volume/Folio Lr3106/620 Lot 4226 Winterfold Rd Kardinya North Lake Senior; Crown Reserve 38166 Lot 3378 Queens Rd Mount Pleasant Mt Pleasant Primary School; Crown Reserve 22830; Lot 10420 Foss Street Bicton Bicton Primary School; Crown Reserve 23501; Lots 5371 and 5686 Nichmann Road Attadale Attadale Primary School; Crown Reserve 36972 Lot 537 Meharry Rd Leeming Leeming Primary School; Lot 195 On Plan 15649 Volume/Folio 1743/808 Lot 195 Jackson Av Winthrop Winthrop Primary School			
1500	155440	152250 KL	Crown Reserve 38202; Lot 10401 Thelma Street Como Como Primary School; Crown Reserve 3616 Lot 350 Forrest St South Perth South Perth Primary School; Lot 1769 On Plan 214206 Volume/Folio Lr3093/814 Lot 1769 Ley St Como Manning Primary School; Crown Reserve 38241; Lot 10419 Hobbs Avenue Como Collier Primary School; Crown Reserve 28057 Lot 2006 Goss Av Manning Curtin Primary School; Crown Reserve 29198; Lot 2139 Bruce Street Como Como Secondary College; Lot 10392 On Plan 6068 Lot 10392 Banksia Tce Kensington Lot 10392 On Plan 6068 Lot 10392 Banksia T	Department of Education	1130.3	East
9079	208665	50000 KL	Crown Reserve 25744; LOT 3102 ON PLAN 183521 - Volume/Folio LR3058/493 - Lot 3102 JARMAN AV MANNING	Water Corporation	1131.1	East

Map ID	WRI number	Allocation (KL)	Address	All Parties	Distance (m)	Direction
2180	159643	34875 KL	Crown Reserve 26742 Volume/Folio Lr3000/786 Lot 2005 Marmion St Booragoon Len Shearer Reserve; Lot 533 On Plan 5129 Volume/Folio 1109/961 Lot 533 Mitchell St Ardross Lot 533 On Plan 5129 Volume/Folio 1109/961 Lot 533 Mitchell St Ardross Mitchell Street Reserve; Lot 734 On Plan 6093 Volume/Folio 1130/492 Lot 734 Coogee Rd Mount Pleasant Jim Mills; Lot 553 On Plan 5129 Volume/Folio 1109/960 Lot 553 Glenelg St Mount Pleasant Harry Briddle	City of Melville	1164.8	South-west
3931	172272	135000 KL	Lot 18 On Plan 3383 Volume/Folio 1550/176 Lot 18 Mount Henry Rd Salter Point; LOT 4 ON PLAN 3383 - Volume/Folio 2868/789 - Lot 4 MOUNT HENRY RD SALTER POINT	Aquinas College	1504.4	South-east

Source: Groundwater Protection Areas and Groundwater Restricted Use Zones

Groundwater Bores

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
57	61611798	Monitoring	12/01/1984	9.6	Null	1.4	730 uS/cm	Null	196.2	West
56	61611797	Monitoring	12/01/1984	6.6	Null	1.4	670 uS/cm	Null	196.2	West
59	61611799	Monitoring	12/01/1984	19.0	Null	1.4	7230 uS/cm	Null	196.2	West
52	61602085	Exploration	02/12/1983	22.5	Null	1.3	Null	Null	197.2	West
282	61615629	Unknown	Null	Null	Null	Null	Null	Null	300.0	West
60	61601784	Stock and Domestic	10/12/1977	9.4	Null	1.5	Null	Null	307.1	South-west
126	61601683	Unknown	23/09/1978	16.7	Null	10.0	Null	Null	357.8	South-west
216	61601303	Unknown	22/08/1977	8.5	8.5	7.9	Null	Null	370.1	West
58	61601299	Unknown	05/10/1977	9.4	Null	1.4	Null	Null	379.3	West
127	61601489	Unknown	04/01/1978	17.1	Null	10.5	Null	Null	414.5	West
148	61615614	Stock and Domestic	30/06/1978	20.6	Null	12.8	Null	Null	420.7	West
12	61601894	Stock and Domestic	15/05/1979	Null	Null	Null	Null	Null	426.7	South-west
180	61601484	Unknown	01/01/1900	25.9	Null	16.8	Null	Null	521.8	West
212	61601368	Unknown	18/08/1977	14.0	7.9	7.6	Null	Null	527.4	East
10	61601777	Unknown	27/09/1978	15.8	Null	Null	Null	Null	539.8	North-east
89	61601490	Unknown	31/10/1977	10.4	9.8	Null	Null	Null	569.7	West
191	61601684	Unknown	25/07/1978	30.2	Null	18.3	Null	Null	592.8	West
170	61601483	Unknown	12/01/1978	24.4	Null	14.9	Null	Null	598.2	West
86	61671800	Unknown	04/05/2001	45.0	39.0	Null	Null	Null	636.0	East

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
257	61601122	Unknown	Null	453.2	Null	Null	Null	Null	644.2	North-west
24	61601177	Unknown	30/06/1967	17.4	Null	Null	Null	Null	658.1	North-east
11	61601776	Unknown	19/12/1978	7.6	Null	Null	Null	Null	666.5	North-east
65	61601366	Unknown	13/10/1977	9.1	Null	2.0	Null	Null	684.7	North-east
166	61601814	Stock and Domestic	18/10/1978	24.1	Null	14.3	Null	Null	709.3	East
242	61601629	Unknown	30/06/1977	23.2	23.2	14.6	Null	Null	712.0	East
138	61601447	Unknown	09/01/1978	19.8	Null	11.9	Null	Null	713.0	South-west
135	61615644	Irrigation	17/05/1985	22.0	Null	11.2	Null	Null	723.4	West
169	61601482	Unknown	28/09/1977	21.3	Null	14.8	Null	Null	745.3	South-west
133	61601202	Unknown	30/06/1969	27.4	Null	11.0	Null	Null	794.8	North-west
176	61601485	Unknown	09/11/1977	21.3	Null	15.9	Null	Null	801.0	West
49	61601365	Unknown	25/02/1978	10.7	Null	1.2	Null	Null	812.0	North-east
274	61611355	Unknown	Null	Null	Null	Null	Null	Null	813.8	West
175	61601486	Unknown	15/03/1978	22.9	Null	15.9	Null	Null	827.2	West
273	61615564	Irrigation	Null	Null	Null	Null	Null	Null	829.7	North-west
272	61615604	Unknown	Null	Null	Null	Null	Null	Null	836.6	North-west
67	61601675	Unknown	12/11/1978	7.6	Null	2.1	Null	Null	855.0	West
70	61601146	Unknown	30/06/1969	15.2	Null	3.1	Null	Null	866.6	West
167	61602069	Exploration	18/04/1984	38.0	Null	14.4	Null	Null	868.9	South-west
276	61615565	Unknown	Null	Null	Null	Null	Null	Null	871.9	North-west
33	61611717	Exploration	28/05/1984	29.0	Null	Null	Null	Null	876.7	South-west
31	61611716	Exploration	28/05/1984	23.0	Null	Null	Null	Null	876.7	South-west
15	61611715	Exploration	28/05/1984	18.0	Null	Null	Null	Null	876.7	South-west
94	61601448	Unknown	30/06/1977	11.9	11.3	1.5	Null	Null	877.2	South
171	61601247	Unknown	30/06/1977	22.6	Null	14.9	Null	Null	911.5	West
163	61602066	Exploration	09/04/1984	37.0	Null	14.0	Null	Null	948.0	West
155	61601446	Unknown	21/12/1977	20.4	Null	13.3	Null	Null	949.9	South-west
283	61611154	Unknown	Null	Null	Null	Null	Null	Null	951.1	West
14	61611714	Exploration	21/05/1984	30.0	Null	Null	Null	Null	954.1	West
13	61611711	Exploration	21/05/1984	21.0	Null	Null	Null	Null	954.1	West
30	61611713	Exploration	21/05/1984	29.0	Null	Null	Null	Null	954.1	West

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
38	61611712	Exploration	21/05/1984	25.0	Null	Null	Null	Null	954.1	West
178	61601445	Unknown	30/11/1977	22.2	Null	16.1	Null	Null	955.5	South-west
247	61670909	Unknown	17/12/2012	37.0	30.7	17.2	Null	Null	964.6	South
68	61615632	Unknown	10/04/1979	16.4	Null	2.7	Null	Null	972.6	North-east
164	61601240	Unknown	30/06/1976	21.3	Null	14.3	Null	Null	996.2	West
268	61611361	Unknown	Null	Null	Null	Null	Null	Null	1019.1	West
3	61601207	Irrigation	01/01/1900	Null	Null	Null	553 uS/cm	Null	1022.4	West
182	61615630	Stock and Domestic	01/01/1900	29.3	Null	16.8	Null	Null	1026.3	South-west
225	61670858	Unknown	21/05/2008	27.0	25.0	9.6	Null	Null	1033.2	South-east
47	61601895	Stock and Domestic	15/11/1977	Null	Null	1.1	Null	Null	1040.3	North-east
248	61601444	Unknown	18/11/1977	29.3	27.4	18.3	Null	Null	1040.8	South-west
226	61610160	Monitoring	19/07/1982	14.5	14.5	10.2	Null	Null	1042.8	West
154	61601480	Unknown	09/03/1978	20.1	Null	13.3	Null	Null	1050.2	West
102	61610159	Monitoring	19/07/1982	8.5	8.4	2.5	Null	Null	1053.6	West
130	61601478	Unknown	17/08/1977	15.8	Null	10.7	Null	Null	1054.5	West
252	61601442	Unknown	15/05/1978	38.1	31.7	21.0	Null	Null	1062.1	South-west
72	61601878	Stock and Domestic	30/06/1971	15.8	Null	3.4	Null	Null	1063.7	West
251	61601443	Unknown	18/02/1978	32.2	29.8	21.0	Null	Null	1077.3	South
241	61609682	Irrigation	25/08/1999	28.5	28.4	14.5	Null	Null	1081.7	South-west
232	61602078	Exploration	15/06/1984	17.0	15.9	12.3	Null	Null	1086.0	South-west
231	61602077	Exploration	12/06/1984	35.0	26.2	12.3	Null	Null	1086.0	South-west
233	61602068	Exploration	31/05/1984	17.0	17.0	12.3	Null	Null	1094.0	South-west
238	61602067	Exploration	10/04/1984	37.0	31.0	13.0	Null	Null	1094.0	South-west
69	61601877	Stock and Domestic	22/03/1980	16.0	Null	3.0	Null	Null	1096.2	West
204	61601271	Unknown	30/06/1977	29.6	Null	23.7	Null	Null	1100.4	South
165	61601488	Unknown	30/06/1977	21.3	Null	14.3	Null	Null	1102.7	West
157	61601291	Unknown	01/01/1900	25.6	Null	13.7	Null	Null	1120.3	West
66	61601833	Stock and Domestic	31/08/1979	9.8	Null	2.0	Null	Null	1121.7	South
147	61601481	Unknown	30/06/1977	24.1	Null	12.8	Null	Null	1125.7	West
236	61602076	Exploration	30/05/1984	17.0	16.5	12.7	Null	Null	1127.0	South-west
237	61602075	Exploration	29/05/1984	31.0	30.2	12.8	Null	Null	1127.0	South-west

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
186	61601789	Stock and Domestic	17/03/1978	28.3	Null	17.4	Null	Null	1134.7	South-west
7	61601238	Unknown	30/06/1976	30.5	Null	Null	Null	Null	1145.1	South-west
141	61601214	Unknown	30/06/1973	31.4	Null	11.9	Null	Null	1156.9	South-east
144	61601491	Unknown	02/08/1977	19.2	Null	12.2	Null	Null	1162.3	West
279	61611350	Unknown	Null	Null	Null	Null	Null	Null	1163.5	South-west
244	61601487	Unknown	02/02/1978	25.0	23.5	15.7	Null	Null	1166.3	West
106	61602109	Irrigation	01/07/1997	33.0	33.0	3.4	Null	Null	1172.6	East
40	61601173	Stock and Domestic	01/01/1900	24.4	Null	Null	Null	Null	1173.7	South-east
93	61606000	Unknown	07/06/1978	7.6	7.6	1.4	Null	Null	1193.2	North
101	61610158	Monitoring	19/07/1982	8.7	8.5	2.4	Null	Null	1200.9	West
143	61601441	Unknown	10/04/1978	21.5	Null	12.0	Null	Null	1202.7	South
29	61601876	Stock and Domestic	01/01/1900	13.4	Null	Null	Null	Null	1205.5	West
258	61611615	Unknown	Null	Null	Null	Null	Null	Null	1217.4	South-east
256	61611217	Exploration	Null	Null	Null	Null	7980 uS/cm	Null	1223.4	West
140	61601812	Stock and Domestic	01/01/1900	21.3	Null	11.9	Null	Null	1227.9	South-west
96	61605767	Unknown	11/05/1978	8.8	8.8	1.8	Null	Null	1232.0	North
134	61601300	Unknown	01/08/1977	12.2	Null	11.0	Null	Null	1240.0	West
27	61615607	Stock and Domestic	15/08/1978	14.6	Null	Null	Null	Null	1260.0	South-east
5	61601172	Irrigation	30/06/1970	30.5	Null	Null	365 uS/cm	Null	1262.2	South-east
97	61601367	Unknown	01/01/1900	10.4	9.1	1.8	Null	Null	1267.6	East
8	61615572	Unknown	30/06/1978	16.3	Null	Null	Null	Null	1276.1	North-east
123	61601227	Unknown	30/06/1975	27.1	Null	9.1	Null	Null	1285.2	South-east
230	61605765	Unknown	13/01/1978	11.0	5.5	11.9	Null	Null	1287.6	North-east
235	61610150	Monitoring	19/07/1982	14.2	14.0	12.5	Null	Null	1295.6	West
160	61601791	Stock and Domestic	30/06/1979	21.6	Null	13.7	Null	Null	1313.9	South-west
262	61615566	Irrigation	Null	Null	Null	Null	Null	Null	1343.9	West
1	61601178	Irrigation	01/01/1900	Null	Null	Null	409 uS/cm	Null	1345.0	East
42	61606781	Exploration	05/06/1984	2.0	Null	0.5	Null	Null	1357.6	North
41	61606780	Monitoring	05/06/1984	45.0	Null	0.5	Null	Null	1357.6	North
48	61611811	Monitoring	13/06/1984	5.3	Null	1.2	Null	Null	1362.2	North
51	61611810	Monitoring	13/06/1984	1.5	Null	1.3	Null	Null	1362.2	North

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
46	61611813	Monitoring	13/06/1984	16.8	Null	0.6	Null	Null	1362.2	North
45	61611812	Monitoring	13/06/1984	10.3	Null	0.6	Null	Null	1362.2	North
44	61611814	Monitoring	13/06/1984	24.3	Null	0.6	Null	Null	1362.2	North
43	61611815	Monitoring	13/06/1984	42.3	Null	0.5	Null	Null	1362.2	North
149	61601825	Stock and Domestic	30/06/1978	21.8	Null	12.8	Null	Null	1364.2	South-west
136	61601226	Unknown	30/06/1975	23.5	Null	11.6	Null	Null	1367.3	South-east
151	61601826	Stock and Domestic	30/06/1978	21.0	Null	12.9	Null	Null	1374.7	South-west
150	61605766	Unknown	15/12/1977	19.5	Null	12.9	Null	Null	1380.8	North-east
162	61601280	Stock and Domestic	28/01/1978	24.8	Null	13.8	Null	Null	1388.0	North-east
158	61601473	Unknown	21/12/1977	17.1	Null	13.7	Null	Null	1393.1	South
208	61601360	Unknown	05/10/1977	13.4	13.4	7.0	Null	Null	1401.3	East
105	61610157	Monitoring	19/07/1982	10.4	10.0	3.1	Null	Null	1401.3	West
205	61601472	Unknown	23/03/1978	32.0	Null	25.0	Null	Null	1401.6	South
108	61601361	Unknown	11/08/1977	13.4	10.7	5.5	Null	Null	1402.1	South-east
228	61601805	Unknown	30/06/1978	22.0	21.0	11.8	Null	Null	1407.0	South-east
103	61610155	Monitoring	19/07/1982	14.1	14.0	2.5	Null	Null	1413.4	West
95	61610156	Monitoring	19/07/1982	9.9	9.9	1.8	Null	Null	1416.2	West
2	61605370	Irrigation	30/06/1966	25.6	Null	Null	310 uS/cm	Null	1421.8	North
152	61601545	Unknown	13/03/1978	19.5	Null	13.1	Null	Null	1429.4	South-east
267	61611352	Unknown	Null	Null	Null	Null	Null	Null	1438.0	South
132	61601674	Stock and Domestic	01/01/1900	16.8	Null	11.0	Null	Null	1454.0	West
243	61601362	Unknown	15/11/1977	27.4	24.4	15.2	Null	Null	1457.8	North-east
125	61601682	Unknown	15/08/1978	21.3	Null	9.8	Null	Null	1459.9	West
85	61671827	Unknown	23/01/2003	14.5	13.5	Null	Null	Null	1460.1	South
9	61615580	Unknown	01/08/1977	14.6	Null	Null	Null	Null	1460.2	South-east
224	61601912	Unknown	15/12/1980	Null	18.0	8.5	Null	Null	1461.6	East
6	61671828	Unknown	16/01/2003	15.0	Null	Null	Null	Null	1464.7	South
120	61601824	Unknown	15/03/1979	18.3	Null	8.5	Null	Null	1484.5	West
173	61601909	Unknown	21/12/1978	24.4	Null	15.2	Null	Null	1489.2	South-east
189	61601440	Unknown	01/01/1900	25.4	Null	17.8	Null	Null	1490.4	South
28	61615608	Unknown	01/01/1900	15.8	Null	Null	Null	Null	1500.7	South-east

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
87	61601794	Unknown	30/06/1978	9.4	9.1	Null	Null	Null	1507.1	South-east
73	61601546	Unknown	23/11/1977	10.7	Null	3.6	Null	Null	1512.0	South-east
109	61601544	Unknown	30/06/1977	12.8	12.8	5.8	Null	Null	1534.0	South-east
181	61606345	Stock and Domestic	01/01/1900	27.1	Null	16.8	Null	Null	1542.3	North-east
121	61601852	Unknown	15/05/1980	21.3	Null	8.5	Null	Null	1546.3	South-west
81	61611268	Exploration	17/05/2001	9.0	9.0	Null	2550 uS/cm	Null	1559.5	West
90	61611269	Exploration	17/05/2001	11.0	11.0	Null	Null	Null	1559.5	West
82	61611267	Exploration	17/05/2001	5.0	5.0	Null	890 uS/cm	Null	1559.5	West
280	61611201	Exploration	Null	Null	Null	Null	Null	Null	1560.6	West
26	61611734	Unknown	25/06/1984	13.0	Null	Null	Null	Null	1563.3	West
21	61611731	Unknown	25/06/1984	7.0	Null	Null	Null	Null	1563.3	West
18	61611736	Unknown	25/06/1984	17.0	Null	Null	Null	Null	1563.3	West
17	61611729	Unknown	25/06/1984	3.0	Null	Null	Null	Null	1563.3	West
25	61611733	Exploration	25/06/1984	11.0	Null	Null	Null	Null	1563.3	West
34	61611735	Unknown	25/06/1984	15.0	Null	Null	Null	Null	1563.3	West
19	61611732	Exploration	25/06/1984	9.0	Null	Null	Null	Null	1563.3	West
16	61611730	Exploration	25/06/1984	5.0	Null	Null	Null	Null	1563.3	West
91	61610154	Monitoring	19/07/1982	11.0	11.0	0.4	Null	Null	1564.2	West
99	61610152	Monitoring	19/07/1982	5.5	5.5	1.9	Null	Null	1564.9	West
107	61610153	Monitoring	19/07/1982	15.9	15.4	3.9	Null	Null	1566.2	West
98	61610151	Monitoring	19/07/1982	11.5	10.5	1.9	Null	Null	1567.0	West
234	61610149	Monitoring	19/07/1982	17.3	17.0	12.5	Null	Null	1569.4	West
80	61601260	Irrigation	15/08/1977	18.3	Null	5.7	Null	Null	1572.6	East
122	61601268	Unknown	30/06/1977	19.2	Null	8.8	Null	Null	1577.9	West
215	61601792	Unknown	22/06/1978	16.4	16.5	7.9	Null	Null	1585.9	South-east
116	61601477	Unknown	29/07/1977	15.2	Null	7.6	Null	Null	1587.0	West
118	61601363	Unknown	12/12/1977	14.6	Null	8.0	Null	Null	1595.2	East
265	61611604	Unknown	Null	Null	Null	Null	Null	Null	1595.9	West
83	61672086	Unknown	17/01/2007	30.0	30.0	Null	Null	Null	1596.0	North-east
62	61611718	Monitoring	18/06/1984	3.5	Null	1.6	800 uS/cm	Null	1597.8	South
53	61611721	Monitoring	18/06/1984	15.0	Null	1.3	650 uS/cm	Null	1597.8	South

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
55	61611720	Monitoring	18/04/1984	12.5	Null	1.3	570 uS/cm	Null	1597.8	South
61	61611723	Monitoring	18/06/1984	19.0	Null	1.6	1320 uS/cm	Null	1597.8	South
64	61611719	Monitoring	18/06/1984	7.0	Null	1.8	690 uS/cm	Null	1597.8	South
54	61611722	Monitoring	18/06/1984	17.5	Null	1.3	690 uS/cm	Null	1597.8	South
266	61615631	Unknown	Null	Null	Null	Null	Null	Null	1598.6	South
161	61601128	Stock and Domestic	30/06/1969	35.0	Null	13.7	Null	Null	1599.7	South
22	61605371	Irrigation	30/06/1959	24.1	Null	Null	Null	Null	1603.2	North-east
221	61601359	Unknown	24/08/1977	10.7	10.7	8.2	Null	Null	1630.9	East
114	61601681	Stock and Domestic	30/06/1978	19.8	Null	6.7	Null	Null	1633.0	West
76	61615640	Unknown	30/06/1979	10.4	Null	4.6	Null	Null	1634.5	South-east
263	61611907	Exploration	Null	Null	Null	Null	Null	Null	1634.8	South-west
260	61611904	Exploration	Null	Null	Null	Null	Null	Null	1634.8	South-west
278	61611905	Exploration	Null	Null	Null	Null	Null	Null	1634.8	South-west
281	61611906	Exploration	Null	Null	Null	Null	Null	Null	1634.8	South-west
202	61601281	Stock and Domestic	15/10/1977	32.9	Null	21.9	Null	Null	1645.8	South
210	61601998	Exploration	14/11/1989	10.5	10.5	7.5	160 uS/cm	Null	1646.6	South-west
211	61601999	Exploration	14/11/1989	15.2	15.2	7.5	120 uS/cm	Null	1646.6	South-west
209	61602000	Exploration	14/11/1989	28.0	28.0	7.4	Null	Null	1646.6	South-west
193	61606148	Stock and Domestic	15/11/1978	27.4	Null	18.3	Null	Null	1649.0	North-east
115	61601498	Unknown	30/06/1977	106.7	Null	7.0	Null	Null	1650.9	South-west
112	61615597	Stock and Domestic	01/01/1900	7.3	Null	6.4	Null	Null	1654.8	South-west
255	61611216	Exploration	Null	Null	Null	Null	2350 uS/cm	Null	1660.0	West
20	61611728	Exploration	26/07/1984	18.0	Null	Null	Null	Null	1664.3	South
32	61611725	Exploration	26/07/1984	8.0	Null	Null	Null	Null	1664.3	South
36	61611724	Exploration	26/07/1984	4.0	Null	Null	Null	Null	1664.3	South
35	61611727	Exploration	26/07/1984	13.0	Null	Null	Null	Null	1664.3	South
23	61611726	Exploration	26/07/1984	11.0	Null	Null	Null	Null	1664.3	South
113	61601286	Unknown	30/06/1978	13.4	Null	6.7	Null	Null	1667.4	South
63	61601935	Unknown	15/05/1981	11.5	Null	1.7	Null	Null	1669.8	West
153	61601547	Unknown	31/01/1978	19.8	Null	13.1	Null	Null	1671.2	South-east
172	61601364	Unknown	27/02/1978	21.3	Null	14.9	Null	Null	1672.4	North-east

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
156	61601691	Unknown	27/06/1978	20.1	Null	13.6	Null	Null	1677.1	South-west
207	61609939	Irrigation	03/05/2000	30.0	22.5	7.0	Null	Null	1690.5	South-east
117	61601685	Unknown	07/09/1978	21.9	Null	7.9	Null	Null	1693.8	West
253	61601696	Unknown	14/11/1978	29.5	29.5	21.2	Null	Null	1694.5	South
37	61615553	Irrigation	01/01/1900	21.3	Null	Null	Null	Null	1705.3	South-west
264	61611362	Unknown	Null	Null	Null	Null	Null	Null	1712.4	South-west
77	61601790	Unknown	01/01/1900	12.2	Null	5.2	Null	Null	1716.5	East
227	61610116	Monitoring	19/07/1982	12.3	12.3	10.8	Null	Null	1720.4	West
177	61601533	Unknown	10/12/1977	22.2	Null	16.1	Null	Null	1725.5	South-west
203	61601435	Unknown	09/08/1977	28.6	Null	22.3	Null	Null	1725.7	South
39	61615598	Stock and Domestic	01/01/1900	12.2	Null	Null	Null	Null	1726.2	West
206	61602070	Exploration	18/04/1994	32.0	28.0	7.0	Null	Null	1730.8	West
100	61610117	Monitoring	19/07/1982	10.3	10.0	2.1	Null	Null	1731.1	West
50	61610167	Monitoring	03/11/1983	3.8	Null	1.2	Null	Null	1735.0	South
183	61601775	Unknown	02/09/1978	23.7	Null	17.0	Null	Null	1739.8	North-east
179	61606121	Unknown	15/09/1978	26.0	Null	16.5	Null	Null	1749.6	North-east
197	61601470	Unknown	11/11/1977	26.8	Null	18.9	Null	Null	1751.1	South
287	61610148	Monitoring	Null	Null	Null	6.6	Null	Null	1754.6	South-west
84	61671920	Unknown	19/11/2001	24.0	23.8	Null	Null	Null	1755.8	West
245	61615118	Monitoring	14/12/1991	305.0	195.5	16.8	Null	Null	1758.6	South-west
194	61601275	Stock and Domestic	15/11/1977	29.9	Null	18.3	Null	Null	1759.6	South-west
79	61601176	Irrigation	01/01/1900	14.6	Null	5.5	Null	Null	1762.8	South-east
185	61601431	Unknown	26/01/1978	24.4	Null	17.2	Null	Null	1764.7	South-west
139	61601479	Unknown	16/08/1977	21.3	Null	11.9	Null	Null	1773.3	West
119	61615626	Stock and Domestic	01/01/1900	19.8	Null	8.2	Null	Null	1775.2	South-west
192	61601469	Unknown	05/12/1978	25.6	Null	18.3	Null	Null	1776.9	South
254	61601241	Unknown	30/06/1976	30.2	27.7	22.9	Null	Null	1777.1	South-west
201	61601497	Unknown	09/03/1978	25.6	Null	19.8	Null	Null	1781.3	South-west
198	61601471	Unknown	10/11/1977	26.8	Null	18.9	Null	Null	1791.9	South
111	61601161	Irrigation	30/06/1977	24.4	Null	6.4	420 uS/cm	Null	1803.4	South-west
199	61601246	Unknown	30/06/1976	30.5	Null	19.5	Null	Null	1810.9	South

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
213	61602082	Exploration	10/01/1985	31.0	29.5	7.8	Null	Null	1812.3	South-west
88	61602083	Exploration	14/01/1985	22.0	21.0	Null	Null	Null	1812.3	South-west
217	61602084	Exploration	16/01/1985	10.0	10.0	8.0	Null	Null	1812.3	South-west
92	61601765	Unknown	30/06/1978	311.0	302.4	1.0	Null	Null	1812.4	South-west
200	61601432	Unknown	22/03/1978	26.2	Null	19.7	Null	Null	1826.7	South-west
249	61605690	Unknown	15/03/1978	33.5	24.4	18.3	Null	Null	1840.3	North-east
196	61601785	Stock and Domestic	15/07/1978	25.0	Null	18.6	Null	Null	1847.0	South-west
214	61602074	Exploration	04/01/1985	10.5	10.5	7.9	Null	Null	1848.5	South-west
218	61602073	Exploration	24/12/1984	22.0	22.0	8.1	Null	Null	1849.3	South-west
219	61602072	Exploration	16/05/1984	34.0	28.5	8.1	Null	Null	1849.9	South-west
187	61605764	Unknown	28/03/1978	25.9	Null	17.4	Null	Null	1867.8	North-east
188	61601499	Unknown	26/10/1977	24.7	Null	17.7	Null	Null	1873.3	South-west
223	61602079	Exploration	26/09/1984	31.7	31.5	8.4	Null	Null	1879.3	South-west
222	61602081	Exploration	26/09/1984	31.5	10.5	8.3	Null	Null	1879.3	South-west
220	61602080	Exploration	16/01/1985	23.0	23.0	8.2	Null	Null	1879.3	South-west
74	61606342	Stock and Domestic	15/04/1979	14.0	Null	3.7	Null	Null	1882.2	North
129	61601476	Unknown	28/02/1977	18.6	Null	10.7	Null	Null	1883.1	West
75	61601169	Irrigation	30/06/1968	37.2	Null	4.0	287 uS/cm	Null	1888.7	East
110	61601695	Unknown	26/09/1978	9.1	8.5	5.9	Null	Null	1891.0	South-west
174	61601535	Unknown	18/02/1978	25.0	Null	15.5	Null	Null	1897.0	South-west
78	61601494	Unknown	04/10/1977	14.0	Null	5.5	Null	Null	1906.8	South-west
250	61605763	Unknown	03/09/1977	37.8	4.0	20.9	Null	Null	1914.6	North-east
195	61605762	Unknown	29/09/1977	27.4	Null	18.4	Null	Null	1916.7	North-east
269	61615625	Unknown	Null	Null	Null	Null	Null	Null	1917.4	South-west
229	61606093	Unknown	21/10/1977	16.1	16.1	11.9	Null	Null	1930.9	North
71	61601301	Unknown	25/07/1977	14.9	Null	3.2	Null	Null	1943.0	West
142	61601678	Unknown	30/06/1979	18.3	Null	11.9	Null	Null	1944.8	South
4	61605369	Irrigation	01/01/1900	Null	Null	Null	365 uS/cm	Null	1945.0	North
146	61605772	Unknown	12/09/1977	21.3	Null	12.5	Null	Null	1947.2	North-east
137	61601679	Irrigation	07/02/1979	22.9	Null	11.6	Null	Null	1949.7	South
131	61601549	Unknown	08/12/1977	18.3	Null	10.8	Null	Null	1956.1	South-east

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
168	61601433	Unknown	11/10/1977	20.7	Null	14.5	Null	Null	1963.1	South
246	61601531	Unknown	30/12/1977	29.6	26.5	17.1	Null	Null	1963.9	South-west
128	61601786	Unknown	13/12/1978	21.0	Null	10.5	Null	Null	1964.5	South
270	61611158	Unknown	Null	Null	Null	Null	Null	Null	1968.1	South-east
285	61611157	Water Supply	Null	Null	Null	Null	Null	Null	1968.1	South-east
286	61611162	Unknown	Null	Null	Null	Null	Null	Null	1968.1	South-east
277	61611159	Water Supply	Null	Null	Null	Null	Null	Null	1968.1	South-east
261	61611161	Water Supply	Null	Null	Null	Null	Null	Null	1968.1	South-east
259	61611164	Water Supply	Null	Null	Null	Null	Null	Null	1968.1	South-east
271	61611160	Water Supply	Null	Null	Null	Null	Null	Null	1968.1	South-east
275	61611163	Unknown	Null	Null	Null	Null	Null	Null	1968.1	South-east
190	61601692	Unknown	28/11/1978	31.6	Null	18.0	Null	Null	1975.1	South-west
239	61605771	Unknown	18/08/1977	21.9	21.3	13.1	Null	Null	1976.9	North-east
284	61615664	Irrigation	Null	Null	Null	Null	Null	Null	1978.6	East
145	61601548	Unknown	31/01/1978	21.6	Null	12.2	Null	Null	1984.2	South-east
104	61601661	Unknown	30/06/1978	10.0	10.0	3.0	Null	Null	1984.3	West
124	61601668	Unknown	01/01/1900	16.8	Null	9.1	Null	Null	1988.0	South
184	61601175	Irrigation	30/06/1970	27.4	Null	17.2	Null	Null	1992.3	South-east
159	61601645	Unknown	22/05/1978	19.5	Null	13.7	Null	Null	1995.6	South-east
240	61605758	Unknown	14/09/1977	23.2	23.3	13.7	Null	Null	1997.6	North-east

Note: The use of the symbol "-" or "Null" indicates that no records were found.
SWL: Standing Water Level (the latest record is displayed). RWL: Rest Water Level (the latest record is displayed). TSS: Total Soluble Salts.
Source: Groundwater Bores & Lithology

Groundwater Bores Driller Lithology Details

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
61611798	Null	196.2	West
61611797	Null	196.2	West
61611799	Null	196.2	West
61602085	0m-2m Clay; red and maroon, sandy, very fine to medium, poorly sorted, subangular. 2m-4m Clay; mottled, light brown, blue-grey and minor maroon, trace very fine sand. 4m-6m Clay; mixture 2 and 4m. 6m-10m Sand; light yellow, fine to medium, moderately sorted, subrounded. Common garnet and heavy minerals, minor feldspar, common iron staining. Interbedded clays at less than .4m intervals. 10m-12m Clay; light brown, sandy and blue grey, very sandy. Sand as above. 12m-16m Clay; mottled, blue-grey, yellow, red, very sandy, fine. 16m-18m Clay; orange, slightly pebbly and sandy, very coarse sand to very fine pebbles, moderately sorted, subangular and subrounded. Feldspar and quartz.	197.2	West

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	18m-19.5m Calcarenite; lime cemented, medium to coarse sand, trace very fine pebbles, poorly sorted, subrounded to rounded. ?Trace shells, trace heavy minerals. Trace fossils (cavities). 19.5m-21.5m Clay; greenish-black, calcareous, slightly sandy, common heavy minerals, some shale layering. 21.5m-22.5m Not logged.		
61615629	Null	300.0	West
61601784	Null	307.1	South-west
61601683	0m-10.3m Yellow sand 10.3m-12m Band of soft limestone 12m-16.7m Coarse yellow sand with washed pebbles	357.8	South-west
61601303	0m-2.7m Fine yellow sand 2.7m-6.1m Medium yellow sand 6.1m-8.5m Coarse yellow sand	370.1	West
61601299	0m-1.2m Well 1.2m-4.6m Brown sand with fines 4.6m-4.9m Solid clay 4.9m-6.4m Sand with fines 6.4m-9.4m Sand with fines	379.3	West
61601489	0m-6.1m Sand. 6.1m-10.4m L/stone. 10.4m-16.8m Sand. 16.8m-17.1m Not logged.	414.5	West
61615614	Null	420.7	West
61601894	Null	426.7	South-west
61601484	0m-16.5m Dry yellow sand. 16.5m-25.9m Coarse washed sands (wet)	521.8	West
61601368	0m-6.1m Liners 6.1m-9.8m Med-coarse yellow 9.8m-12.5m Clay (sloppy) (depth originally recorded as: 32-14ft) 12.5m-14m Med white (depth originally recorded as: 14-26ft)	527.4	East
61601777	0m-6.1m Well 6.1m-8.5m Coarse yellow sand with some coffee rock 8.5m-10.7m Med white sand 10.7m-15.8m Coarse washed sand	539.8	North-east
61601490	0m-1.5m Fine/med yellow sand. 1.5m-3.1m Med yellow sand. 3.1m-5.2m Med yellow sand. 5.2m-7m Fine/med yellow-white sand. 7m-10.1m Coarse yellow sand. 10.1m-10.4m Fine yellow sand.	569.7	West
61601684	0m-18.3m Yellow sand 18.3m-19.8m Sand and clay 19.8m-30.2m Sand	592.8	West
61601483	0m-0.9m Black sand. 0.9m-14.9m Yellow sand. 14.9m-24.4m Coarse yellow sand.	598.2	West
61671800	0m-6m YELLOW SAND 6m-24m GOOD WHITE SAND 24m-26m WHITE CLAY 26m-28.5m COARSE WHITE SAND 28.5m-33m LIGHT BROWN SAND 33m-35m BROWN CLAYEY SAND 35m-39m MEDIUM TO COARSE LIGHT BROWN SANDS 39m-45m BLACK CLAY	636.0	East
61601122	0m-9.4m White siliceous sand, water 9.4m-10.4m Blue and yellow clay 10.4m-28m Brown and yellow sand 28m-60m Coarse grit sand containing water 60m-65.5m Coarse grit sand with layers of dark peaty matter 65.5m-89.3m Grey sandy shale containing lime and shell fossils 89.3m-93.9m Grey sandstone 93.9m-111.9m Grey sandy shale 111.9m-135.6m Grey sand rock 135.6m-365.8m Grey sandy shale 365.8m-401.7m Dense sandy shale with bands of calcareous sand rock 401.7m-402.3m Hard grey sand rock	644.2	North-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	402.3m-418.2m Dark sandy shale with bands of calcareous sand rock 418.2m-418.8m Hard calcareous band of pyrites 418.8m-424.3m Dark sandy shale 424.3m-429.2m Soft clod with layers of drift sand, nodules of pyrites, quartz boulders and a little artesian water 429.2m-431m Hard siliceous jointed sandrock 431m-431.9m Coarse grit sandrock 431.9m-433.7m Hard siliceous sandrock 433.7m-434.9m Sandrock 434.9m-453.2m White siliceous drift sand		
61601177	Null	658.1	North-east
61601776	0m-1.2m Well 1.2m-7.6m Medium to coarse river sand	666.5	North-east
61601366	0m-9.1m Sand	684.7	North-east
61601814	Null	709.3	East
61601629	0m-11m Liners 6ft l/stone 11m-14.6m Yellow sand 14.6m-19.8m Coarse yellow sand 19.8m-23.2m Coarse white sand	712.0	East
61601447	0m-4.6m Dry yellow sand. 4.6m-11.9m Yellow sand. 11.9m-19.8m Coarse sand.	713.0	South-west
61615644	0m-11m Yellow sand 11m-11.5m Clay/grey 11.5m-19.5m White coarse sand 19.5m-22m Fine white sand	723.4	West
61601482	0m-17.7m Yellow sand. 17.7m-21.3m Hard l/stone.	745.3	South-west
61601202	0m-0.3m Top soil. 0.3m-10.4m Yellow sand. 10.4m-14.3m Dark yellow sand, clay bound. 14.3m-27.4m Medium yellow sand.	794.8	North-west
61601485	0m-15.9m Yellow dry sand. 15.9m-21.3m Coarse water sand.	801.0	West
61601365	0m-3.1m Black sand 3.1m-6.1m White sand 6.1m-7.6m Some coarse with fines 7.6m-8.5m Fine yellow sand 8.5m-10.7m Coarse white sand	812.0	North-east
61611355	Null	813.8	West
61601486	0m-13.7m Yellow sand. 13.7m-15.9m Brown clay. 15.9m-22.9m Coarse sand.	827.2	West
61615564	Null	829.7	North-west
61615604	Null	836.6	North-west
61601675	0m-7.6m Sand 7.6m-7.6m Clay	855.0	West
61601146	0m-0.6m Light brown sand slighly clay 0.6m-1.5m Dark brown sand 1.5m-3.7m Dark yellow sand slight clay 3.7m-5.8m Yellow sand slight clay 5.8m-7m Clean white sand 7m-8.5m White sand slight clay 8.5m-10.1m Clean white sand 10.1m-11m Clay 11m-14.3m Sandy clay 14.3m-15.2m Sandy stone and slight clay	866.6	West
61602069	0m-6m Sand; orange, medium to coarse, well sorted, subrounded to rounded, iron stained, slightly clayey 6m. 6m-12m Sand; yellow, slightly clayey except 8m, medium, well sorted, subrounded to rounded. 12m-16m Sand; light grey, yellowish, slightly clayey, medium to coarse, moderately sorted, subrounded to rounded, minor garnet, trace dark fines. 16m-18m Sand; yellow, slightly clayey, coarse, minor very coarse, moderately sorted, subrounded to rounded, minor iron stained, common garnet, minor dark fines, rare feldspar.	868.9	South-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	18m-22m Sand; as 18m, slightly coarser, minor pebbles at 20m, quartz and limonite to 12mm. 22m-24m Sand; yellow, coarse to very coarse, well sorted, subangular to subrounded, minor iron stained, trace dark fines. Sand; brown-yellow, clayey, silty, coarse to very coarse, poorly sorted, subangular to subrounded, minor iron stained, common dark fines. 24m-26m Clay; khaki, sandy, fine to medium, moderately sorted, subrounded, common dark fines. 26m-28m Sand; yellow-brown, very clayey, medium to coarse moderately sorted, subrounded to rounded, rare dark fines. 28m-30m Sand; light yellowish-grey, no clay, as 28m, trace mica. 30m-32m Coffee brown, medium to coarse, moderately sorted, subangular to subrounded, brown iron stained, rare dark fines. 32m-33.5m Clay: yellow-light brown, noncalcareous. 33.5m-34m Sandstone; dark grey, hard, coarse to very fine pebbles, moderately sorted, subangular to subrounded.		
61615565	Null	871.9	North-west
61611717	Null	876.7	South-west
61611716	Null	876.7	South-west
61611715	Null	876.7	South-west
61601448	0m-1.2m Liners. 1.2m-1.5m Black. 1.5m-3.1m Yellow sand. 3.1m-6.1m Clay soup and coffee rock. 6.1m-9.4m Soupy coarse sand. 9.4m-9.8m Washed stones. 9.8m-11.3m Coarse yellow sand. 11.3m-11.9m Clay.	877.2	South
61601247	0m-9.1m Yellow sand 9.1m-12.2m Light yellow sand 12.2m-22.6m White sand with clay bands	911.5	West
61602066	0m-6m Sand: yellow, medium to coarse, well sorted, subangular to subrounded, iron coated, slightly clayey 6m. 6m-8m Siltstone: orange, yellow and red, very clayey, slightly sandy as above, noncalcareous. 8m-10m Sand: brown-orange, very clayey and silty, medium to very coarse, poorly sorted, subangular to subrounded, iron coated. 10m-12m Sand: light yellow, fine to coarse, partly sorted, subangular to subrounded, trace dark fines, transitional 10 to 14m. 12m-16m Sand: white, noncalcareous, medium to coarse, moderately sorted, angular to subrounded, common dark fines. 16m-18m Sand: as 10m, trace very fine pebbles, subrounded. 18m-22m Light yellow, medium to coarse, partly sorted, subrounded, minor dark fines, similar to 12m. 22m-24m Sand: offwhite to light yellow, slightly silty and clayey, coarse, moderately sorted, subrounded, trace dark fines. 24m-28m Sand: white to light yellow, coarse to very coarse, moderately sorted, subrounded to rounded, minor yellow iron staining especially 28m, rare dark fines. 28m-30m Sand: light orange, pebbly, medium to coarse, moderately sorted, subrounded to rounded, common quartz and ironstone pebbles to 45mm, subrounded, trace red clay, minor dark fines. 30m-31m Mudstone: light grey and yellow, shelly, calcareous, moderately to very hard, bedding 20mm alternating silty and sandy, coarse sand to very fine pebbles. Limestone 31-34m. 31m-32m Sandstone: dark grey, muddy, calcareous, shelly, coaralline, turritella, coarse, poorly sorted, subrounded to rounded. 32m-34m Clay: grey, slightly calcareous, slightly shelly and sandy (? from above). 34m-37m Clay: grey, slightly calcareous.	948.0	West
61601446	0m-20.4m Sand.	949.9	South-west
61611154	Null	951.1	West
61611714	Null	954.1	West
61611711	Null	954.1	West
61611713	Null	954.1	West
61611712	Null	954.1	West

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
61601445	0m-16.1m Yellow sand. 16.1m-22.3m Whitish coarse sand.	955.5	South-west
61670909	0m-2m Sand; grey 2m-13m Sand; brown; with traces of coffee rock 13m-20m Sand; grey; medium; with traces of clay 20m-29m Sand; grey; coarse 29m-33m Green silty sands and grey clay 33m-35m Clay; black 35m-37m Not logged	964.6	South
61615632	0m-3.5m Brown sand. 3.5m-4.5m Slightly coarser. 4.5m-5.5m Coarse sand and some water washed pebbles. 5.5m-6.4m Coarse sand with a few larger pebbles. 6.4m-7m Very coarse sand with large pebbles. 7m-8.3m Sand and small lumps of clay. 8.3m-16.4m Not logged.	972.6	North-east
61601240	0m-15.2m Yellow sand some clay bands (white). At 15.24m white sand 15.2m-21.3m Red clay	996.2	West
61611361	Null	1019.1	West
61601207	Null	1022.4	West
61615630	Null	1026.3	South-west
61670858	0m-1m Sand; grey; topsoil 1m-9m Sand; orange 9m-26m Sand; coarse; with thin clay bars 26m-27m Clay; black	1033.2	South-east
61601895	Null	1040.3	North-east
61601444	0m-29.3m Sand.	1040.8	South-west
61610160	Null	1042.8	West
61601480	0m-20.1m Yellow sand. 20.1m-20.1m Clay.	1050.2	West
61610159	Null	1053.6	West
61601478	0m-15.8m Sand. 15.8m-15.9m Clay.	1054.5	West
61601442	0m-2.4m Grey sand. 2.4m-30.5m Mainly red sand. 30.5m-32.9m Brown sand. 32.9m-36.6m Sand and some silt at 120ft. 36.6m-38.1m Silty clay and gravel.	1062.1	South-west
61601878	Null	1063.7	West
61601443	0m-32.2m Sand.	1077.3	South
61609682	0m-16m Yellow sand 16m-20m Fine white sand 20m-23m Medium yellow sand clayey 23m-26.5m Coarse orange sand 26.5m-28.5m Medium sand, clayey for last 0.5m	1081.7	South-west
61602078	0m-4m Sand; orange, medium to coarse, well sorted, subrounded, common dark fines at 1m. 4m-11m Sand; light yellow to pale yellow, slightly silty 7-11m, medium, well sorted, subrounded, trace dark fines. 11m-15m Sand; white to very faint yellow, as 5-11m. 15m-17m Sand; yellow, medium, well sorted, subrounded, common dark fines.	1086.0	South-west
61602077	0m-4m Sand; orange, medium to coarse, well sorted, subrounded, common dark fines at 1m. 4m-11m Sand; light yellow to pale yellow, slightly silty 7-11m, medium, well sorted, subrounded, trace dark fines. 11m-15m Sand; white to very faint yellow, as 5-11m. 15m-18m Sand; yellow, medium, well sorted, subrounded, common dark fines. 18m-21m Sand; yellow, medium to coarse, moderately sorted, subangular to subrounded, trace blue-grey and weathered brown clay lumps, very sandy 19-31.6m. 21m-24m Sand; light orange, coarse to very coarse, moderately sorted, subrounded, trace ferruginous sandstone pebbles to 35mm (coffee rock) and quartz to 18mm, subangular, especially at 22m. 24m-26m Sand; orange-brown, coarse to mainly very coarse, moderately sorted,	1086.0	South-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	subangular to mainly subrounded, trace iron stained quartz pebbles. 26m-27m Clay; yellow, sandy as 26m. 27m-30m Sand; yellow, coarse, well sorted, subrounded, trace pink clay, minor dark fines. 30m-31.6m Sand; as 30m, quartz and laterite pebbles to 12mm. 31.6m-33.7m Clay; dark grey. Limestone; yellow, very hard, sandy, coarse to very coarse, moderately sorted, angular to subrounded. Limestone; black, very hard, sandy, fine. Shells; dark grey to black, cherty. 33.7m-35m Clay; dark green-black, noncalcareous, sandy, coarse, poorly sorted, subrounded.		
61602068	0m-17m Sand, yellow, light yellow 6-12 and 16m, medium, well sorted, subrounded to rounded, iron stained, minor dark fines.	1094.0	South-west
61602067	0m-18m Sand: yellow, light yellow 6-12 and 16m, medium, well sorted, subrounded to rounded, iron stained, minor dark fines. 18m-20m Sand: orange, medium to coarse, well sorted, subangular to subrounded, heavier iron staining than 2-16m, minor dark fines. 20m-21m Sandstone: blue-grey, minor red, very clayey, medium to coarse, poorly sorted, abundant dark fines, trace charcoal. 21m-24m Sand: light yellow to white, medium, well sorted, subangular to rounded, minor iron staining and dark fines. 24m-26m Sand: orange, coarse to very coarse, well sorted, subrounded to rounded, iron staining, minor dark fines. 26m-27m Sand: orange, pebbly, coarse sand to very fine pebbles trace to 23mm, moderately sorted, subangular to rounded, iron stained, trace feldspar and brick red clay, rare ironstone (coffee rock), dark orange-brown, iron cemented pebbles. 27m-30m Sand: dark orange-brown, slightly clayey, pebbly, coarse to to very coarse, moderately sorted, subrounded, heavy iron coating, trace dark fines. 30m-32m Clays; purple and brown. Sandstone; white, hard, calcareous cement, coarse to very coarse, well sorted, subangular to rounded. Sandstone; dark grey, hard, coarse, well sorted, subangular to subrounded. 32m-34m Sandstone; shelly, as above, some loose shells. 34m-35m Clay; jet black, slightly calcareous and sandy. 35m-36m Clay; very dark grey with slight green tinge, slightly calcareous, very sandy, very fine to coarse, poorly sorted, subrounded to rounded, less sandy 36m. 36m-37m Clay; green-black, ? glauconitic, slightly shelly and calcareous, sandy, coarse, moderately sorted, rounded.	1094.0	South-west
61601877	Null	1096.2	West
61601271	0m-29.6m Sand	1100.4	South
61601488	0m-14m Dry sand. 14m-19.5m Wet coarse sand. 19.5m-19.8m Very coarse sand. 19.8m-21.3m Sandy clay.	1102.7	West
61601291	0m-16.8m Yellow sand 16.8m-18.3m Clay 18.3m-22.9m Yellow sand 22.9m-25.6m Not logged	1120.3	West
61601833	0m-1.8m Coffee rock. 1.8m-2.4m Heavy clay. 2.4m-6.7m Silty clay. 6.7m-9.7m Coarse river sand. 9.7m-9.8m Coarse river sand change to iron colour.	1121.7	South
61601481	0m-2.1m Black top soil and rubble filling. 2.1m-12.8m Yellow sand. 12.8m-18.9m Cream sands (clayey) 18.9m-19.2m Yellow clay. 19.2m-19.8m Yellow sand improving. 19.8m-20.7m Yellow sand and seams of clay. 20.7m-21.3m Yellow sand (coarse) 21.3m-24.1m Yellow sand (coarse) 24.1m-24.1m Yellow clay and quartz.	1125.7	West
61602076	0m-4m Sand; orange, medium. 4m-11m Sand; yellow. 11m-16m Sand; light yellow, fine to medium, traces clay. 16m-17m Sand; very light yellow to white.	1127.0	South-west
61602075	0m-4m Sand; orange, medium. 4m-11m Sand; yellow. 11m-16m Sand; light yellow, fine to medium, traces clay.	1127.0	South-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	16m-17m Sand; very light yellow to white. 17m-18m Sand; white. 18m-20.2m Sand; very light yellow. 20.2m-21m Clay; light yellow brown in sand. 21m-24m Sand; yellow, coarse, laterite pebbles and brown clays at 24m. 24m-26m Sand; dark orange, coarse to very coarse. 26m-27m Clay; yellow brown. 27m-29m Sand; dark orange brown, coarse to very coarse, minor very fine pebbles, thin clay lenses. 29m-30.2m Coffee brown, coarse to very coarse, laterite and quartz pebbles to 15mm. 30.2m-31m Sandstone; dark grey, very hard, calcareous. Limestone; dark grey, calcite shells. Clay; dark grey, abundant black platey ?plant fronds.		
61601789	0m-8.8m Sand 8.8m-9.1m Limestone floaters 9.1m-9.8m Limestone 9.8m-11.6m Sand 11.6m-13.4m Limestone 13.4m-15.8m Sand 15.8m-17.1m Limestone 17.1m-18m Sand 18m-18.9m Limestone 18.9m-21.3m Sand 21.3m-21.9m Limestone 21.9m-28.3m Sand	1134.7	South-west
61601238	0m-30.5m Yellow sand, some soft clay bands	1145.1	South-west
61601214	0m-7.3m Yellow sand. 7.3m-9.1m Clayey yellow sand and coffee rock. 9.1m-12.2m Yellow sand - water. 12.2m-14.3m Yellow sand. 14.3m-16.8m White sand, coarse and fine. 16.8m-20.1m Yellow sand coarse with washed stones and quartz. 20.1m-22.6m Pale yellow sand with quartz. 22.6m-23.8m Fine grey clayey sand. 23.8m-26.5m Fine grey clayey sand. 26.5m-26.8m Clayey yellow sand with clay lumps. 26.8m-27.4m Pale yellow clayey sand. 27.4m-27.7m Firm grey clay. 27.7m-29m Dark grey coarse sand with shell. 29m-30.5m Clayey brown sand. 30.5m-31.4m Firm grey clay with stones.	1156.9	South-east
61601491	0m-12.2m Yellow sand. 12.2m-18.3m Brown sand. 18.3m-19.2m Clay (brown)	1162.3	West
61611350	Null	1163.5	South-west
61601487	0m-21.1m Sand. 21.1m-21.9m Clay. 21.9m-25m Sand.	1166.3	West
61602109	0m-3m Surface sand 3m-15m Medium white sand 15m-26m Silty fine grey sand 26m-33m Coarse yellow sand	1172.6	East
61601173	Null	1173.7	South-east
61606000	0m-0.3m Not logged 0.3m-2.7m Coarse sand 2.7m-5.2m Coarse orange sand 5.2m-7.6m Medium orange sand	1193.2	North
61610158	Null	1200.9	West
61601441	0m-10.7m Well. 10.7m-13.6m Yellow sand. 13.6m-15.5m L/stone. 15.5m-18.4m Yellow fine sand. 18.4m-20.5m Yellow fine sand/med. 20.5m-21.5m Med yellow sand. 21.5m-21.5m Sandy yellow clay.	1202.7	South
61601876	Null	1205.5	West

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
61611615	Null	1217.4	South-east
61611217	Null	1223.4	West
61601812	0m-9.1m Sand. 9.1m-11m Soft rock-or clay. 11m-12.8m Soft rock. 12.8m-21.3m Sand.	1227.9	South-west
61605767	0m-1.2m Liner. 1.2m-1.8m White sand. 1.8m-5.8m Coarse sand. 5.8m-6.4m Coarse sand and clay. 6.4m-8.8m Medium orange sand.	1232.0	North
61601300	0m-0.6m White sand 0.6m-1.2m Solid clay + sand (brown) 1.2m-5.5m Brown clay silt 5.5m-8.5m Grey clay silt 8.5m-10.4m Coarse sand and clay silt (grey) 10.4m-11.6m Yellow coarse sand and silt 11.6m-12.2m Coarse yellow sand 12.2m-12.2m Solid clay	1240.0	West
61615607	Null	1260.0	South-east
61601172	Null	1262.2	South-east
61601367	0m-1.2m Liners 1.2m-1.8m White sand 1.8m-4.9m Medium yellowish sand 4.9m-8.5m Medium white sand 8.5m-9.1m Coarse sand and washed rock 9.1m-10.4m Not logged	1267.6	East
61615572	0m-16.3m White sand with some smooth and round quartz pebbles. At 20ft there was 6 in of clay	1276.1	North-east
61601227	0m-0.6m Surface soil. 0.6m-9.1m Yellow sand. 9.1m-12.2m Light yellow sand. 12.2m-14.6m White sand. 14.6m-15.9m Coarse white sand. 15.9m-16.8m Finer white sand, 020, with coarse sand. 16.8m-17.4m Coarse light yellow sand and some fine silty sand. 17.4m-17.7m Water-washed quartz pebbles and light brown quartz sand. Bits of white and grey clay. 17.7m-19.5m White sand, good, .025in or better. 19.5m-20.4m Fine and coarse sand, fine bits of clay, soupy appearance and blowing up bore. 20.4m-21m Coarse white coarse sand. 21m-22.9m Fine light to yellow silty sand. 22.9m-25.6m Dark yellow silty sand and clay. 25.6m-27.1m Grey sand and grey clay. Shell and grey stone, no water filling bore.	1285.2	South-east
61605765	0m-1.5m Med. Yellow sand. 1.5m-3.1m Med. Coarse white sand. 3.1m-4.6m Coarse yellow sand. 4.6m-5.5m Coarse yellow sand. 5.5m-5.5m Fine yellow sand. 5.5m-11m Not logged.	1287.6	North-east
61610150	Null	1295.6	West
61601791	0m-21.6m Yellow sand.	1313.9	South-west
61615566	Null	1343.9	West
61601178	Null	1345.0	East
61606781	0m-2m Sand - n.B. The samples 0-2m may include fill at the edge of the excavation to 5m for installing the sewerage pumping station 10m north.	1357.6	North
61606780	0m-20m Sand - n.B. The samples 0-2m may include fill at the edge of the excavation to 5m for installing the sewerage pumping station 10m north. 20m-22m Clay. 22m-24m Sand.	1357.6	North
61611811	Null	1362.2	North
61611810	Null	1362.2	North

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
61611813	Null	1362.2	North
61611812	Null	1362.2	North
61611814	Null	1362.2	North
61611815	Null	1362.2	North
61601825	Null	1364.2	South-west
61601226	0m-0.6m Surface sand. 0.6m-11.6m Yellow sand - water. 11.6m-12.2m Light yellow sand. 12.2m-13.7m White sand. 13.7m-14.6m Yellow sand and white (coarse) 14.6m-15.2m White sand. 15.2m-15.9m Yellow coarse sand. 15.9m-17.4m Yellow coarse sand. 17.4m-18.3m Grey sand and clay, fine. 18.3m-19.2m Fine white sand (.020) 19.2m-21.3m Coarse quartz white sand. 21.3m-21.9m Coarse and fine sand white and lots of clay. 21.9m-23.5m Fine white sand.	1367.3	South-east
61601826	Null	1374.7	South-west
61605766	0m-19.5m Sand.	1380.8	North-east
61601280	Null	1388.0	North-east
61601473	0m-17.1m Sand.	1393.1	South
61601360	0m-1.5m Fine white sand (clay spots) 1.5m-10.4m Fine white sand (pebbles) 10.4m-13.4m Med coarse white sand	1401.3	East
61610157	Null	1401.3	West
61601472	0m-27.4m Yellow sand. 27.4m-29.6m L/stone. 29.6m-32m Yellow sand.	1401.6	South
61601361	0m-0.9m Black sand - liners 0.9m-1.2m Light brown sand - liners 1.2m-3.7m Yellow sand - liners 3.7m-4.3m Creamy yellow sand 4.3m-5.5m White sand fine 5.5m-10.7m White sand medium 10.7m-13.4m White sand greenish fine	1402.1	South-east
61601805	0m-10.7m Sand. 10.7m-22m Limestone.	1407.0	South-east
61610155	Null	1413.4	West
61610156	Null	1416.2	West
61605370	Null	1421.8	North
61601545	0m-1.5m Yellow sand. 1.5m-4.6m Soft l/stone. 4.6m-7.3m Capstone. 7.3m-11m Hard l/stone. 11m-13.4m Soft l/stone. 13.4m-19.5m Soft l/stone (with brown sand patches)	1429.4	South-east
61611352	Null	1438.0	South
61601674	0m-8.2m Sand. One foot of coffee rock at approx 20ft. 8.2m-11m Sand (casing) 11m-16.8m Sand and some very light clay, the 8-9ft relatively coarse white quartz	1454.0	West
61601362	0m-27.4m Sand	1457.8	North-east
61601682	0m-6.5m Sand	1459.9	West
61671827	0m-0.5m BLACK TOP SOIL 0.5m-1m WHITE SAND 1m-2.5m PALE YELLOW SAND 2.5m-4m SLOPPY ORANGE SAND 4m-5m PALE YELLOW SAND 5m-8.5m SLOPPY PALE YELLOW SAND: Small pieces of coffee rock 8.5m-9.5m SLOPPY PALE YELLOW SAND: Pieces grey clay	1460.1	South

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	9.5m-13m SLOPPY CLAYEE WHITE SAND AND GREY CLAY 13m-14m ORANGE CLAYEE SAND AND COFFEE ROCK 14m-14.5m ORANGE AND GREY CLAY		
61615580	0m-4.6m Dark yellow fine sand 4.6m-10.7m Yellow fine sand some clay content 10.7m-13.7m Coarse white sand 13.7m-14.6m Coarse white sand and pebbles	1460.2	South-east
61601912	Null	1461.6	East
61671828	0m-0.5m BLACK TOP SOIL 0.5m-1m WHITE SAND 1m-2.5m PALE YELLOW SAND 2.5m-5m YELLOW SAND 5m-6m SLOPPY YELLOW SAND 6m-7.5m SLOPPY PALE YELLOW SAND: Small pieces of coffee rock 7.5m-10m VERY FINE WHITE SAND 10m-10.5m LIGHT BROWN SAND : With small pieces of grey clay 10.5m-11.5m FINE WHITE SLOPPY SAND 11.5m-12.5m SLOPPY YELLOW SAND AND GREY CLAY 12.5m-13.5m SLOPPY YELLOW SAND 13.5m-15m YELLOW CLAY	1464.7	South
61601824	0m-10.7m Sand. 10.7m-12m Clay. 12m-13.7m Sandy clay. 13.7m-15.9m Fine sand. 15.9m-18.3m Coarse sand. 18.3m-18.3m Clay.	1484.5	West
61601909	0m-1.8m Sand. 1.8m-3.7m Pinnacle 3.7m-8.5m Soft l/stone. 8.5m-11.6m Hard bands l/stone. 11.6m-24.4m Sand.	1489.2	South-east
61601440	0m-0.9m Top soil. 0.9m-17.8m Yellow sand. 17.8m-25.4m Yellow coarse wash with band of coffee rock at 73ft-75ft.	1490.4	South
61615608	Null	1500.7	South-east
61601794	0m-6.1m Fine white sand, some clay. 6.1m-9.4m Med. Coarse sand, white.	1507.1	South-east
61601546	0m-10.7m Sand.	1512.0	South-east
61601544	0m-3.5m Yellow sand. 3.5m-3.8m Coffee rock. 3.8m-4.6m Yellow sand. 4.6m-6.1m Coarse brown sand. 6.1m-12.8m Coarse white sand.	1534.0	South-east
61606345	0m-27.1m Sand.	1542.3	North-east
61601852	Null	1546.3	South-west
61611268	Null	1559.5	West
61611269	Null	1559.5	West
61611267	Null	1559.5	West
61611201	Null	1560.6	West
61611734	Null	1563.3	West
61611731	Null	1563.3	West
61611736	Null	1563.3	West
61611729	Null	1563.3	West
61611733	Null	1563.3	West
61611735	Null	1563.3	West
61611732	Null	1563.3	West
61611730	Null	1563.3	West
61610154	Null	1564.2	West
61610152	Null	1564.9	West

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
61610153	Null	1566.2	West
61610151	Null	1567.0	West
61610149	Null	1569.4	West
61601260	Null	1572.6	East
61601268	0m-11m Yellow sand 11m-18.3m White sand 18.3m-19.2m Clay	1577.9	West
61601792	0m-7.3m Liners (last 2.43m hard clay) 7.3m-7.9m Coarse white sand. 7.9m-12.2m White sand, medium with soup. 12.2m-16.4m Coarse white sand.	1585.9	South-east
61601477	0m-12.2m Yellow sands. 12.2m-15.2m Brown sands.	1587.0	West
61601363	0m-14.6m Sand	1595.2	East
61611604	Null	1595.9	West
61672086	0m-12.4m FINE YELLOW SAND 12.4m-22m FINE WHITE SAND 22m-30m MEDIUM WHITE SAND	1596.0	North-east
61611718	Null	1597.8	South
61611721	Null	1597.8	South
61611720	Null	1597.8	South
61611723	Null	1597.8	South
61611719	Null	1597.8	South
61611722	Null	1597.8	South
61615631	Null	1598.6	South
61601128	Null	1599.7	South
61605371	Null	1603.2	North-east
61601359	0m-3.7m White sand 3.7m-7.6m Sloppy white mud 7.6m-10.7m White pumping sand	1630.9	East
61601681	0m-1.2m Dark grey and male sand 1.2m-3.7m Yellow sand 3.7m-4.6m Yellow sand and soft ferruginous concretions 4.6m-5.2m Mottled yellow clayey sand and concretions 5.2m-6.7m Mottled clay and at 22ft - water table and white clayey sand becoming gritty white sand 6.7m-14.9m Not logged and at 49ft - thin layer of thick clay 14.9m-15.2m Pale yellowish sand 15.2m-16.1m Pale sand 16.1m-16.5m White sand and quartz grit 16.5m-16.5m 3 in layer of heavy clay 16.5m-17.7m Coarse sand with quartz grit 17.7m-19.5m Coarse white sand with large quartz grit and numerous quartz stones 19.5m-19.8m Not logged	1633.0	West
61615640	Null	1634.5	South-east
61611907	Null	1634.8	South-west
61611904	Null	1634.8	South-west
61611905	Null	1634.8	South-west
61611906	Null	1634.8	South-west
61601281	0m-12.2m Sand 12.2m-17.1m Hard sandstone 17.1m-25m Sand 25m-25.6m Hard sandstone, remainder sand 25.6m-32.9m Not logged	1645.8	South
61601998	Null	1646.6	South-west
61601999	Null	1646.6	South-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
61602000	0m-1.5m Silty sand. Yellow, poorly sorted fine to medium grained subangular quartz sand and silt 1.5m-4.5m Clayey sand. Yellow, poorly sorted fine to coarse grained subangular quartz sand and yellow clay. 4.5m-6m Sandy clay. Yellow, poorly sorted fine to medium grained subangular quartz sand and yellow clay. 6m-6.5m Not logged 6.5m-7.5m Clayey sand. Bright yellow clay and poorly sorted fine to medium grained subangular quartz sand. 7.5m-12m Sandy clay. As above, with clay dominant 12m-15m Sand. Cream coloured, poorly sorted v fine to medium grained subangular quartz sand and minor clay 15m-22.5m Clayey sand. Yellow clay and poorly sorted very fine to medium grained subangular quartz sand. 22.5m-24m Sand. Yellow, moderately sorted medium to coarse grained subangular to subrounded quartz sand and minor clay 24m-28m Clayey sand. Poorly sorted very fine to medium grained subangular quartz sand and yellow clay. Auger bottomed on hard clay at 28m.	1646.6	South-west
61606148	0m-27.4m Yellow to white sand.	1649.0	North-east
61601498	0m-1.2m Top soil. 1.2m-7m Yellow sand (fine and clayey) 7m-8.5m Yellow sand and coffee rock. 8.5m-10.7m Light yellow clayey silt sand. 10.7m-14m Cream and clayey (slightly improving) 14m-17.1m White sand clayey 020-025 medium to coarse. 17.1m-17.7m Yellow clay. 17.7m-19.8m Yellow sand (coarse) and clay lumps. 19.8m-22.6m Yellow sand (coarse) and clay floaters. 22.6m-23.5m (Brown sand coarse) 23.5m-31.4m Shale (grey) 31.4m-32m Grey sand (fine and clayey) 32m-32.9m Clay bars and grey sand (fine and clayey) 32.9m-33.8m Coarse sand and quartz agots. 33.8m-44.2m (Black shale) 44.2m-106.7m Black shale no change.	1650.9	South-west
61615597	Null	1654.8	South-west
61611216	Null	1660.0	West
61611728	Null	1664.3	South
61611725	Null	1664.3	South
61611724	Null	1664.3	South
61611727	Null	1664.3	South
61611726	Null	1664.3	South
61601286	0m-6.1m Sand 6.1m-6.7m Coffee rock 6.7m-13.4m Clay and mud ?? took 25 minutes to insert casing 30ft.	1667.4	South
61601935	0m-7m White sand 7m-11.5m Yellow sand with some brown - so there!!	1669.8	West
61601547	0m-6.1m Sand. 6.1m-7.9m L/stone. 7.9m-10.4m Capstone. 10.4m-19.5m Sand. 19.5m-19.8m Not logged.	1671.2	South-east
61601364	0m-0.9m Brown sand 0.9m-14.9m Yellow sand 14.9m-21.3m White sand and coarse stones	1672.4	North-east
61601691	0m-9.4m Yellow sand 9.4m-11m Sand with clay 11m-19.8m White sand 19.8m-20.1m Clay	1677.1	South-west
61609939	0m-1m Grey sand 1m-3m Yellow sand 3m-9m Coarse white sand 9m-15m Medium white sand 15m-22m Coarse white sand 22m-25m Orange clay, sandy	1690.5	South-east

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	25m-27m Grey limestone, shell, coarse sand 27m-30m Black shale		
61601685	0m-1.8m Grey sand 1.8m-7.9m Yellow sand 7.9m-15.2m Creamy sand 15.2m-18.9m White sand 18.9m-21.9m Not logged	1693.8	West
61601696	0m-2m Brown-black sand 2m-23m Fine yellow sand 23m-27.5m Yellow-orange sand with clay 27.5m-29.5m Coarse yellow sand (v/good)	1694.5	South
61615553	Null	1705.3	South-west
61611362	Null	1712.4	South-west
61601790	0m-3.7m Yellow sand 3.7m-4m Coffee rock 4m-8.8m Fine white sand 8.8m-9.8m Fine white sand with pieces of clay 9.8m-11.6m Coarser white sand with pieces of soft coffee rock 11.6m-12.2m Coarse sand	1716.5	East
61610116	Null	1720.4	West
61601533	0m-22.3m Sand.	1725.5	South-west
61601435	0m-22.9m Yellow sand. 22.9m-24.4m Brown sand and coffee rock. 24.4m-28.6m Dark yellow sand.	1725.7	South
61615598	Null	1726.2	West
61602070	0m-4m Sand; orange, medium to coarse, moderately sorted, subangular to rounded, iron stained, trace garnet, dark fines. 4m-6m Sand; yellow, as 2m. 6m-8m Sand; mixture 6 and 10m, trace limonitic pebbles. 8m-10m Sand; light grey, fine to coarse, moderately sorted, subangular to rounded, common dark fines. 10m-16m Sand; light grey, blue-grey and clayey 14, 16m, fine to very coarse, unsorted, subangular to rounded, common dark fines, trace garnet. 16m-18m Sand; light khaki, coarse, well sorted, subangular to rounded, common dark fines, trace garnet. 18m-19m Sand; light khaki, slightly clayey, fine to coarse, poorly sorted, subangular to rounded, common dark fines, trace garnet, feldspar. 19m-20m Sand; light khaki, slightly clayey, medium to coarse, moderately sorted, subrounded to rounded, common dark fines, garnet, trace feldspar. 20m-22m Sand; light yellow, slightly clayey and gravelly, medium sand to very fine pebbles, poorly sorted, subangular to subrounded, minor feldspar, dark fines. 22m-24m Sand; orange, as 22m, subrounded to rounded, minor iron stained, trace feldspar. 24m-26m Sand; orange-grey, gravelly, very coarse sand to very fine pebbles, well sorted, subangular to rounded, some iron stained, trace dark fines, ?feldspar. 26m-26.5m Sand; orange-brown, sandy. Sand; as 26m, gravel includes limonite pebbles to 7mm, red. 26.5m-27m Orange, clayey, coarse to very coarse, moderately sorted, subangular to rounded, iron stained, minor red limonite grains, carbonaceous material, trace dark fines. 27m-28m Sand; as 27m, very coarse, subrounded to rounded. Clay; yellow-brown, sandy as above. 28m-28.5m Yellow-brown, trace grey as below. Casing driven past contact 28m. 28.5m-29m Clay; green-blac, noncalcareous, slightly ? glauconitic and sandy, fine to very coarse, poorly sorted, subangular to subrounded. 29m-32m Clay; black, noncalcareous, very slightly sandy becoming slightly sandy, very fine to fine.	1730.8	West
61610117	Null	1731.1	West
61610167	Null	1735.0	South
61601775	0m-18m Yellow sand 18m-22.4m Coarser white sand 22.4m-23.7m White sand with water washed pebbles	1739.8	North-east
61606121	Null	1749.6	North-east
61601470	0m-18.9m Yellow dry sand. 18.9m-26.8m Coarse sand (water)	1751.1	South

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
61610148	Null	1754.6	South-west
61671920	0m-8m YELLOW SAND 8m-16m FINE WHITE CLAYEY SAND 16m-19m MEDIUM WHITE SAND 19m-20m COARSER WHITE SAND 20m-22m COARSE SANDY GRAVEL 22m-24m COARSE SANDY GRAVEL: With yellow clay increasing with depth	1755.8	West
61615118	Null	1758.6	South-west
61601275	0m-4.6m Sand 4.6m-16.5m Clay and sand 16.5m-18m Limestone, moderately hard 18m-29.9m Medium to coarse sasnd becoming coarser with depth.	1759.6	South-west
61601176	Null	1762.8	South-east
61601431	0m-24.4m Sand.	1764.7	South-west
61601479	0m-21.3m Yellow sand.	1773.3	West
61615626	Null	1775.2	South-west
61601469	0m-0.9m Black sand. 0.9m-18.3m Yellow sand and clay bands. 18.3m-25.3m Coarse sand and stones. 25.3m-25.6m Clay.	1776.9	South
61601241	0m-15.2m Yellow sand 15.2m-21.3m Yellow clay and small clay banks 21.3m-30.2m Yellow and white sand	1777.1	South-west
61601497	0m-25.6m Yellow sand.	1781.3	South-west
61601471	0m-19.5m Yellow sand. 19.5m-26.8m Coarse wet sand.	1791.9	South
61601161	Null	1803.4	South-west
61601246	0m-9.1m Dark yellow sand 9.1m-22.9m Yellow sand, light 22.9m-30.5m Yellow sand, wet	1810.9	South
61602082	0m-1.5m Sand; grey, coarse, well sorted, subangular to rounded. 1.5m-3m Sand; light yellow-brown, medium to coarse, well sorted, subangular to subrounded, common iron stained. 3m-5m Sand; orange, coarse, well sorted, subangular to subrounded, iron stained. 5m-10m Sand; yellow, fine to coarse fining downward, poorly sorted, subangular to subrounded, iron stained, trace clay. 10m-14m Sand; white, fine to coarse, poorly sorted, subrounded to rounded, frosted, trace clay 12-13m fine. 14m-15m Sand; light yellow, medium to coarse, trace fine, moderately to well sorted, subrounded to rounded, minor iron stained, trace clay. 15m-16m Clay; orange-brown, sandy as below. 16m-17m Sand; orange, slightly clayey as above, coarse, moderately sorted, subrounded to rounded, common iron stained. 17m-20m Sand; light yellow, medium to coarse, moderately sorted, subrounded, minor iron stained 18-20m slightly more fines, trace feldspar. 20m-23m Sand; brown, coarse to very coarse, minor very fine pebbles to 15mm pebbles, moderately sorted, subangular to rounded, common iron stained, trace limonite, slightly clayey at base. 23m-24m Yellow-brown silty. 24m-27m Sand; brown-yellow, clayey, calcareous, coarse to very coarse, minor very fine pebbles, moderately sorted, subangular to subrounded, least clayey in middle. 27m-29.7m Limestone; dark grey, hard, shelly, bivalves, clams, gastropods. Sandstone; dark grey, very coarse to very fine pebbles, moderately sorted, angular to rounded. 29.7m-31m Dark grey, non calcareous, trace sand, very coarse, rounded.	1812.3	South-west
61602083	0m-1.5m Sand; grey, coarse, well sorted, subangular to rounded. 1.5m-3m Sand; light yellow-brown, medium to coarse, well sorted, subangular to subrounded, common iron stained. 3m-5m Sand; orange, coarse, well sorted, subangular to subrounded, iron stained. 5m-10m Sand; yellow, fine to coarse fining downward, poorly sorted, subangular to subrounded, iron stained, trace clay. 10m-14m Sand; white, fine to coarse, poorly sorted, subrounded to rounded,	1812.3	South-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	frosted, trace clay 12-13m fine. 14m-15m Sand; light yellow, medium to coarse, trace fine, moderately to well sorted, subrounded to rounded, minor iron stained, trace clay. 15m-16m Clay; orange-brown, sandy as below. 16m-17m Sand; orange, slightly clayey as above, coarse, moderately sorted, subrounded to rounded, common iron stained. 17m-20m Sand; light yellow, medium to coarse, moderately sorted, subrounded, minor iron stained 18-20m slightly more fines, trace feldspar. 20m-22m Sand; brown, coarse to very coarse, minor very fine pebbles to 15mm pebbles, moderately sorted, subangular to rounded, commoniron stained, trace limonite, slightly clayey at base.		
61602084	0m-1.5m Sand; grey, coarse, well sorted, subangular to rounded. 1.5m-3m Sand; light yellow-brown, medium to coarse, well sorted, subangular to subrounded, common iron stained. 3m-5m Sand; orange, coarse, well sorted, subangular to subrounded, iron stained. 5m-10m Sand; yellow, fine to coarse fining downward, poorly sorted, subangular to subrounded, iron stained, trace clay.	1812.3	South-west
61601765	0m-30m Quaternary sands and limestone 30m-133m Claystone - osborne fm 133m-311m Sandstone claystones	1812.4	South-west
61601432	0m-26.2m Yellow sand.	1826.7	South-west
61605690	0m-24.4m Sand with some thin layers of red and grey clay (16.8m and 23.5m hard thin layer ?clay and limestone) 24.4m-25.6m Water washed gravel. 25.6m-33.5m Sand.	1840.3	North-east
61601785	0m-17.7m Yellow sand 17.7m-18m Fine white sand 18m-18.6m Coarse white sand 18.6m-19.2m Water 19.2m-19.5m Clay bed 19.5m-19.8m Yellow sand with clay 19.8m-25m Yellow sand	1847.0	South-west
61602074	0m-2m Sand; light grey, coarse, well sorted, subangular to subrounded, minor dark fines, trace iron staining, garnet. 2m-6m Sand; orange, medium to coarse, subangular to subrounded, abundant iron stained, trace grey sand, dark fines and garnet as 2m, rare limonite pebbles to 6mm at 6m. 6m-8m Sand; pale yellow-white, medium to coarse, well sorted, subrounded, minor iron stained, dark fines, transition 6-10m. 8m-10.5m Sand; white, medium to coarse, well sorted, angular to rounded, subrounded to rounded at 12m, minor dark fines.	1848.5	South-west
61602073	0m-2m Sand; light grey, coarse, well sorted, subangular to subrounded, minor dark fines, trace iron staining, garnet. 2m-6m Sand; orange, medium to coarse, subangular to subrounded, abundant iron stained, trace grey sand, dark fines and garnet as 2m, rare limonite pebbles to 6mm at 6m. 6m-8m Sand; pale yellow-white, medium to coarse, well sorted, subrounded, minor iron stained, dark fines, transition 6-10m. 8m-12m Sand; white, medium to coarse, well sorted, angular to rounded, subrounded to rounded at 12m, minor dark fines. 12m-14m Sand; white, trace yellow as 16m, slightly clayey, fine to coarse, moderately sorted, subangular to subrounded, trace iron stained, dark fines, garnet and subrounded very coarse sand. 14m-16m Clay; yellow, sandy, fine to medium, well sorted, minor dark fines. 16m-18m Sand; yellow, trace clayey from above, fine to coarse, moderately sorted, subangular to rounded, mostly subrounded, minor dark fines. 18m-20m Sand; white, slight light brown-yellow as 18m, coarse, minor medium sand to very fine pebbles, moderately sorted, subrounded with pebbles rounded, common dark fines. 20m-22m Sand; yellow-orange, fine to medium, minor coarse sand to 12mm pebbles, poorly sorted, subrounded to rounded, common dark fines, trace iron stained.	1849.3	South-west
61602072	0m-2m Sand; light grey, coarse, well sorted, subangular to subrounded, minor dark fines, trace iron staining, garnet. 2m-6m Sand; orange, medium to coarse, subangular to subrounded, abundant iron stained, trace grey sand, dark fines and garnet as 2m, rare limonite pebbles to 6mm at 6m. 6m-8m Sand; pale yellow-white, medium to coarse, well sorted, subrounded,	1849.9	South-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	minor iron stained, dark fines, transition 6-10m. 8m-12m Sand; white, medium to coarse, well sorted, angular to rounded, subrounded to rounded at 12m, minor dark fines. 12m-14m Sand; white, trace yellow as 16m, slightly clayey, fine to coarse, moderately sorted, subangular to subrounded, trace iron stained, dark fines, garnet and subrounded very coarse sand. 14m-16m Clay; yellow, sandy, fine to medium, well sorted, minor dark fines. 16m-18m Sand; yellow, trace clayey from above, fine to coarse, moderately sorted, subangular to rounded, mostly subrounded, minor dark fines. 18m-20m Sand; white, slight light brown-yellow as 18m, coarse, minor medium sand to very fine pebbles, moderately sorted, subrounded with pebbles rounded, common dark fines. 20m-22m Sand; yellow-orange, fine to medium, minor coarse sand to 12mm pebbles, poorly sorted, subrounded to rounded, common dark fines, trace iron stained. 22m-23.5m Clay; orange to yellow, trace red, thin, very sandy, fine to coarse, poorly sorted, subrounded to rounded, minor dark fines. 23.5m-24m Sand; orange-yellow, coarse sand to 5mm pebbles, moderately sorted, subangular to subrounded, common iron stained, minor feldspar pebbles, trace limonite or laterite, dark fines. 24m-26m Sand; yellow-orange, coarse to 10mm pebbles, poorly sorted, subangular to subrounded, iron stained. Clay; yellow-brown, slightly sandy to sandy. 26m-28m Limestone; khaki, well cemented, very hard, sandy, coarse sand to 8mm pebbles, subrounded to rounded, minor small shell fragments, rare dark fines. 28m-29m Sandstone; dark grey, very hard, calcareous, fine to medium, trace to 6mm pebbles, poorly sorted, subrounded to rounded, trace fine shell fragments. Clay; dark grey, slightly sandy, fine to coarse, poorly sorted, angular to rounded, shell fragments up to 29m-34m Clay; black, driller reports trace green-black, noncalcareous, slightly sandy, very fine to medium, ?trace mica.		
61605764	0m-15.2m Yellow sand. 15.2m-17.7m Not logged. 17.7m-25.9m White sand.	1867.8	North-east
61601499	0m-20.7m Yellow sand. 20.7m-21m Clay. 21m-24.7m Yellow sand.	1873.3	South-west
61602079	0m-2m Sand; very light grey, fine to medium, well sorted, subrounded to rounded. 2m-5m Sand; light yellow-brown, trace calcareous, fine to medium, minor coarse, moderately sorted, subangular to subrounded. 5m-7m Sand; intermediate 2 and 4m; trace dark fines. 7m-9m Sand; light brown, slightly clayey, fine to medium, moderately sorted, subrounded to rounded, trace dark fines. 9m-10m Sand; light grey-brown, slightly clayey, medium, minor coarse, poorly sorted, subanglar to subrounded, trace dark fines. 10m-15m Sand; light grey, rare clay, medium, minor coarse, moderately sorted, subrounded, trace dark fines 12-13m, slightly clayey, subrounded to rounded. 14-15m, slightly clayey, fine to medium, minor coarse rounded. 15m-17m Clay; yellow to orange, trace greenish-orange, slightly sandy, very fine to fine. 17m-19m Sand; orange, very clayey, medium, trace coarse, moderately sorted, subrounded, trace feldspar, dark fines, cinders. 19m-21m Sand; orange, slightly clayey, medium to coarse, moderately subrounded, trace feldspar, dark fines. 21m-23m Sand; orange-brown, very fine sand to 20mm pebbles, mostly coarse to very coarse, very poorly sorted, subrounded, iron stained, abundant dark fines, minor feldspar. 23m-24m Sand; pale yellow-brown, very fine to fine, minor to coarse, moderately sorted, common dark fines. 24m-25m Sand; orange, slightly clayey, very fine to coarse, trace to 15mm pebble, very poorly sorted, subangular to subrounded. 25m-27.5m Sand; light yellow-brown, coarse to very coarse, moderately sorted subanglar to subrounded, some polished, minor feldspar, trace dark fines, trace red (?bauxite) claystone, trace mica. 27m, trace 20mm pebbles. 27.5m-29.5m Limestone; light yellow, moderately hard, slightly to very sandy, coarse to very coarse, moderately sorted, subrounded to rounded, trace poorly preserved shell fragments, one massive fragment with circular section (? pinnacle)	1879.3	South-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	at 29.5 clay; grey, slight 29.5m-30.3m Sandstone; dark grey and grey with minor yellow, non calcareous, fine to coarse, poorly sorted, subrounded to rounded, common hollows (? burrows), one shell fragment 30 x 30 x 8mm. Mudstone; black, very hard, subrounded pebbles to 20mm, sandy. 30.3m-31.7m Clay; black, rare sand, non calcareous.		
61602081	0m-2m Sand; pale grey, moderately rich in organic material, medium to coarse, moderately to well sorted, rounded, frosted quartz. 2m-4m Sand; creamy white, similar to 0-2m. 4m-9m Sand; orange-yellow at 4m becoming pale creamy yellow with depth, fine to coarse, moderately to poorly sorted, sub-rounded to rounded, frosted quartz and trace black minerals. 9m-10m Sand; creamy white, slightly clayey, fine to coarse, poorly sorted, sub-angular to rounded, frosted quartz and trace black minerals. 10m-15.3m Sand; creamy white, becoming very slightly clayey with depth, fine to coarse, predominantly fine, moderately to well sorted, sub-angular to rounded, frosted quartz and trace black minerals. 15.3m-19m Sand; bright orange-yellow, slightly clayey, fine to coarse, predominantly fine, moderately sorted, sub-angular to rounded, frosted quartz and trace black minerals. 19m-24m Sand/gravel; bright orange, fine to very coarse to fine pebbles, very poorly sorted, becoming generally coarser with depth and more bimodal in appearance, sub-angular to rounded quartz and trace black minerals and scattered white ? feldspar grains. 24m-25m Silt; khaki, very sandy, clayey, very fine grained, well sorted, sub-angular to subrounded quartz and abundant black minerals. 25m-26m Gravel; fine to small pebble size, very poorly sorted, sub-rounded to rounded quartz, trace black minerals. 26m-27m Sand; orange, slightly clayey, fine to very coarse to fine gravel, predominantly very coarse, poorly sorted, rounded quartz, trace black minerals. 27m-30.4m Gravel/limestone; fawn calcareous cemented gravel and minor shells to 29m. Fawn to grey calcareous cement gravel and scattered shell fragments to 30.4m, trace clay. ----------Unconformity---------- 30.4m-31.5m Siltstone; greenish-black, clayey, glauconitic.	1879.3	South-west
61602080	0m-2m Sand; very light grey, fine to medium, well sorted, subrounded to rounded. 2m-5m Sand; light yellow-brown, trace calcareous, fine to medium, minor coarse, moderately sorted, subangular to subrounded. 5m-7m Sand; intermediate 2 and 4m; trace dark fines. 7m-9m Sand; light brown, slightly clayey, fine to medium, moderately sorted, subrounded to rounded, trace dark fines. 9m-10m Sand; light grey-brown, slightly clayey, medium, minor coarse, poorly sorted, subangular, trace dark fines. 10m-15m Sand; light grey, rare clay, medium, minor coarse, moderately sorted, subrounded, trace dark fines 12-13m, slightly clayey, subrounded to rounded 14-15m, slightly clayey, fine to medium, minor coarse rounded. 15m-17m Clay; yellow to orange, trace greenish-orange, slightly sandy, very fine to fine. 17m-19m Sand; orange, very clayey, medium, trace coarse, moderately sorted, subrounded, trace feldspar, dark fines, cinders. 19m-21m Sand; orange, slightly clayey, medium to coarse, moderately subrounded, trace feldspar, dark fines. 21m-23m Sand; orange-brown, very fine sand to 20mm pebbles, mostly coarse to very coarse, very poorly sorted, subrounded, iron stained, abundant dark fines, minor feldspar.	1879.3	South-west
61606342	Null	1882.2	North
61601476	0m-10.7m Sand. 10.7m-13.7m Sand and clay. 13.7m-18.6m Sand (brown)	1883.1	West
61601169	0m-6.1m Yellow sand. 6.1m-15.9m White sand, medium. 15.9m-19.5m Coarse white sand. 19.5m-21.3m Coarse yellow sand, clay bars. 21.3m-28.4m Fine white sand. 28.4m-33.8m Yellow sands, clay bars, medium. 33.8m-37.2m Yellow sands, clay bars, medium.	1888.7	East
61601695	0m-9.1m Sand	1891.0	South-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
61601535	0m-15.5m Yellow sand. 15.5m-25m White sand clay base 84ft.	1897.0	South-west
61601494	0m-14m Sand.	1906.8	South-west
61605763	0m-37.8m Sand.	1914.6	North-east
61605762	0m-27.4m Yellow sand.	1916.7	North-east
61615625	Null	1917.4	South-west
61606093	0m-6.7m Liners (existing) 6.7m-11.9m Light yellow sand. 11.9m-16.1m Mashed stone yellow sand (very coarse)	1930.9	North
61601301	0m-4.9m Fine yellow sand 4.9m-11.6m Fine yellow sand and broken clay 11.6m-14.9m Coarse grey sand-contains salt	1943.0	West
61601678	0m-11.9m Sand 11.9m-12.8m Clay 12.8m-18.3m Sand	1944.8	South
61605369	Null	1945.0	North
61605772	0m-12.2m Well. 12.2m-15.2m Coarse white sand. 15.2m-21.3m Coarse yellow sand.	1947.2	North-east
61601679	0m-11.6m Sand yellow and at 38ft- water table 11.6m-12.2m Sand and clay 12.2m-15.2m Sand yellow fine 15.2m-21.3m Sand white coarse 21.3m-22.9m Grey clay with stones	1949.7	South
61601549	0m-18.3m Sand.	1956.1	South-east
61601433	0m-20.7m Sand.	1963.1	South
61601531	0m-29.6m Yellow sand.	1963.9	South-west
61601786	0m-10m Yellow sand 10m-16m Fine sticky white sand 16m-18.1m Fine sticky brown sand 18.1m-19.4m Band of coffee rock 19.4m-21m Coarse brown sand and small quartz pebbles	1964.5	South
61611158	Null	1968.1	South-east
61611157	Null	1968.1	South-east
61611162	Null	1968.1	South-east
61611159	Null	1968.1	South-east
61611161	Null	1968.1	South-east
61611164	Null	1968.1	South-east
61611160	Null	1968.1	South-east
61611163	Null	1968.1	South-east
61601692	0m-18m Yellow sand 18m-29.3m Fine yellow sand 29.3m-30m Fine grey sand with lumps of clay 30m-31.6m Coarser grey sand	1975.1	South-west
61605771	0m-10.4m Yellow sand. 10.4m-11m Clay red. 11m-16.1m Sand cr gr. 16.1m-17.4m Rock of clay red and grey. 17.4m-19.8m Sand med to fine. 19.8m-21.9m Sand cr gr.	1976.9	North-east
61615664	Null	1978.6	East
61601548	0m-0.9m Black sand. 0.9m-13.1m Yellow sand. 13.1m-13.4m Coffee rock. 13.4m-21.6m Coarser sand.	1984.2	South-east
61601661	0m-10m Sand	1984.3	West
61601668	Null	1988.0	South
61601175	0m-5.2m Sand. 5.2m-13.4m Sand and limestone, hard layers.	1992.3	South-east

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	13.4m-14.9m Sand. 14.9m-19.8m Rock and sand. 19.8m-20.4m Coffee rock. 20.4m-27.4m Sand. 27.4m-27.4m Clay.		
61601645	0m-7.9m Yellow sand 7.9m-11m Soft l/stone 11m-19.5m Yellow sand and white sand	1995.6	South-east
61605758	0m-23.2m Sand.	1997.6	North-east

Note: The use of the symbol "-" or "Null" indicates that no records were found.
Source: Groundwater Bores & Lithology

2.2 Groundwater and other Bores

Map 2.2 (2000m Buffer)

Groundwater Restricted Use Zones

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

Source: Groundwater Protection Areas and Groundwater Restricted Use Zones

Groundwater Salinity

Class	Salinity Value	Source	Distance (m)	Direction
Non-Saline (<3000mg/L)	< 500	Department of Water, Western Australia	0.9	South
Non-Saline (<3000mg/L)	500 - 1000	Department of Water, Western Australia	87.0	East

Source: Groundwater Salinity

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

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
Not identified	-	-	-	-	-	-	-

Note: The use of the symbol "-" or "Null" indicates that no records were found.
Source: Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes)

Section 3 Environmental Registers, Licences and Incidents

3.1 Contaminated Land Public Register

Map 3.1 (1000m Buffer)

Contaminated Sites

Register Type	Site Name	Address	Description	Details	Distance (m)	Direction
Remediated for restricted use	34603	LOT 1854 ON PLAN 208889	Hydrocarbons (such as from diesel and petrol) are present in groundwater beneath the site.	Null	27.7	South
Remediated for restricted use	63551	Approximate spatial representation of Canning Beach Road road reserve (Landgate PIN 11802369)	Hydrocarbons (such as from petrol and diesel) are present in soil and groundwater beneath the adjacent service station that extends to the east and south-east to beneath this site.	Null	47.3	South-west
Remediated for restricted use	63552	Approximate spatial representation of Canning Highway road reserve (Landgate PIN 1284137)	Hydrocarbons (such as from petrol and diesel) are present in soil and groundwater beneath the adjacent service station that extends to the east and south-east to beneath this site.	Null	47.4	South-west
Remediated for restricted use	18912	LOT 22 ON DIAGRAM 19618	Hydrocarbons (such as from petrol and diesel) are present in soil and groundwater beneath the site. Hydrocarbons in groundwater are present as a plume that extends off-site to the east and south-east.	Null	67.1	West
Remediated for restricted use	34605	Road Reserve	Hydrocarbons (such as from diesel and petrol) are present in groundwater beneath the site.	Null	169.4	South-west

Register Type	Site Name	Address	Description	Details	Distance (m)	Direction
		Mount Pleasant, WA, 6153				
Remediated for restricted use	71902	LOT 1855 ON PLAN 208889	Hydrocarbons (such as from diesel and petrol) are present in groundwater beneath the site.	Null	190.6	South-west
Remediated for restricted use	1159	LOT 1 ON STRATA PLAN 43064 (Strata Block)	Hydrocarbons (such as from diesel and petrol) and lead are present in soil beneath the site. Hydrocarbons (such as from diesel and petrol) are present in groundwater beneath the site and extending off site toward the Canning River.	Null	204.0	South-west
Remediated for restricted use	74803	LOT 51 ON PLAN 1751	Hydrocarbons (such as from oils) are present in soil beneath the site.	Null	285.9	West
Remediated for restricted use	75696	That portion of Lot 100 on Diagram 75742 as shown as Subject M on Deposited Plan 415521	Hydrocarbons (such as from transformer oil) are present in soils beneath the electrical transformer on this site.	Null	571.0	South-west
Contaminated - remediation required	17994	LOT 4 ON DIAGRAM 48045	Hydrocarbons (such as from petrol/diesel) have historically been detected in soil at the site. Hydrocarbons (such as from petrol/diesel) are present in groundwater as a plume beneath the service station.	Null	862.5	South-west

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

Table 3.1.1 Contaminated Land Public Register		
State	**Regulatory Body**	**Information included in this search (by state)**
ACT	EPA (Environment Protection Authority)	Contaminated Land Search Register of Contaminated Sites* (on request)
NSW	EPA (Environment Protection Authority)	Sites Notified as Contaminated Records of Notices
NT	EPA (Environment Protection Authority)	Contaminated Land Audit Pollution Abatement Notice
QLD	DES (Department of Environment and Science)	Contaminated Land Search (Environmental Management and Contaminated Land Registers)* (per lot)
SA	EPA (Environment Protection Authority)	Site Contamination Index Assessment Areas
TAS	EPA (Environment Protection Authority)	Regulated Sites and Premises Lutana and Parts of Hobarts Eastern Shore
VIC	EPA (Environment Protection Authority)	Priority Sites Register Pollution Abatement Notice
WA	DWER (Department of Water and Environmental Regulation)	Contaminated Sites Database

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

3.2 Licences, Approvals & Assessments

Licences

Map 3.2 (1000m Buffer)

Licence N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direct
W6459/2020	Works approval	Water Corporation	Water Corporation	Reserve 41516 60 Canning Beach Road, Lot 11312 on Deposited Plan 189373 and part of Canning Beach Road Reserve Certificate of Title Volume LR3000 Folio 695 As defined by the coordinates in Schedule 2	85A - Sewage pumping station	29.2	West

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.
**Results that appear as "not mapped" refer to licences that are applied to larger areas and/or without specific definition, such as waterways, forests etc. These are still identified in the search results but will not be shown within the map.*
Source: Licences, Approvals & Assessments

Audits, PRSA

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

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

Clean Up, Penalty Notices and Orders

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

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

Table 3.2.1 Licences, Approvals & Assessments		
State	**Regulatory Body**	**Information included in this search (by state)**
ACT	EPA (Environment Protection Authority)	Environment Protection Authorisation Search Environment Protection Agreement Search
NSW	EPA (Environment Protection Authority)	POEO Public Register (Environment Protection licences, Applications, Notices, Audits or Pollution studies and Reduction Programs)
NT	EPA (Environment Protection Authority)	Environment Protection Licences and Approvals
QLD	DES (Department of Environment and Science)	Environmental Authorities
SA	EPA (Environment Protection Authority)	Licences or Authorisations (Licences, Exemptions and Works Approvals) Environment Protection Orders (EPO) and Clean Up Orders (CUO)
TAS	EPA (Environment Protection Authority)	Regulated Sites and Premises

Table 3.2.1 Licences, Approvals & Assessments		
VIC	EPA (Environment Protection Authority)	Permissions Register (Operating Licence, Permit and Registration) Audit Reports
WA	DWER (Department of Water and Environmental Regulation)	Licences and Works Approvals

3.3a Sites Regulated by other Jurisdictional Body

Contaminated Legacy Areas

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

Includes known contaminated areas such as James Hardies Asbestos waste legacy areas, Pasminco Smelter and Uranium processing site.
Source: Contaminated Legacy Areas

Defence, Military Sites and UXO Areas

Site name	Type*	Details	Distance (m)	Direction
Not identified	-	-	-	-

**RCIP (Regional Contamination Investigation Program). UXO (Unexploded Ordnance Areas) .*
Source: Defence, Military Sites, and UXO Areas

Former Gasworks Sites

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

Source: Former Gasworks Sites

PFAS Sites

Site name	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-

Source: PFAS Sites

3.3b Other Potential Hazard Sources

Map 3.3b (500m Buffer)

Mines and Quarries (current and historical)

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

Source: Mines and Quarries

Landfills (current and historical)

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

National Pollutant Inventory (NPI)

Facility name	Address	Primary ANZSIC Class	Latest report	Distance (m)	Direction
Not identified	-	-	-	-	-

Source: Contaminated Legacy Areas

Section 4 Potentially Contaminated Areas

4.1 Potentially Contaminating Activities

Map 4.1 (200m Buffer)

Industries, businesses and activities that may cause contamination

Map ID	Site name	Category	Description	Address	Status*	Dist. (m)	Direction
2	Ampol Foodary Applecross	Petrol Stations and Fuel Terminals	Petrol Station	918 Canning Highway, Applecross	Current	67.2	West
1	Executive Risk Solutions	Depots and Storage Yards	Security service	1/7 Kintail Rd, Applecross WA 6153	Current	160.4	South-west
3	Rowing WA	Depots and Storage Yards	Rowing club	4 The Esplanade, Mount Pleasant WA 6153	Current	190.8	South-west

**Status: Information is current as when this report was created.*
The operational status of the business is determined using the available data sources and does not indicate real-time conditions at the site.
Current: business is operating on the day this report was issued.
Former: business that have been closed or discontinued within 2 years from the date of this report.
Source: Potentially Contaminated Areas, Activities (PCA)

Categories included in this search. (Notifiable activities)		
Abattoirs	Explosives and Dangerous Goods	Paint Industries
Abrasive Blasting	Extractive Industries	Petrol Stations
Agriculture / Horticulture	Fire and Rescue	Pharmaceuticals
Airports	Food Manufacturing	Port and Marina Operations
Asbestos	Foundry, Smelting or Refining	Power Plants
Asphalt or Bitumen	Fuel Terminals & Depots	Printing and Photography
Batteries	Glass, Ceramics and Plastic	Rail Industry and Associated Activities
Breweries / Distilleries	Gun, Pistol or Rifle Ranges	Rubber and Tyre
Cement, Concrete or Lime	Hospitals and Research Facilities	Storage Tanks
Cemeteries	Landfill Sites	Substations and Switching Stations
Chemicals	Livestock Dips	Textiles and Tannery

Categories included in this search. (Notifiable activities)		
Coal Yards	Mechanical and Automotive	Timber, Pulp and Paper Works
Depots and Storage Yards	Metal Fabrication and Treatments	Waste and Recycling Facilities
Dry Cleaners	Oil and Gas	Wastewater Treatment Facilities
Electrical or Electrical Components	Other Infrastructure Facilities	-

Industries, businesses, and activities identified as having an increased likelihood of causing contamination.

The industries and business activities listed above have been identified as having an increased likelihood of causing contamination and have been identified through published state and national guidelines and regulations. These industries are noted due to their potential to store or use substances that could cause contamination to the surrounding environment if not managed appropriately. The identification of these activities does not imply the presence of contamination at the site.

The records identified are based on the reported business activity and have not been assessed based on any current or previous site inspection. Please note that records not identified within this section (due to error or unforeseen omission) does not necessarily mean that the screened area is not potentially contaminated or free of any risks.

4.2 Historical Business Directories

(not mapped)

YEAR	Activity	Name	Address	Positional accuracy	Distance (m)	Direction
1990	MOTOR ENGINEERS & REPAIRERS	THORP'S AUTO SERVICE	918 Canning Hwy Aplcrs Western Australia WA AUSTRALIA	Address	98.6	West
1990	AIR CONDITIONING - AUTOMOTIVE	THORP'S AUTO SERVICE	918 Canning Hwy Aplcrs APPLECROSS WA AUSTRALIA	Address	98.6	West
1990	MOTOR ENGINEERS & REPAIRERS-LOCALITY GUIDE - Applecross	THORP'S AUTO SERVICE	918 Canning Hwy Aplcrs APPLECROSS WA AUSTRALIA	Address	98.6	West
1970	Photographers-Portrait & General	Falls J M	57 Canning Beach Road Applecross WA AUSTRALIA	Address	102.6	South-west
1970	Motor Garages & Service Stations	Henson Alan C	55 Canning Beach Road Applecross WA AUSTRALIA	Address	113.3	West
2005	Gardeners; Landscape Contractors & Designers	Jansen's Gardening Services	8 Moreau Mews, APPLECROSS,WA,6153	Address	139.9	South-west
1970	Fruiterers & Greengrocers	S & S Fruit Markets Pty Ltd	916 Canning Highway Canning Bridge WA AUSTRALIA	Address	149.9	West
1990	MOTOR SERVICE STATIONS & GARAGE	SOLO OIL AUSTRALIA PTY LTD	Canning Bridge 916 Canning Hwy Canning Bridge WA AUSTRALIA	Address	149.9	West
1990	BOAT & YACHT EQUIPMENT	Trailezy Sales	914 Canning Hwy Aplcrs APPLECROSS WA AUSTRALIA	Address	149.9	West
1990	BOAT & YACHT SALES	WA Boat Sales	914 Canning Hwy Cng Br Western Australia WA AUSTRALIA	Address	149.9	West
1990	OUTBOARD MOTORS	Trailezy Sales	914 Canning Hwy Aplcrs APPLECROSS WA AUSTRALIA	Address	149.9	West
2005	Boat & Yacht Builders & Repairers	Trailezy Boats Pty Ltd	914 Canning Hwy CANNING BRIDGE APPLECROSS	Address	149.9	West
2005	Boat & Yacht Builders & Repairers	Trailezy Boats Pty Ltd	914 Canning Hwy,CANNING BRIDGE APPLECROSS,WA,6153	Address	149.9	West
2010	Boat & Yacht Builders	Wa Boat Sales	914 Canning Hwy MOUNT PLEASANT 6153 WA	Address	149.9	West
2015	Outboard Motor Sales Service & Repairs	Trailezy Sales	914 Canning Hwy Canning Bridge WA 6153	Address	149.9	West
2015	Boat & Yacht Builders	Trailezy Boats Pty Ltd	914 Canning Hwy Canning Bridge WA 6153	Address	149.9	West
1990	MOTOR CAR & TRUCK CLEANING SERVICES	CANNING BRIDGE CAR SPA	2 The Esplanade Aplcrs APPLECROSS WA AUSTRALIA	Address	161.1	South-west

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

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

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

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

Section 5 Natural Hazards

5.1 Fire Hazard

Map 5.1 (500m Buffer)

Bushfire Prone Areas

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

Source: Fire Hazards

Bushfire History

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

Source: Fire Hazards

5.2 Flood Hazard

Map 5.2 (500m Buffer)

Flood Planning Area

Type	Name	Details	Distance (m)	Direction
Flood Prone Area - 1 in 100 (1%) AEP floodplain	1 in 100 AEP Floodplain Development Control Area - Flood Plain Management DWER	Councils develop Flood Planning Areas (FPAs) as part of Flood Overlay mapping to guide future building and development in flood prone areas. The FPAs are designed to recognise the flood hazard for different flooding types.	0.0	Onsite

Type	Name	Details	Distance (m)	Direction
Flood Prone Area - 1 in 10 (10%) AEP floodplain	Perth (Fremantle to Walyunga & Canning Bridge to Brookton Highway) - Flood Plain Management DWER	Councils develop Flood Planning Areas (FPAs) as part of Flood Overlay mapping to guide future building and development in flood prone areas. The FPAs are designed to recognise the flood hazard for different flooding types.	0.0	Onsite
Floodplain - Designated flood event floodplain	Perth (Fremantle to Walyunga & Canning Bridge to Brookton Highway) - Flood Plain Management DWER	Councils develop Flood Planning Areas (FPAs) as part of Flood Overlay mapping to guide future building and development in flood prone areas. The FPAs are designed to recognise the flood hazard for different flooding types.	0.0	Onsite

Source: Flood Hazard

Other Flood Studies

Type	Name	Details	Distance (m)	Direction
<3% of the map unit has a moderate to high hazard	Soil landscape land quality - Flood Risk (DPIRD-007)	Flood hazard is a combination of frequency of flooding, the flood depth, and the speed or velocity at which the water can travel.	0.0	Onsite

Source: Flood Hazard

Flood History

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

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

5.3 Erosion Hazard

Map 5.3 (500m Buffer)

Erosion Hazard

Category	Type	Details	Distance (m)	Direction
Landslip Erosion Risk	<3% of map unit has a moderate to high hazard	Negligible	0.0	Onsite
Water Erosion Risk	<3% of map unit has a high to extreme water erosion risk	Negligible	0.0	Onsite
Wind Erosion Risk	30-50% of map unit has a high to extreme wind erosion risk	Moderate	0.0	Onsite
	>70% of map unit has a high to extreme wind erosion risk	Very High	128.4	South-west

Source: Erosion Hazard

Land Insight

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Product Guide

Environmental Information Report

23 Apr 2025

Data Sources

NLUA - The Land Insight National Land Use Atlas (NLUA)

Land Insights' NLUA is a unique, proprietary database, meticulously curated from over a decade's worth of research and hundreds of thousands of diverse information sources. NLUA provides a comprehensive overview of land usage and potential hazards, drawing from a wide array of reliable sources. These include verified Council Records, Historic Zoning Maps, Topographic and Parish Maps, and technically published reports.

NLUA integrates thoroughly researched information extracted from published reports, publications, and technical studies. It also incorporates Land Insight's proprietary machine learning process, which identifies land anomalies, patterns, and changes through aerial imagery interpretations.

Leveraging advanced technologies, NLUA verifies the provenance, authenticity, and precision of its data. This database undergoes rigorous validation procedures carried out by scientists, quality assurance teams, and technical experts. This ensures its accuracy and reliability before publication. For more information on methodologies and further inquiries, please contact the Land Insight teams at support@landinsight.co.

Section 1 - Property Setting

Sensitive Receptors

National – Google. Nearmap. @ Land Insight National Land Use Atlas (NLUA). Points of Interest - © OpenStreetMap. Australian Business Datalist, Australian Schools Database - @ Australian Business Datalist ABDL (with permission). Cadastre. National - The digital cadastral boundaries and their legal identifiers have been derived from the relevant bodies from each Australian State and Territory jurisdiction combined by Land Insight & Resources.

Topographic data and Contours. National - The digital contours data and elevation information have been derived from the relevant bodies from each Australian State and Territory jurisdiction combined by Land Insight & Resources. National - Catchments, Streams, Aquifers, Storages, Wetlands and Man-made Structures that make up the hydrological system - © Geoscience Australia. Parks and National and State Forest Data © Department of Agriculture, Fisheries and Forestry.

Planning Controls and Overlays

Zoning, Planning Overlays and Other Planning Information

The digital planning information have been derived from the relevant bodies from each Australian State and Territory jurisdiction combined by Land Insight & Resources.

Mine subsidence districts - © DFSI Subsidence Advisory NSW. ACT - ACT Territory Plan and Land Use Zones and ovleryas © ACT Government Environment, Planning and Sustainable Development Directorate – Environment. NSW – NSW Environmental Planning Instruments, Land Use Zoning, Local Environmental Plan - © State Government of NSW and NSW Department of Planning, Housing, and Infrastructure. NT - NT Planning Scheme, Land Use Zones © NT Government Department of Infrastructure, Planning and Logistics. QLD - Land use mapping series, Land Use in QLD @ QLD Environment, Science, and Innovation. QLD zoning information, various LGA Councils. SA - Land Development Zones, Planning and Design Code Zones and Overlays – © SA Government Department for Trade and Investment. TAS - Tasmania Planning Scheme, Zoning and Overlays, theLIST ©State of Tasmania. @ Department of Natural Resources and Environment Tasmania. VIC - Tasmania Planning Scheme, Zoning and Overlays, theLIST ©State of Tasmania. @ Department of Natural Resources and Environment Tasmania. WA - Local Planning Scheme and Region Scheme, Zones, and Reserves, © WA Government Department of Planning, Lands and Heritage.

Heritage

Commonwealth Heritage List, National Heritage List and World Heritage Area

AUS - World, Commonwealth, and National Heritage Areas – World Heritage List, UNESCO. Australia's World Heritage List, © Australian Government Department of Sustainability, Environment, Water, Population and Communities. @ Department of Climate Change, Energy, the Environment and Water.

State and Local Heritage Registers

ACT - ACT Heritage Sites © ACT Government Environment, Planning and Sustainable Development Directorate – Environment. NSW - NSW EPI Heritage, NSW Heritage State Curtilage @ NSW Department of Premier and Cabinet, Heritage Council of NSW. NT - Heritage Register in NT, NT Town Planning Zones Heritage - © NT Government of Australia through Department of Tourism, Sport, and Culture. QLD - Queensland Heritage register boundaries, Queensland Local Heritage. © QLD Government Department of Environment and Science. Data from various local councils compiled by Land Insight Research Team (LIRT). SA - SA Heritage Places, SA Conservation State Hertiage Areas, SA Conservation State Heritage Areas, Aboriginal Heritage in SA @Governemtn of South Australia © SA Government Department for Trade and Investment, Department for Environment and Water. TAS - Heritage Tasmania Features theLIST ©State of Tasmania. VIC - VIC Heritage Inventory, VIC Sensitivity Public, VIC Heritage Register © VIC Government Department of Energy, Environment and Climate Action; Department of Premier and Cabinet. WA - WA Heritage Areas, WA Heritage Council Local Heritage Survey, WA Heritage Council State Heritage Survey, WA Aboriginal Heritage Places © WA Government Department of Planning, Lands and Heritage.

Soil and Land Use Information

Soil landscape

Soil Mapping, Information & Landscape - Digital Atlas of Australian Soils, Bureau of Rural Sciences (BRS); Commonwealth Scientific and Industrial Research Organisation (CSIRO) Australian Soil Resource Information System (ASRIS). CSIRO (2024): Australian Soil Resource Information System Website. v1. CSIRO. Data Collection. https://doi.org/10.25919/pdct-9a97

Australian Soil Resource Information System - Australian Soil Classification @ Geoscience Australia, ASRIS Australian Soil Classification @ CSIRO Soil and Landscape Information of Australia @ CSIRO. Australian national map layers, Atlas of Australian Soils - @ ABARES Australian Bureau of Agricultural and Resource Economics and Sciences.

ACT Soil Landscapes, Soil Landscapes of the Canberra 1:100,000 © Australian Capital Territory Government, @ State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. NSW Great Soil Group (GSG) Soil Type, Australian Soil Classification (ASC) soil type, Strategic Regional Land Use and Soil Profiles, 1:100 000 Soil Landscape Series, 1:250 000 Soil Landscape Series © State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. NT Northern Territory Land Systems compilation 1:1 000 000, 1:250 000 @ Environment, Parks, and Water Security. QLD Land systems series, Soil Series and Soil and land resource information © The State of Queensland. SA Land Systems & Soil Types, Soils of South Australia @ Department for Environment and Water. TAS Soil Maps of Tasmania 1:100 000 various regions. Dominant Soil Order TAS @ Department of Natural Resources and Environment Tasmania. VIC Victorian Soil type mapping, VIC Land units (various regions), Victorian Land Use Information System, Land Systems of Victoria at 1:100 000 and 1:250 000 @ Department of Energy, Environment and Climate Action. WA Soil Landscape Mapping - Best Available, Soil Landscape Mapping – Systems, WA Soil Group @ Department of Primary Industries and Regional Development.

Soil salinity

ACT - Hydrogeological Landscapes, Soil Landscapes of the Australian Capital Territory @ actmapi ACT gov. NSW – Hydrogeological landscapes mapping, Sydney Metropolitan Western Study Area Hydrogeological Landscapes; New South Wales – Dryland Salinity Assessment 2000 – Assessment of Dryland salinity extent 2020 - © State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water; Australian Bureau of Agricultural and Resource Economics and Sciences. NT - Land Suitability Guidelines @ Department of Infrastructure, Planning and Logistics NT. QLD - Salinity in Queensland @ Environment, land, and water QLD. SA - Land salinity, Dryland salinity, Watertable and non-watertable @ Department for Environment and water SA. TAS - Vulnerable Soils: Salinity Hazard @ thelist Land Tasmania. VIC - Victorian Dryland Salinity Assessment 2000 - Australian Bureau of Agricultural and Resource Economics and Sciences. WA - Dryland salinity in Western Australia - © Department of Primary Industries and Regional Development's Agriculture and Food.

Acid Sulfate Soils

National, State and Local Acid Sulfate Soils Registers

AUS - Acid sulfate Soils - Atlas of Australian Acid Sulphate Soils @ CSIRO (2024): Australian Soil Resource Information System Website. v1. CSIRO. ACT - Environmental Planning Instrument (Acid Sulfate Soils) - © State Government of NSW and NSW Department of Planning, Housing, and Infrastructure. NSW - Environmental Planning Instrument (Acid Sulfate Soils); Land and Soil Capability Mapping for NSW - © State Government of NSW and NSW Department of Planning, Housing, and Infrastructure; © State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. NT – Acid Sulfate Soils of the Darwin Region; Northern Territory Land Systems (compilation of north_250 and south_1M) - © Northern Territory Government of Australia Environment, Parks, and Water Security. QLD – Acid sulfate soils series - © The State of Queensland Environment and Science. SA – Acid Sulfate Soil Potential - @ Government of South Australia Department for Environment and Water. TAS – Marine Acid Sulfate Soils; Inland Acid Sulfate Soils; Coastal Acid Sulfate Soils; Acid Sulfate Soils - Resource Management and Conservation. VIC - Coastal Acid Sulphate Soils - Department of Jobs, Skills, Industry and Regions. WA - Acid Sulfate Soil Risk Map 100K; Soil landscape land quality - Subsurface Acidification Risk - @ Department of Water and Environmental Regulation; Department of Primary Industries and Regional Development.

Geology and Topography

Naturally Occurring Asbestos NOA

Naturally Occurring Asbestos in NSW © State of New South Wales and Department of Planning and Environment; WA Management of Asbestos In Mining Operations Department of Industry and Resources; SA Carbonate-hosted asbestos occurrences in South Australia: review of geology and implications for mesothelioma [Hendrickx, M.]; Mapping of naturally occurring asbestos in NSW [NSW Trade & Investment, Division of Resources & Energy]

Geology

ACT - New South Wales Seamless Geology dataset (latest version 2.3), various geology data sources 1:25K to 1:100K - © Department of Regional NSW. NSW - New South Wales Seamless Geology dataset (latest version 2.3) - © Department of Regional NSW. NT - Geological digital data 1:100 000 sheet - © Commonwealth of Australia (Geoscience Australia). QLD - Queensland geology detailed surface geology 1:100K and Queensland geology state surface geology 1:2M - © State of Queensland (Department of Resources). SA - 1:100K Geology (surface geology) - © SA Government Department of Energy and Mining, Customer Services. TAS - 1:25K and 1:250K Geology Data and Maps - © TAS Government Department of Infrastructure, Energy, and Resources (Mineral Resources Tasmania). VIC – Geological units represented as two dimensional polygons (1:50,000), and Geological units represented as two dimensional polygons (1:250,000) - © VIC Government Department of Jobs, Skills, Industry and Regions. WA - 1:50K Geological series map, 1:100K Geological series map, and 1:500K State interpreted bedrock geology - © WA Government Department of Mines, Industry Regulation and Safety.

Section 2 - Hydrogeology

GDE & Hydrogeology Constraints

Groundwater Aquifers

Groundwater Aquifers - The National Hydrogeological Inventory, Commonwealth of Australia (Geoscience Australia). Australian Hydrological Geospatial Fabric @ Department of Climate Change, Energy, the Environment and Water, National Aquifer Network © Commonwealth of Australia (Bureau of Meteorology)

Groundwater Protection Areas and Groundwater Restricted Use Zones

Groundwater Protection Areas – © State of New South Wales and Department of Planning and Environment, NT Environment, Parks and Water Security, QLD Department of Resources, SA Environment Protection Authority (EPA), TAS TasWater, VIC Department of Environment, Land, Water & Planning; WA Department of Water and Environmental Regulation. Groundwater Licences - The Perth Groundwater Atlas and Department of Water (DoW) database © State of Western Australia. NSW - Groundwater Restricted Use Zones: EPI Groundwater Vulnerability, Botany Groundwater Management Zone, Williamtown Management Area, UPSS Environmentally Sensitive Zone, EPI Drinking Water Catchments – EPA NSW; NSW Department of Planning, Industry and Environment. NSW Temporary Water Restrictions Order Botany Sands groundwater - @ The NSW Department of Industry—Lands & Water. NT - Groundwater Restricted Use Zones: NT Water Protection Areas - Department of Environment, Parks, and Water Security. QLD - Groundwater Restricted Use Zones: Water Licences, Groundwater Management Areas, Surface Water Management Areas, Water Plan Catchments - Department of Resources. SA - Groundwater Restricted Use Zones: EPA Groundwater Prohibition Area – EPA SA. TAS - Groundwater Restricted Use Zones: Drinking Catchments, Water Management Plan Areas, Water Districts. VIC - Groundwater Restricted Use Zones: GMA, Groundwater Resources, Water Supply Protection Areas, Water Asset Database, Groundwater Catchments – © EPA Victoria. WA -Groundwater Restricted Use Zones: Gnangara Groundwater Protection, Jandakot Groundwater Protection, Groundwater Areas, PDWSA, Water Licences – Department of Water and Environmental Regulation.

Wetlands

Ramsar Wetlands of Australia - Directory of Important Wetlands in Australia (DIWA) – DCCEEW Department of Climate Change, Energy, the Environment and Water. ACT - Wetland Mapping - © State of New South Wales and Department of Planning and Environment. Important Wetlands - © Australian Capital Territory. NSW - Wetlands, Ramsar Sites, and various sources – © State of New South Wales and Department of Planning and Environment. NSW Environmental Planning Instruments (Wetlands, Coastal Wetlands), © State Government of NSW and NSW Department of Planning, Housing, and Infrastructure NT - Wetlands and Ramsar Sites - @ Department of Environment, Parks, and Water Security. QLD - Local Significant Wetlands and Ramsar Sites - @ Department of Environment and Science. SA - Ramsar Wetlands - @ Department for Environment and Water. TAS - Ramsar Wetlands - @ Land Tasmania. VIC - Victoria Wetlands and Ramsar Sites, @ Department of Energy, Environment and Climate Action. WA - Geomorphic Wetlands (various), Consanguineous Wetlands Suites, Ramsar Sites, @ Department of Biodiversity, Conservation and Attractions.

Groundwater Dependent Ecosystems

Groundwater Dependent Ecosystems (GDE) – Terrestrial (subsurface) and Aquatic (surface) - © Commonwealth of Australia (Bureau of Meteorology).

Groundwater Bores & Lithology details

Groundwater bores and lithology - National Groundwater Information System (NGIS) Dataset. - © Australian Government Bureau of Meteorology. © Water NSW. Groundwater Bores – © Australian Capital Territory. VIC Groundwater Sites, Domestic and stock groundwater bores @ DELWP. WA GW Bores, @ Department of Agriculture Resource Management. SA WaterConnect @ State of South Australia.

Groundwater Salinity

AUS - Groundwater Salinity © Commonwealth of Australia, Bureau of Meteorology. Groundwater Salinity - ACT - Canberra Hydrogeological Landscape, Hydrogeological Landscape Reports, Salinity, ACTmapi @ ACT gov. NSW – Salinity locations and mapping, Hydrogeological landscapes, @ NSW Environment and Heritage. NT - Dryland Salinity Hazard of the Northern Territory, @ Environment, Parks, and Water Security NT. QLD - Salinity in Queensland, @ QLD gov. SA - Annual ground water salinity sampling, @ Landscape South Australia. TAS - Groundwater Salinity - © Department of Natural Resources and Environment Tasmania. VIC - Groundwater Salinity - © State Government of Victoria. Groundwater Salinity - Department of Water and Environmental Regulation. WA – Salinity & Dryland salinity in Western Australia, @ Department of Agriculture and Food WA.

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

Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes) – NSW Planning & Environment (Resources & Energy); Department of Energy, Environment and Climate Action. Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes) – © The State of Queensland, © Commonwealth of Australia (Geoscience Australia), Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes, Drillholes within South Australia, Mineral Drillholes) - @ SA Government Department for Environment and Water; Department for Energy and Mining. Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes) - Department of Water and Environmental Regulation, © Government of Western Australia Department of Mines, Industry Regulation and Safety. Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes), various sources @ Land Insight National Land Use Atlas (NLUA).

Section 3 - Environmental Registers, Licences and Incidents

Contaminated Land Public Register

ACT - Register of Contaminated Sites, Contaminated Land Search (per request) - © Australian Capital Territory, Environment Protection Authority. NSW - Sites Notified as Contaminated, Records of Notices - © State of NSW and the NSW Environment Protection Authority. NT - Contaminated Land Audit, Pollution Abatement Notice - Northern Territory Environment Protection Authority. QLD - Contaminated Land Search (Environmental Management and Contaminated Land Registers – per lot) - © The State of Queensland (Department of Environment, Science, and Innovation). SA - Site Contamination Index, Assessment Areas - © Government of South Australia Environment Protection Authority. TAS - Regulated Sites and Premises, Lutana, and Parts of Hobarts Eastern Shore - © The Crown of Tasmania, Environment Protection Authority. VIC - Priority Sites Register, Pollution Abatement Notice - © EPA Victoria. WA - Contaminated Sites Database - © Government of Western Australia, Department of Water and Environmental Regulation.

Licences, Approvals, & Assessments

ACT - Environment Protection Authorisation Search, Environment Protection Agreement Search - © Australian Capital Territory, Environment Protection Authority. NSW - POEO Public Register - © 2023 State of NSW and the NSW Environment Protection Authority. NT - Environment Protection Licences - © Northern Territory Environment Protection Authority. QLD - Environmental Authorities - © The State of Queensland (Department of Environment, Science, and Innovation). SA - Licences or Authorisations, Environment Protection Orders (EPO), Clean-Up Orders (CUO), Assessment Areas - © Government of South Australia Environment Protection Authority. TAS - Regulated Premises - © The Crown of Tasmania, Environment Protection Authority. VIC - Permissions Register, Audit Reports - © EPA Victoria. WA - Licences and Works Approvals - © Government of Western Australia, Department of Water and Environmental Regulation.

Sites Regulated by Other Jurisdictional Body

Contaminated Legacy Areas

Contaminated Legacy Areas mapped by Land Insight Research team @ Land Insight National Land Use Atlas (NLUA). James Hardie Asbestos Waste Contamination Legacy @ The Australian Asbestos Network, Loose-fill Asbestos register @NSW Department of Climate Change & Water. Loose Fill Asbestos @ ACT Government. Asbestos Register @NT Government. Asbestos Register @ QLD Government. Asbestos Safework @ Government of South Australia. Asbestos Safety WorkSafe @Tasmania Government. Asbestos in Victoria @State Government of Victoria. Asbestos – contaminated sites @ Government of Western Australia Department of Health. National Pollutant Inventory - © Commonwealth of Australia, Department of Agriculture, Water, and the Environment. Parramatta River Catchment Land Use Areas - Compiled by Land Insight derived from Parramatta River Estuary Processes Study (2010); and @ Land Insight National Land Use Atlas (NLUA).

Mines and Quarries (current locations, derelict and abandoned mines and quarries, mine shaft)

Current and Historical location of mines and quarries, derelict mine locations mapped by Land Insight Research team @ Land Insight National Land Use Atlas (NLUA). Australia's abandoned mines: rehabilitated @Australian Geographic. List of mines, List of open-pit mines @ Wikipedia. Goldfields places & Maps- National Library of Australia and State Libraries. A Geospatial Database for Effective Mine Rehabilitation in Australia – Monash University, various authors. Inventory of abandoned mines in Australia @ Australian Government AusIndustry. National Heritage Places - Coal Mines Historic Site @Department of Climate Change, Energy, the Environment and Water. Legacy Mines Program © State of New South Wales through Regional NSW. Map of NSW Mines @NSW Minerals Council. Legacy Mines @ Northern Territory Government. Abandoned mine remediation projects - @ The State of Queensland Government. Map of abandoned mines in Queensland. Queensland's quarry operations @ QLD Government Department of Resources. South Australian Mining History @ Mining Heritage, Former Mines, SARIG @ Government of South Australia @ EPA SA. Mineral Resources Tasmania @ Department of State Growth Mineral Resources Tasmania, Abandoned Mines Rehabilitation in Tasmania @ Department of Infrastructure, Energy and Resources. Tasmania Goldfields dataset. Mineral Occurrences Data @ Tasmania Government. Rehabilitating Mines @ Copyright Victorian Auditor-General's Office, @ Mining Legacies. Historical Mining Activities @ VIC Department of Jobs, Skills, Industry and Regions. Heritage Victoria. Mineral Assessment @ VIC Department of Natural Resources and Environment. Abandoned Mines, Inactive And Abandoned Mine Land Reports - @ WA Department of Mines, Industry Regulation and Safety. Abandoned Mines Program @ WA Department of Energy, Mines, Industry Regulation and Safety. Mines and Mineral Deposits (MINEDEX) - @ WA Department of Energy, Mines, Industry Regulation and Safety

Defence, Military Sites, and UXO Areas

Current and Historical Defence and Military sites mapped by Land Insight Research team @ Land Insight National Land Use Atlas (NLUA). Department of Defence 3 Year Regional Contamination Investigation Program (RCIP) © Commonwealth of Australia, Department of Defence. Defence Sites © Australian Government - Various sources and Department of Defence © Commonwealth of Australia. @ Land Insight National Land Use Atlas (NLUA). National Unexploded Ordnance Program (UXO) @ Australian Government Defence.

Former Gasworks Sites

AUS – Gasworks sites (Various), @ National Trust of Australia, @ National Library of Australia, @ Pocket Oz Sydney Guide, @ wikipedia. Former gasworks site locations mapped by Land Insight Research team @ Land Insight National Land Use Atlas (NLUA). Archaeological database and records © New England Archaeology. Images, Wikipedia, @Flickr images. The historical marker database. ACT – Gaswork sites @ ACT gov. NSW – Former gasworks sites @ EPA NSW, @ NSW Department of Environment and Conservation, Heritage NSW. NT - Gaswork sites @ EPA NT. QLD - Gaswork sites @ DES QLD. SA - Gaswork sites @ EPA SA, @ SA Heritage Places Database Search (maps SA). TAS - Gaswork sites @ EPA TAS, @ Ligthscape Tasmania. VIC – Gasworks sites,

@EPA VIC, @ Development Victoria. WA - Gasworks sites, @EPA WA, @ Department of Water and Environmental Regulation WA.

PFAS sites

AUS – National PFAS Investigation Program – State-wide PFAS Investigation Program @Australian Government, Department of Infrastructure, Transport, Regional Development, Communications and The Arts. PFAS research @ Land Insight National Land Use Atlas (NLUA).

PFAS Investigation and Management Program - PFAS contamination at Department of Defence sites, @ Defence Government. @ Australian Government Defence. Metropolitan Fire Brigade stations. Potential historical use of PFAS @ Australian Government.

PFAS Taskforce. Airservices Australia National & PFAS Management Program, Airservices Australia.

ACT - Potential PFAS contaminated sites in the ACT - © ACT Environment Protection Authority. NSW - The NSW Government PFAS Investigation Program, © State of NSW and the NSW Environment Protection Authority. NT – PFAS National Environmental Management Plan (NEMP) @ NT EPA. QLD - PFAS site investigations, PFAS in QLD, @ QLD government. SA - Per- and poly-fluoroalkyl substances (PFAS), @SA EPA. TAS - PFAS Contamination, @ TAS EPA. VIC - PFAS management sites, PFAS contamination at Department of Defence sites @ VIC EPA. WA - PFAS Investigations in Western Australia, @ WA government, @ WA DWER.

Section 4 - Potentially Contaminated Areas

Potentially Contaminated Areas, Activities (PCA) – Notifiable Activities Locations and Description

The research database includes Potentially Contaminating Activities or businesses, industries, and activities that have been identified as having an increased likelihood of causing contamination. Many of these are considered notifiable activities, or activities that require regulation to operate. This database is meticulously curated from a variety of information sources and undergoes rigorous validation procedures carried out by our team of scientists, quality assurance professionals, and technical experts, ensuring its accuracy and reliability. The PCA database systematically identifies and classifies site locations into fifty differing categories, including:

Abattoirs, Abrasive Blasting, Agriculture/Horticulture, Airports, Asbestos, Asphalt or Bitumen, Batteries, Breweries/Distilleries, Cement, Concrete or Lime, Cemeteries, Chemicals, Coal Yards, Depots and Storage Yards, Dry Cleaners, Electrical or Electrical Components, Explosives and Dangerous Goods, Extractive Industries, Fire and Rescue, Food Manufacturing, Foundry, Smelting or Refining, Fuel Terminals & Depots, Glass, Ceramics and Plastic, Gun, Pistol or Rifle Ranges, Hospitals and Research Facilities, Landfill Sites, Livestock Dips, Mechanical and Automotive, Metal Fabrication and Treatments, Oil and Gas, Other Infrastructure Facilities, Paint Industries, Petrol Stations, Pharmaceuticals, Port and Marina Operations, Power Plants, Printing and Photography, Rail Industry and Associated Activities, Rubber and Tyre, Storage Tanks, Substations and Switching Stations, Textiles and Tannery, Timber, Pulp and Paper Works, Waste and Recycling Facilities, Wastewater Treatment Facilities.

Potentially Contaminating Activities and Locations (PCA) - © Google; Nearmap data; @ Datajet Australia Pty Ltd – with permission and @ Land Insight National Land Use Atlas (NLUA).

The Potentially Contaminating Activities (PCA) is a unique database proprietary to Land Insights. Please note that <u>not all</u> sources are included; only the most significant or larger databases are referenced for brevity. Individual research on each of these sources has not been included due to the comprehensive nature of the list.

Airports – Designated international airports in Australia @ Department of Infrastructure, Transport, Regional Development, Communities, and the Arts Australian Gov. List of airports Australia @ Wikipedia. Australia Airports Map @ Sydney-australia biz

Catte Dips: Cattle Dip Site Locator Northern Rivers Region - © State of New South Wales through NSW Department of Industry; and @ Land Insight National Land Use Atlas (NLUA).

Dry cleaners: Dry cleaners @ Drycleaning Institute of Australia; Lawrence Dry Cleaners Locations @ Lawrence Dry Cleaners, and @ Land Insight National Land Use Atlas (NLUA).

Landfill Sites: NSW – Landfill sites @ EPA NSW. QLD - Location of waste sites | Environment, land and water, Closed landfill sites @ QLD gov. SA - Landfill map, EPA SA. TAS – Landfills @ EPA TAS. VIC – Victorian Landfill Register - © EPA Victoria. Waste and Recycling Facilities: National Waste Management Facilities - © Commonwealth of Australia (Geoscience Australia), Australia's waste and resource recovery infrastructure @ DCCEEW @ Land Insight National Land Use Atlas (NLUA).

Petrol Stations: National Liquid Fuel Refineries and Facilities, Liquid Fuel & Aviation Fuel Depots/Terminals, National Liquid Fuel Refineries - © Commonwealth of Australia (Geoscience Australia), Petrol Stations @ Digital Atlas of Australia. Fuelcheck @ Fair Trading NSW gov. @ Land Insight National Land Use Atlas (NLUA).

Power Plants: AUS @ Powerplants Australia. QLD Power Plants map of Queensland @Department of Energy and Climate. Various sources. @ Land Insight National Land Use Atlas (NLUA).

Waste and Recycling Facilities: National Waste Management Facilities - © Commonwealth of Australia (Geoscience Australia), Australia's waste and resource recovery infrastructure @ DCCEEW. @ Land Insight National Land Use Atlas (NLUA). NSW – Waste facilities @ NSW EPA. NT - Waste & Recycling NT, City of Darwin. QLD - Public waste and recycling facilities in Queensland @ Queensland Government Open Data Portal. SA - Waste disposal, Waste depots @ EPA SA. TAS – Waste Centres, Waste Disposal Facilities @ EPA TAS. VIC - Victoria's waste and resource recovery infrastructure, Waste Facility Locations Victoria's Waste and Recycling Infrastructure Map © Recycling Victoria. WA @ VIC Gov. WA – Waste locations and recycling centres @ DEW WA. @ Land Insight National Land Use Atlas (NLUA).

Historical Business Directories

AUS - AUS Historical Commercial & Trade Directory Data – various sources, see below. UBD business & street directory, Sands & McDougall directories, @ Australian Business Datalist ABDL (with permission)
ACT - 1971, 1981 & 1991 Telecom Australia Yellow Pages Country NSW Directories – Permission for use Sensis 2017.
2005 - 2022 - @ Australian Business Datalist ABDL – with permission
NSW – Sydney Metropolitan Area: 1932-1933 John Sands Sydney Trades Directory
1940 & 1950 Commonwealth of Australia Telephone Directory Sydney
1960-1961 Telecom Australia Pink Pages Sydney – Permission for use Sensis
1970-1971 United Business Directories Sydney – Licenced under Hardie Grant
1974-1975 NSW Post Office Yellow Pages Sydney Buying Guide and Commercial/Industrial Directories – Permission for use Sensis
1980-1981 & 1990-1991 Telecom Australia Yellow Pages Sydney – Permission for use Sensis. 2005 – 2022 @ Australian Business Datalist ABDL
NT - 2005 - 2022 @ Australian Business Datalist ABDL – with permission
QLD - 1865, 1890, 1900, 1906, 1916, 1919, 1924, 1925, 1970 – Pugh's Almanac (copyright expired)
1970-1971 - Brisbane Telephone Directory (copyright expired)
2005 - 2022 - @ Australian Business Datalist ABDL – with permission
SA - 1930, 1935, 1944-45, 1950, 1955, 1960, 1965, 1970, 1973 - Sands & McDougall Melbourne Trade Directory (copyright expired)
2005 - 2022 @ Australian Business Datalist ABDL – with permission
TAS - 1896-1897, 1900, 1905, 1910, 1915, 1920, 1925, 1930, 1935, 1940-41, 1945-46, 1948 - Wises Post Office Directory (copyright expired)
2005 - 2022 @ Australian Business Datalist ABDL – with permission
VIC - 1900, 1905, 1915, 1925, 1935, 1945, 1955, 1965, 1975 - Sands & McDougall Melbourne Trade Directory (copyright expired)
1960-1961, 1970-1971 - Post Office Pink Pages Melbourne – Permission for use Sensis 2017
1981-1982, 1990-1991 - Telstra Yellow Pages Melbourne - Permission for use Sensis 2017
Telstra Yellow Pages Melbourne - Permission for use Sensis 2017
2005 - 2022 @ Australian Business Datalist ABDL – with permission
WA -2005 - 2022 @ Australian Business Datalist ABDL – with permission

Section 5 – Natural Hazards

Fire Hazards

AUS - Bushfire Prone Areas – © Australian Government Department of Climate Change, Energy, the Environment and Water. Bushfire History - © Commonwealth of Australia (Geoscience Australia). ACT - Bushfire Prone Areas – © ACT Government Environment, Planning and Sustainable Development Directorate. Bushfire History - NPWS Fire History - Wildfires and Prescribed Burns © State Government of NSW and Department of Planning, Industry and Environment. NSW - Bushfire Prone Areas – © State of New South Wales (NSW Rural Fire Service). Bushfire History - © State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water, Wildfires and Prescribed Burns - © State of New South Wales, National Parks, and Wildlife Management Unit. NT - Bushfire Prone Areas – © NT Government of Australia through Department of Environment and Natural Resources. Bushfire History - ©The Commonwealth of Australia through the Department of the Environment and Energy. QLD - Bushfire Prone Areas – © Commonwealth Scientific and Industrial Research Organisation (CSIRO) in conjunction with the State of Queensland (Queensland Fire and Emergency Services). Bushfire History - © State of Queensland (Department of Environment and Science). SA - Bushfire Prone Areas – © SA Government Country Fire Service (CFS), Department of Planning, Transport, and Infrastructure. Bushfire History - © SA Government Department for Environment and Water. TAS - Bushfire Prone Areas – © Tasmania Fire Service. Bushfire History - © Department of Environment, Parks, and Water Security. VIC - Bushfire Prone Areas – © VIC Government Department of Environment, Land, Water and Planning; Department of Transport, Planning and Local Infrastructure. Bushfire History - © VIC Government Department of Transport, Planning and Local Infrastructure. WA - Bushfire Prone Areas – © WA Government Department of Fire and Emergency Services. Bushfire History - © WA Government Department of Fire and Emergency Services.

Flood Hazard

AUS - Flood Planning Area, Other Flood Studies, and Flood History - @ Commonwealth of Australia, @ Bureau of Meteorology. This dataset is digitised and/or aggregated from various verified Council Records, Aerial Photography Interpretation, Flood Imagery Maps, Topographic Maps, Historic Parish Maps, publicly available technical reports, and information digitised by the Land Insight Research team. @Land Insight Research. ACT - Flood Risk and Flood map information © ACT Government Environment, Planning and Sustainable Development Directorate – Environment. NSW - NSW Flood Data Portal @NSW State Emergency Service, © State Government of NSW, NSW Department of Climate Change, Energy, the Environment and Water; and NSW Department of Planning, Housing, and Infrastructure; @ NSW Government Spatial Services. NT - Floodplain maps, Flood monitoring © NT Government of Australia through Department of Environment and Natural Resources, Department of Lands, Planning, and the Environment. QLD - QLD Flood mapping, Historical flood mapping © The State of Queensland, Department of Resources, Queensland Reconstruction Authority. Flood data series and Flood data overlays (various) Queensland Open Data portal. SA - Flood Awareness map, Flood Risk © Crown in right of the State of South Australia, @ Government of South Australia, Department for Environment and Water. Flood mapping (various) SA Data Directory portal. TAS - Tasmania Flood Mapping Projects Reports @ Tasmania State Emergency Services. Floodplain Mapping in Tasmania, Flood Inundation Extent models. © Department of Natural Resources and Environment Tasmania. TAS TheList dataset portal. VIC - Victoria Flood mapping and overlays. © Copyright State Government of Victoria various datasets, Victoria State Emergency Service; Department of Energy, Environment and Climate Action, Department of Environment, Land, Water & Planning. Flood data (various) VIC data portal (data.vic). WA - Floodplain mapping tool, Landgate Flood Map. © Government of Western Australia, @ Department of Water and Environmental Regulation. Flood data (various) WA data portal.

Erosion Hazard

AUS - Soil Erosion Hazards, © Commonwealth of Australia (Geoscience Australia), @ Agriculture DAFF @Australian Government. ACT - Soil and Land Resources of the Australian Capital Territory, © State of New South Wales and Department of Planning and Environment. NSW – Land Soil Capability, Vulnerable lands, © State of New South Wales and Department of Planning and Environment NT - Land System, Soil Conservation, © Department of Environment, Parks, and Water Security. QLD - QLD Erosion prone areas, Coastal and Inland erosion areas, © The State of Queensland. SA - Landscape salad, Mass movement and soil Attributes, Water and Wind Erosion, © Department for Environment and Water. TAS - Coastal Erosion Hazard, Landslide Planning Map, Water and Wind Erosion Statewide map, © Department of Natural Resources and Environment Tasmania. VIC - Geomorphology of Victoria, © VIC Government Department of Jobs, Skills, Industry and Regions. WA - Soil Landscape Land Quality, Land capability assessment, Land instability Risk, Water Erosion Riks, Wind Erosion Risk, © WA Government Department of Primary Industries and Regional Development.

For more information visit www.landinsight.co or contact orders@landinsight.co.

Terms and Conditions

Terms and Conditions
1. Land Insight & Resources (Land Insight) will perform the Services in accordance with these terms and conditions
2. By submitting the Application Form, the User acknowledges that it has read and understood these terms and conditions and agrees to be bound by them.
3.Land Insight reserves the right to change these terms and conditions. Any change shall be effective upon notice, which may be given by Land Insight posting such change on the Website, or by direct communication with the User.

Services
4.Land Insight agrees to undertake the Services using due skill, care, and diligence.
5.The User assumes the sole risk of making use of, and/or relying on, the report and the Services. Land Insight makes no representations about the suitability, completeness, timeliness, reliability, legality, or accuracy of the Services.
6.Unless Land Insight agrees expressly otherwise:
(A) The Services are solely for the use and benefit of the User; and
(B) Land Insight does not accept any liability, whether directly or indirectly, for any liability or loss suffered or incurred by any third par ty placing any reliance on the performance of the Services or any Documents or material arising from or in connection with the Services.
7. The User warrants to Land Insight that it will not use the Services for any purpose that is unlawful or is otherwise inconsistent with these terms and conditions.
8. The User will not alter in any way or provide a copy of the report, or any Document prepared by Land Insight to any other person without Land Insight's prior written consent.

Payment Terms
9. The Fee will be payable at the time of submitting the Application Form unless invoicing payment terms have been negotiated prior to purchase with Land Insight.
10. The User and Land Insight may agree in writing to vary the Services. The fee for each variation shall be agreed between Land Insight and the User.
11. The User agrees to pay Land Insight the Fee, including the fee for any variation requested in accordance with clause 12.
12. If the User's rights are terminated and the User has made an advance payment, Land Insight will refund the User a reasonable proportion of the balance as determined by Land Insight in relation to the value of Services already provided.
13. GST at the prevailing rate is payable in addition to the Fee. The User agrees to pay any other applicable taxes, duties or government-imposed fees related to the User's use of the Services.

Intellectual Property
14. Land Insight owns all intellectual proper ty in the Report and arising from or in connection with the Services.
15.Land Insight grants the User a royalty free licence to use Land Insight's intellectual proper ty for that User's personal assessment of its Proper ty(s) only.

Privacy Policy
16. Upon submitting the Application Form the User consents to Land Insight's use of the personal data provided by the User for the purposes of providing the Services.
17. The Reliance on the report, the use of the Services and the use of Land Insight's Website is at the User's own risk. The User accepts that Land Insight does not guarantee the confidentiality of any communication or information transmitted through the use of the Website.
18. Land Insight will not provide to any third par ty any personal data provided by a User without the User's permission.
19. The User acknowledges that any feedback provided to Land Insight over the Website is not confidential and that Land Insight has the right to publish, reproduce, disseminate, transmit, distribute and copy (in whole or in part) any such feedback without the approval of the User.
20. Land Insight assumes no responsibility or liability for any content, communications or feedback submitted by a User over the Website. If a User has submitted objectionable content, communications or Feedback, Land Insight may, in its sole discretion, terminate that User's account, take legal action, or notify the appropriate authorities or par ties, without prior notice.

Third Party Services
21. The User accepts that, although the Website may contain or provide information regarding applications, products and/or services provided or offered by third par ties, Land Insight does not recommend or endorse any such third par ty applications, products, and/or services.
22. The report contains content provided to Land Insight by other par ties (Third Par ty Content). Land Insight is not responsible for, does not endorse and makes no representations either expressly or impliedly concerning the accuracy or completeness of any Third Par ty Content. You rely on the Third Par ty Content completely at your own risk.

Limit and Extent of Liability
23. Land Insight's liability is limited to the amount of the Fee. Liability arising in the provision of the Services is reduced to the extent that it arises out of or in connection with any negligent act or omission by the User.
24. Neither par ty is liable to the other for loss of actual or anticipated revenue or profits, increased capital, or financing costs, increased operational or borrowing costs, pure economic loss, exemplary or punitive damages or indirect or consequential damages or loss.
25. In no event shall Land Insight or any directors, officers, employees or agents be liable for any indirect, punitive, incidental, special, or consequential damages arising out of or in any way connected with the use of the Website, any delay or inability to use the Website, any information available on the Website, or otherwise arising out of the utilisation of the Website, whether based in contract, tor t, strict liability, or otherwise, even if Land Insight has been advised of the possibility of such damages. The negation of damages set forth herein is a fundamental element of the basis of the bargain between Land Insight and the User. The Services would not be provided without such limitations.

Property Verification

26. The User accepts that the Services provided do not take into account any information relating to the actual state or condition of the Property.
27. The User acknowledges that the Services are not to be interpreted as commenting on the physical characteristics or condition of the Proper ty, any particular purpose or use of that Proper ty or the saleability or value of the Property.

Termination and Modification

28. Land Insight reserves the right in its sole discretion to terminate, block or restrict the User's use of the Services or any portion thereof, for any reason, and without notice. In addition, Land Insight reserves the right in its sole discretion to terminate or modify any part of the Website without notice, for any reason.

Anti-Hacking

29. The User agrees not to directly or indirectly, attempt to or disrupt, impair, interfere with, alter, or modify the Website or any of its content.
30. The User agrees not to allow, aid or abet third par ties to directly or indirectly, attempt to or disrupt, impair, interfere with, alter or modify the Website or any of its content, or obtain access to any information regarding any User or any other report issued to a User.

Complaints

31. Any complaints in relation to the Services should, in the first instance, be in writing and addressed to Land Insight Customer Service at: info@landinsight.co. Land Insight will respond to any such complaints in writing as soon as practicably possible.

General Matters

32. These terms and conditions are governed by and will be construed and enforced in accordance with the laws of the State of New South Wales, Australia. If any dispute, controversy, or claim arises out of or relating to these terms and conditions, whether sounding in contract, tor t or otherwise, it shall be resolved by use of an alternative dispute resolution procedure acceptable to both par ties with the assistance of a mediator. If the dispute has not been resolved to the satisfaction of either par ty within 60 days of initiation of the procedure or if either par ty fails or refuses to participate in or withdraws from participating in the procedure, then either par ty may refer the dispute to the court.
33. These terms and conditions apply to all Services provided by Land Insight.
34. If there is any inconsistency between these terms and conditions and any other document or agreement between the par ties, these terms and conditions will prevail.
35. These terms and conditions represent the entire agreement between the par ties.
36. The User authorises Land Insight to destroy Documents which Land Insight has prepared or holds in connection with the Services 7 years after the last date on which the Services were provided.
37. If any of the terms of the Application Form or the terms and conditions are invalid, unenforceable, or void, the relevant term must be read down to the maximum extent possible or severed from the rest of the Application Form or these terms and conditions.
38. These terms and conditions can only be amended or varied by a written document signed by both par ties.
39. Neither par ty may assign or transfer any rights or obligations arising in the provision of the Services or these terms and conditions without the other party's written consent.

Defined Terms

Application Form	Means the form and accompanying information provided on the Website, completed, and submitted by the User to request the Services.
Document	Includes a report, and any other written or electronic document.
Fee	Means the amount set out in the Application Form or confirmed via an invoice.
Property	Means the proper ty to which the Services and the report relate.
Report	Means the Document prepared by Land Insight and provided to the User which contains the environmental and development data which is relevant to the Proper ty.
Services	Means the review of data and information on which the report is based, and the preparation and provision to the User of the report.
Website	Means Land Insight's online site, which is: www.landinsight.co
User	Means the person(s) set out in the Application Form including that person's permitted successors.

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Insight

Appendix A

REPORT MAPS

Applecross Site (Swan River Ferry Expansion)
Applecross, WA

MAP 1.1

Sensitive Receptors and Features of Interest

Subject area Water Bodies

0 30 60 90 120 150m

Land Insight

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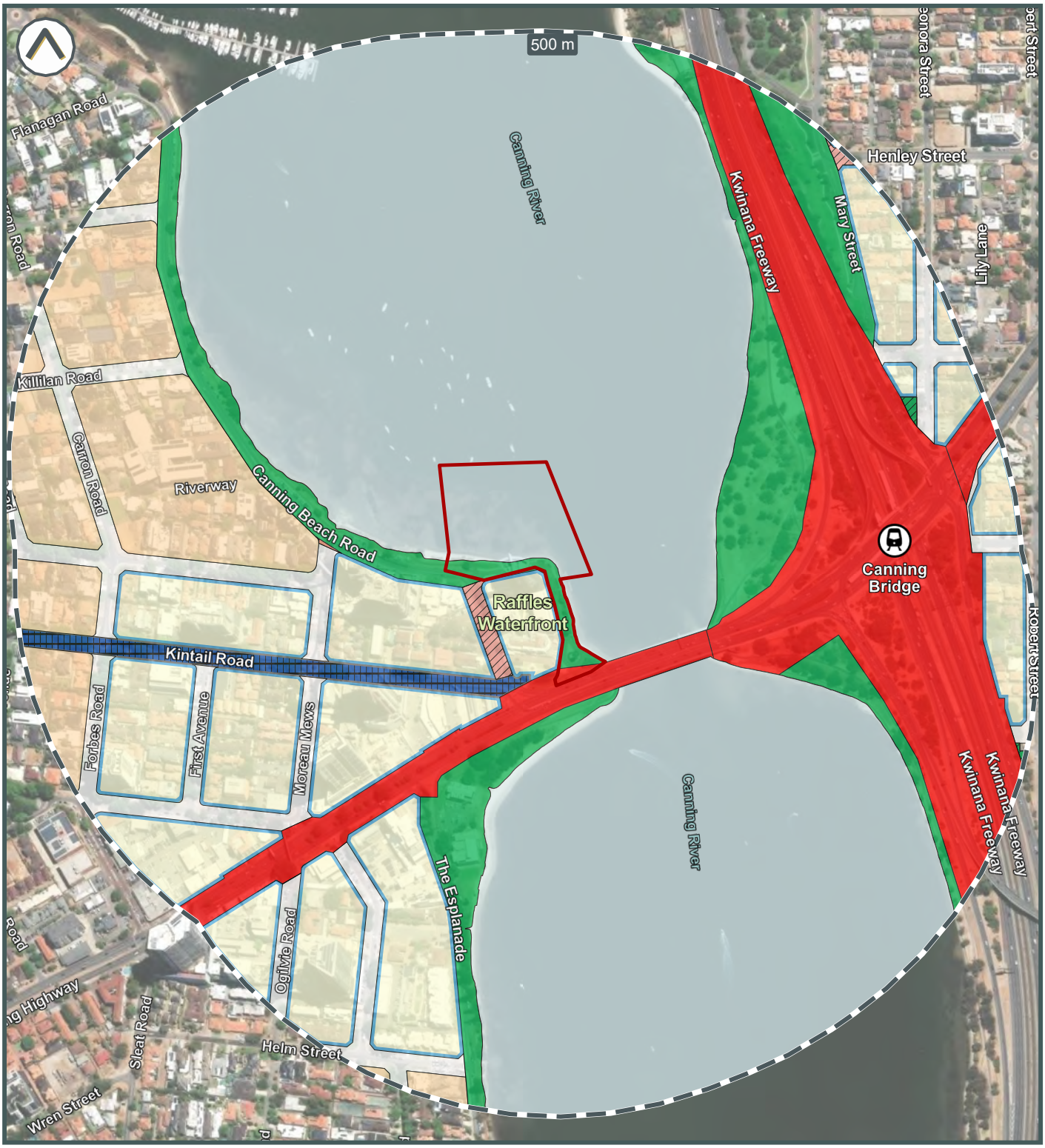
Zoning

MAP 1.2a



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- Subject area
- Zone – Planning Scheme
  - Centre
  - District distributor road
  - Local distributor road
- Local road
- Public open space
- Residential
- Zone – Regional Scheme
  - Primary regional roads
- Regional open space
- Urban
- Waterways

0 50 100 150 200 250m

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PROPERTY SETTING

Planning Overlays

MAP 1.2b

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Subject area

Overlay

- Local Planning Scheme Boundary
- Local Planning Scheme R-Code Boundary
- Region Planning Scheme Boundary
- Region Scheme Applications
- Region Scheme Zones and Reserves

0 50 100 150 200 250m

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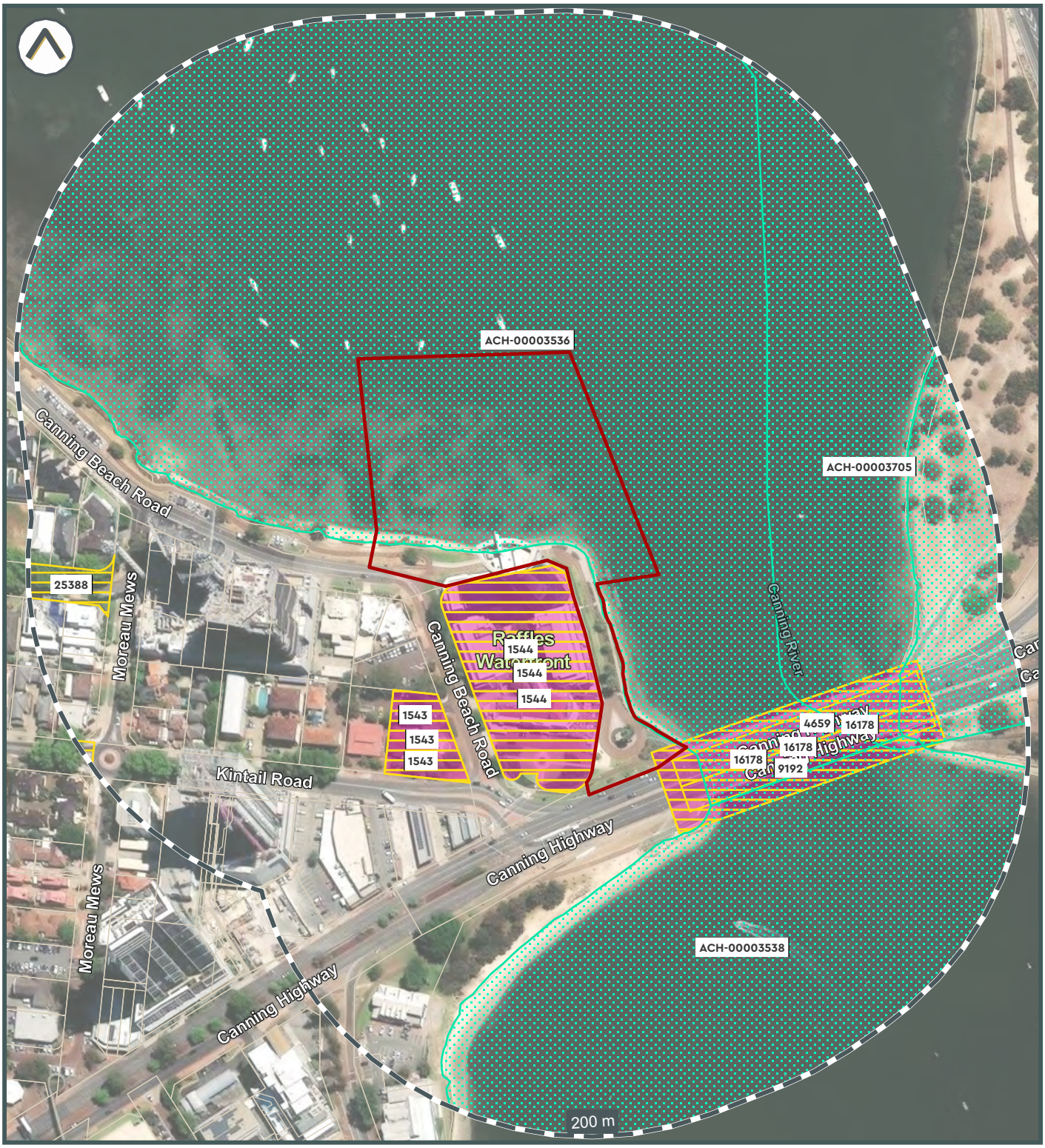
Heritage

MAP 1.3



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Subject area

State and Local Heritage Registers
- State Heritage Register
- Aboriginal Heritage Places
- Heritage Register

0 30 60 90 120 150m

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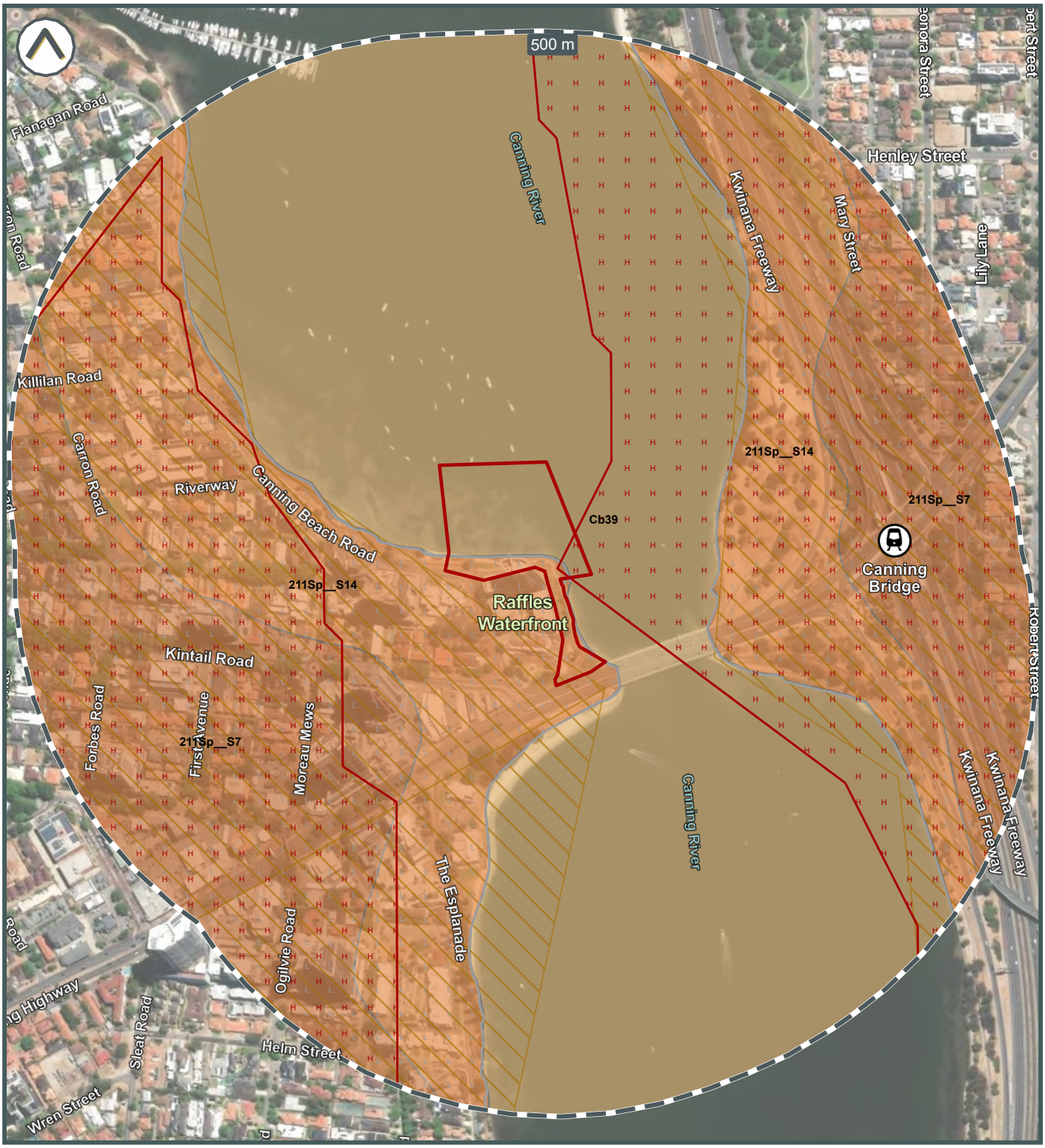
Soil Landscape and Salinity

MAP 1.4a



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Subject area

Radon Level (Bq/m3)
5-19

Soil Salinity
Low

High hazard or risk

Code
211Sp__S14
211Sp__S7
Cb39

0 50 100 150 200 250m

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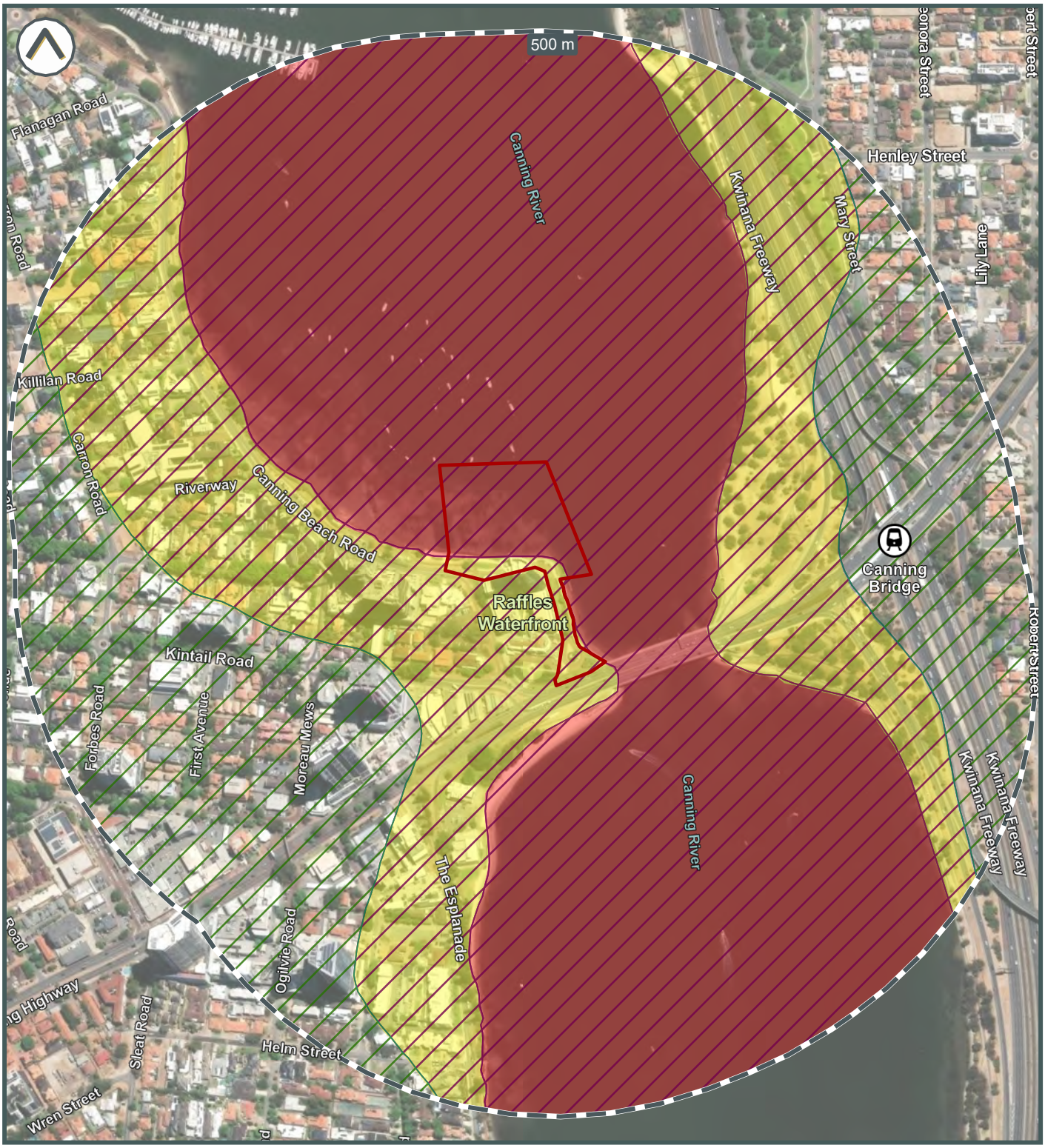
Acid Sulfate Soils

MAP 1.4b



Subject area

Atlas of Australian Acid Sulfate Soils
- High Probability of occurrence
- Extremely low probability of occurrence

Coastal Acid Sulfate Soils
- High to moderate risk
- Moderate to low risk

0 50 100 150 200 250m

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MAP 1.5

Geology and Topography

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Subject area
Topographic Contour (m)
Geology Code
S14
S7
Water

0 50 100 150 200 250m

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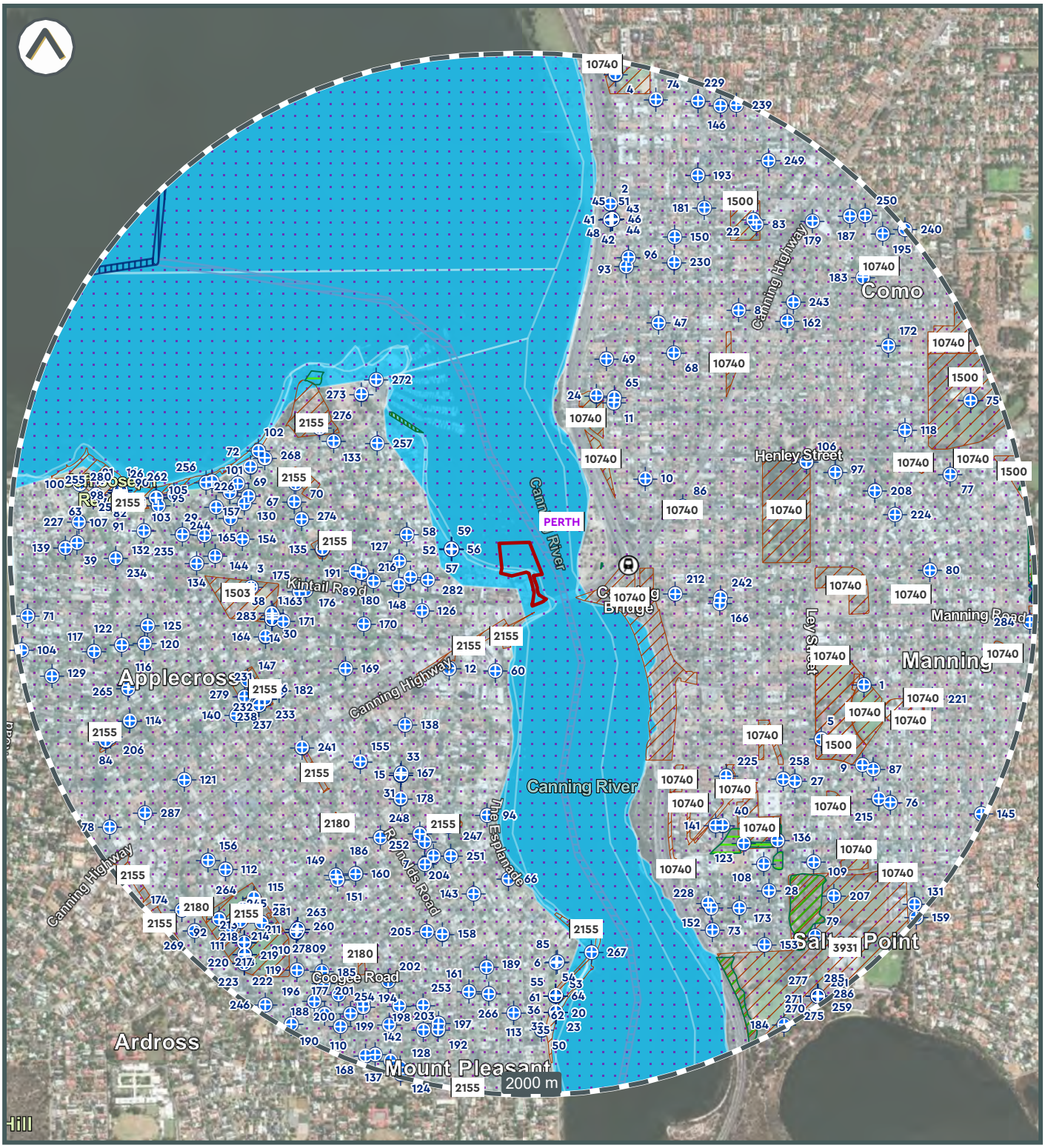
HYDROGEOLOGY

MAP 2.1

Groundwater Dependent Ecosystems & Hydrogeology Constraints



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- Subject area
- Groundwater bores

Ecosystems that rely on the Surface expression of Groundwater
- High potential GDE – from national assessment
- Low potential GDE – from national assessment

Ecosystems that rely on Subsurface presence of Groundwater
- High potential GDE – from national assessment
- Moderate potential GDE – from national assessment
- Low potential GDE – from national assessment

- Wetlands

Instrument
- Groundwater Licence
- Groundwater Protection Areas

Aquifer type
- Porous, extensive highly productive aquifers

0 210 420 630 840 1,050m

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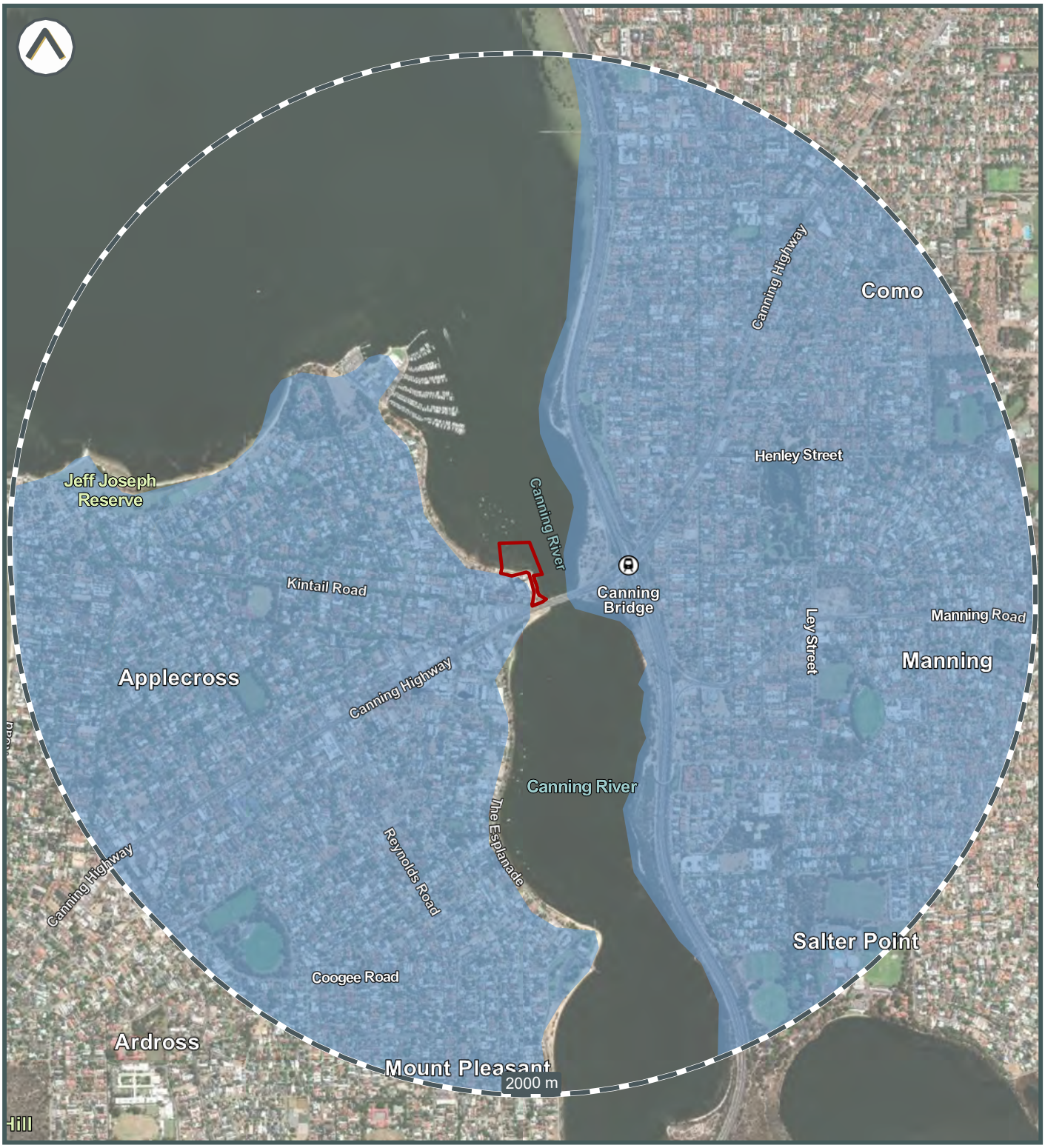
MAP 2.2

Groundwater and Other Bores



Subject area

Salinity Class

Non-Saline (<3000mg/L)

0 210 420 630 840 1,050m

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ENVIRONMENTAL REGISTERS LICENSES AND INCIDENTS

MAP 3.1

Contaminated Land Public Register

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Subject area

Contaminated Land Public Register (EPA)

Contaminated – remediation required

Remediated for restricted use

0 110 220 330 440 550m

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MAP 3.2

Licences, Approvals & Assessments

Subject area

Environment Work

Works approval

0 110 220 330 440 550m

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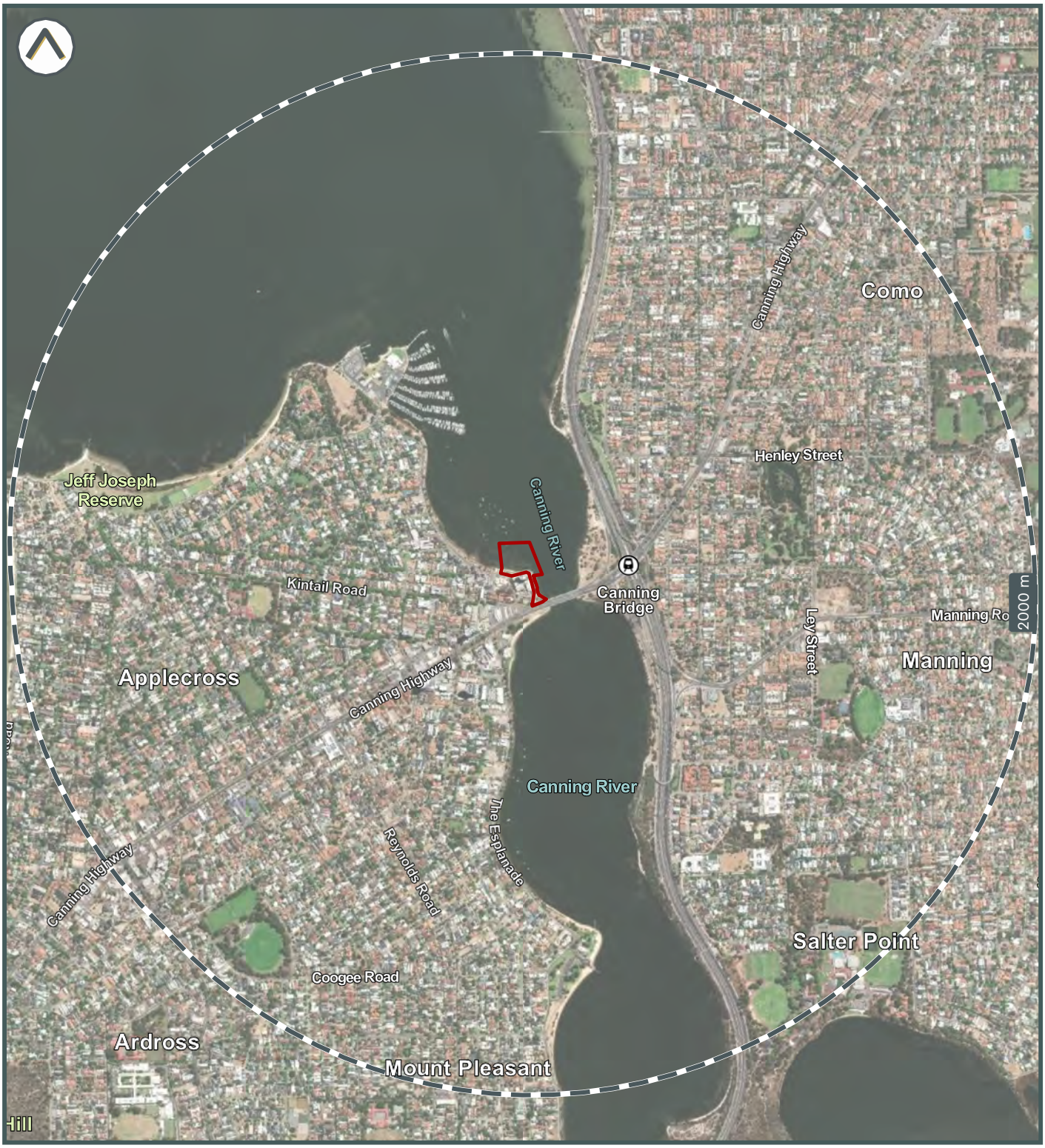
MAP 3.3a

Sites Regulated by Other Jurisdictional Body



Subject area

0 210 420 630 840 1,050m

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MAP 3.3b

Other Potential Hazard Sources

Subject area

0 50 100 150 200 250m

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POTENTIALLY CONTAMINATED AREAS

Current Potentially Contaminating Activities (PCAs)

MAP 4.1

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Subject area

Potentially Contaminating Activities

Depots and Storage Yards

Petrol Stations and Fuel Terminals

Data is current as when this report was created. However due to the turnover of business locations, some addresses may be former.

0 30 60 90 120 150m

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MAP 5.1

Fire Hazards

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Subject area

0 50 100 150 200 250m

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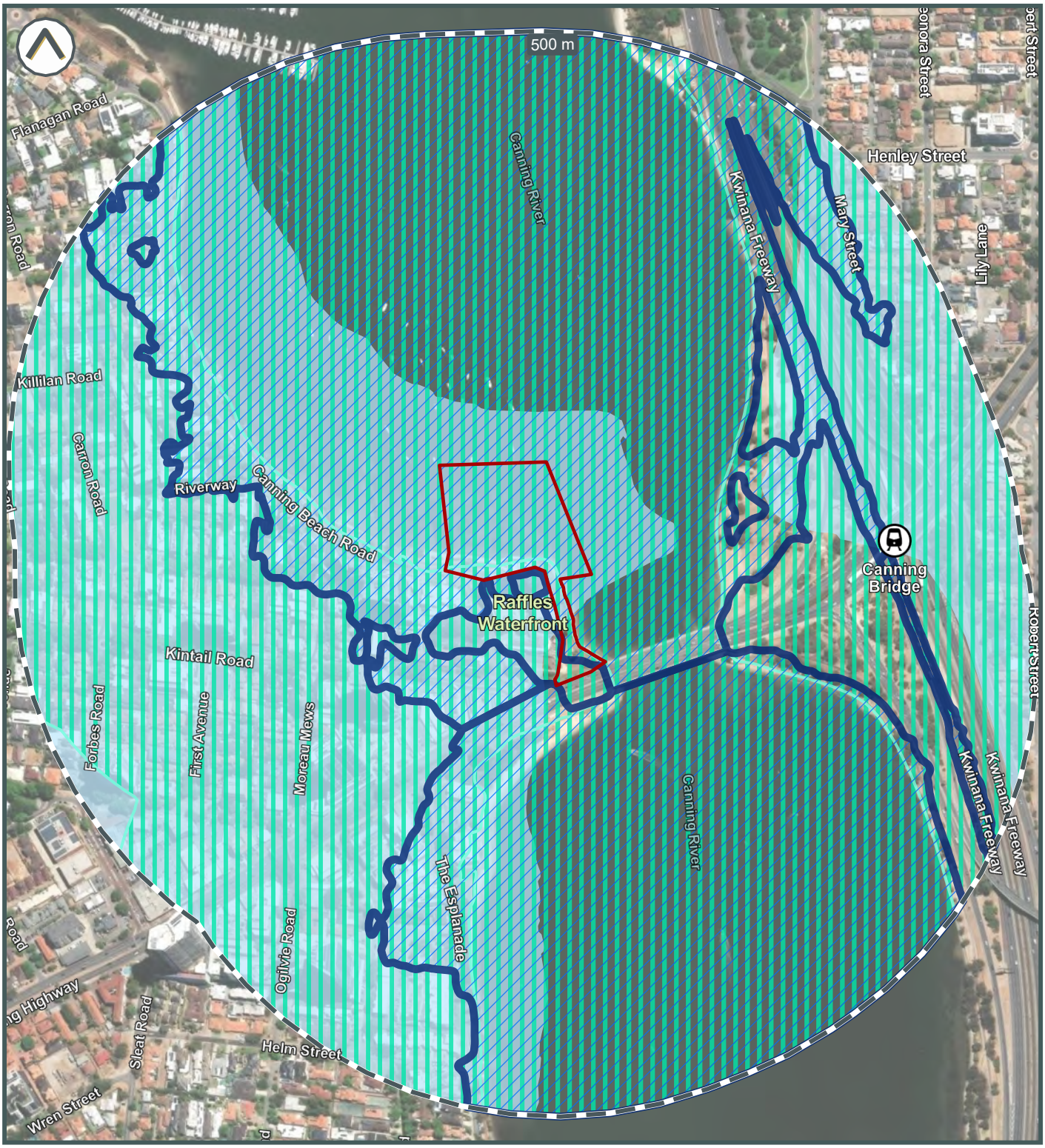
NATURAL HAZARDS

Flood Hazard

MAP 5.2



Subject area

Category
Flood Prone Area

Floodplain

Type
<3% of the map unit has a moderate to high hazard

0 50 100 150 200 250m

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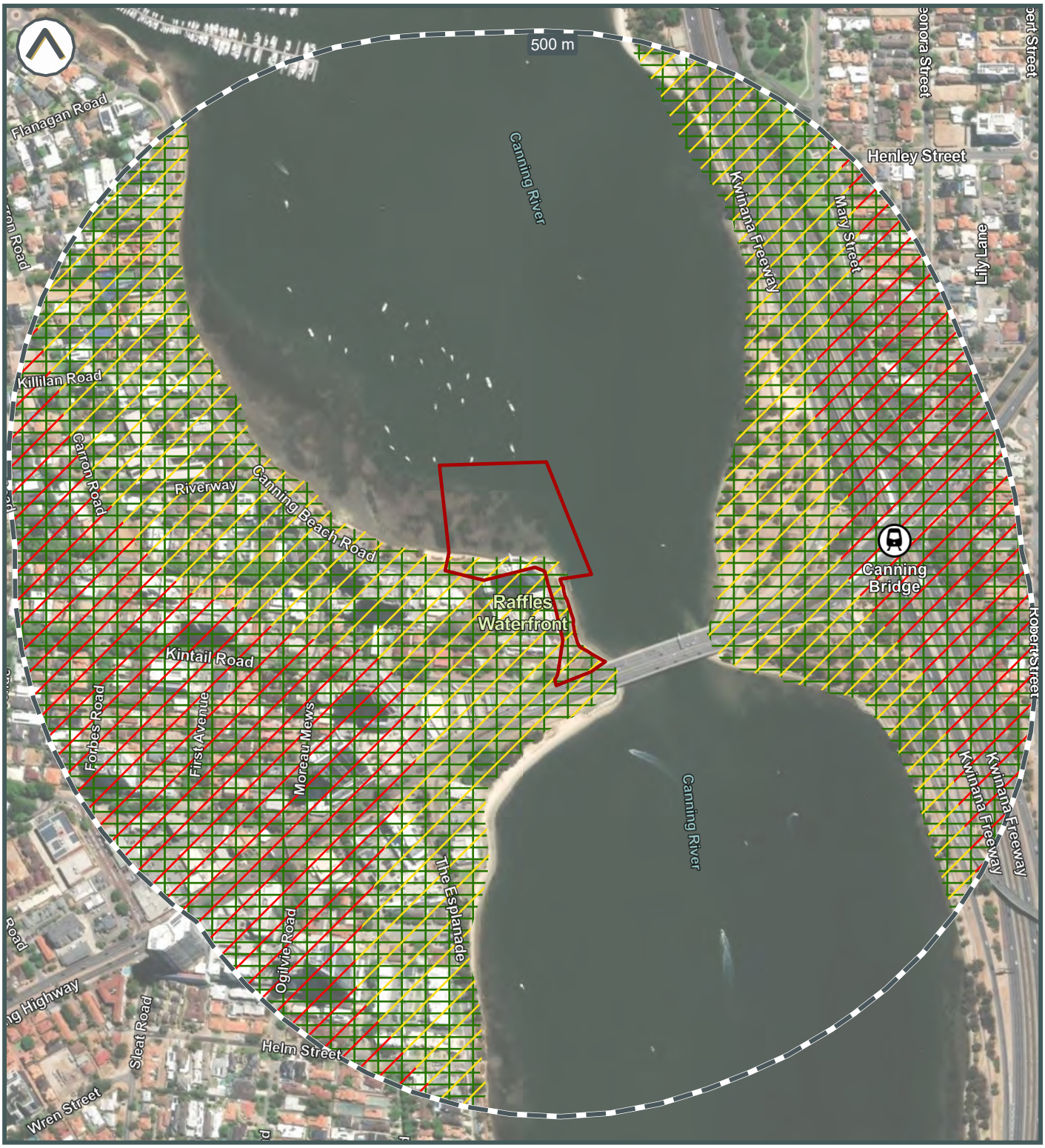
NATURAL HAZARDS

Erosion Hazard

MAP 5.3



Subject area

Wind Erosion Risk
- Very High
- Moderate

Water Erosion Risk
- Negligible

Landslip Erosion Risk
- Negligible

0 50 100 150 200 250m

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 06-May-2025

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	52
Listed Migratory Species:	49

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	13
Commonwealth Heritage Places:	None
Listed Marine Species:	54
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	5
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	5
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area	In feature area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat may occur within area	In feature area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat known to occur within area	In buffer area only
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phaethon rubricauda westralis Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat may occur within area	In feature area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area	In feature area
[Zanda latirostris listed as Calyptorhynchus latirostris](#) Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area	In feature area
MAMMAL			
[Dasyurus geoffroii](#) Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Pseudocheirus occidentalis](#) Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
PLANT			
[Andersonia gracilis](#) Slender Andersonia [14470]	Endangered	Species or species habitat likely to occur within area	In feature area
[Banksia mimica](#) Summer Honeypot [82765]	Endangered	Species or species habitat may occur within area	In feature area
[Caladenia huegelii](#) King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat likely to occur within area	In feature area
[Conospermum undulatum](#) Wavy-leaved Smokebush [24435]	Vulnerable	Species or species habitat may occur within area	In feature area
[Diuris drummondii](#) Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Diuris micrantha](#) Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat likely to occur within area	In feature area
Drakaea elastica Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat likely to occur within area	In feature area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Eremophila glabra subsp. chlorella [84927]	Endangered	Species or species habitat may occur within area	In buffer area only
Macarthuria keigheryi Keighery's Macarthuria [64930]	Endangered	Species or species habitat may occur within area	In feature area
Synaphea sp. Fairbridge Farm (D.Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Thelymitra stellata Star Sun-orchid [7060]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Natator depressus](#)			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
SHARK			
[Pristis pristis](#)			
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In feature area
[Sphyrna lewini](#)			
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species

[Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
[Anous stolidus](#)			
Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
[Apus pacificus](#)			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
[Diomedea amsterdamensis](#)			
Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In feature area
[Diomedea epomophora](#)			
Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In feature area
[Diomedea exulans](#)			
Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Diomedea sanfordi](#)			
Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
[Macronectes giganteus](#)			
Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Marine Species			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In feature area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Mobula birostris as Manta birostris](#) Giant Manta Ray [90034]		Species or species habitat may occur within area	In feature area
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
[Pristis pristis](#) Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Terrestrial Species			
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
[Calidris alba](#) Sanderling [875]		Roosting known to occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area	In feature area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area	In feature area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phalaropus lobatus Red-necked Phalarope [838]		Roosting known to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In feature area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area	In feature area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area	In feature area
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area	In feature area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

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

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [50743]	WA	In buffer area only
Commonwealth Land - [50754]	WA	In buffer area only
Commonwealth Land - [50799]	WA	In buffer area only
Commonwealth Land - [50750]	WA	In buffer area only
Commonwealth Land - [51426]	WA	In buffer area only
Commonwealth Land - [51425]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51421]	WA	In buffer area only
Commonwealth Land - [50797]	WA	In buffer area only
Commonwealth Land - [50791]	WA	In buffer area only
Commonwealth Land - [50774]	WA	In buffer area only
Commonwealth Land - [50798]	WA	In buffer area only
Commonwealth Land - [50742]	WA	In buffer area only
Commonwealth Land - [51142]	WA	In buffer area only

Listed Marine Species

[Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
Calidris alba Sanderling [875]		Roosting known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area	In feature area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In feature area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area	In feature area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In feature area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
[Numenius minutus](#) Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In buffer area only
[Numenius phaeopus](#) Whimbrel [849]		Roosting known to occur within area	In feature area
[Pachyptila turtur](#) Fairy Prion [1066]		Species or species habitat likely to occur within area	In feature area
[Pandion haliaetus](#) Osprey [952]		Breeding known to occur within area	In feature area
[Phalaropus lobatus](#) Red-necked Phalarope [838]		Roosting known to occur within area	In feature area
[Pluvialis fulva](#) Pacific Golden Plover [25545]		Roosting known to occur within area	In feature area
[Pluvialis squatarola](#) Grey Plover [865]	Vulnerable	Roosting known to occur within area overfly marine area	In feature area
[Recurvirostra novaehollandiae](#) Red-necked Avocet [871]		Roosting known to occur within area overfly marine area	In feature area
[Rostratula australis as Rostratula benghalensis (sensu lato)](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
[Thalassarche cauta](#) Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi			
White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
Thinornis cucullatus as Thinornis rubricollis			
Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In feature area
Tringa brevipes as Heteroscelus brevipes			
Grey-tailed Tattler [851]		Roosting known to occur within area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Tringa stagnatilis			
Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In feature area
Tringa totanus			
Common Redshank, Redshank [835]		Roosting known to occur within area overfly marine area	In feature area
Xenus cinereus			
Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area overfly marine area	In feature area
Reptile			
Caretta caretta			
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chelonia mydas			
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea			
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Canning River	Management Area	WA	In feature area
Milyu	Nature Reserve	WA	In buffer area only
Swan Estuary - Milyu	Marine Park	WA	In buffer area only
Swan Estuary - Pelican Point	Marine Park	WA	In buffer area only
Swan River	Management Area	WA	In feature area

Nationally Important Wetlands		[Resource Information]
Wetland Name	State	Buffer Status
Swan-Canning Estuary	WA	In feature area

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Shenton Park Subdivision	2004/1479	Controlled Action	Completed	In feature area
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
South West Metropolitan Railway Project	2003/1175	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

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

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

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

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

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Swan Canning Estuary Water Quality Monitoring Project

Weekly Water Quality Report

Lower Swan Canning Estuary to Upper Swan Estuary

5 May 2025

Prepared by

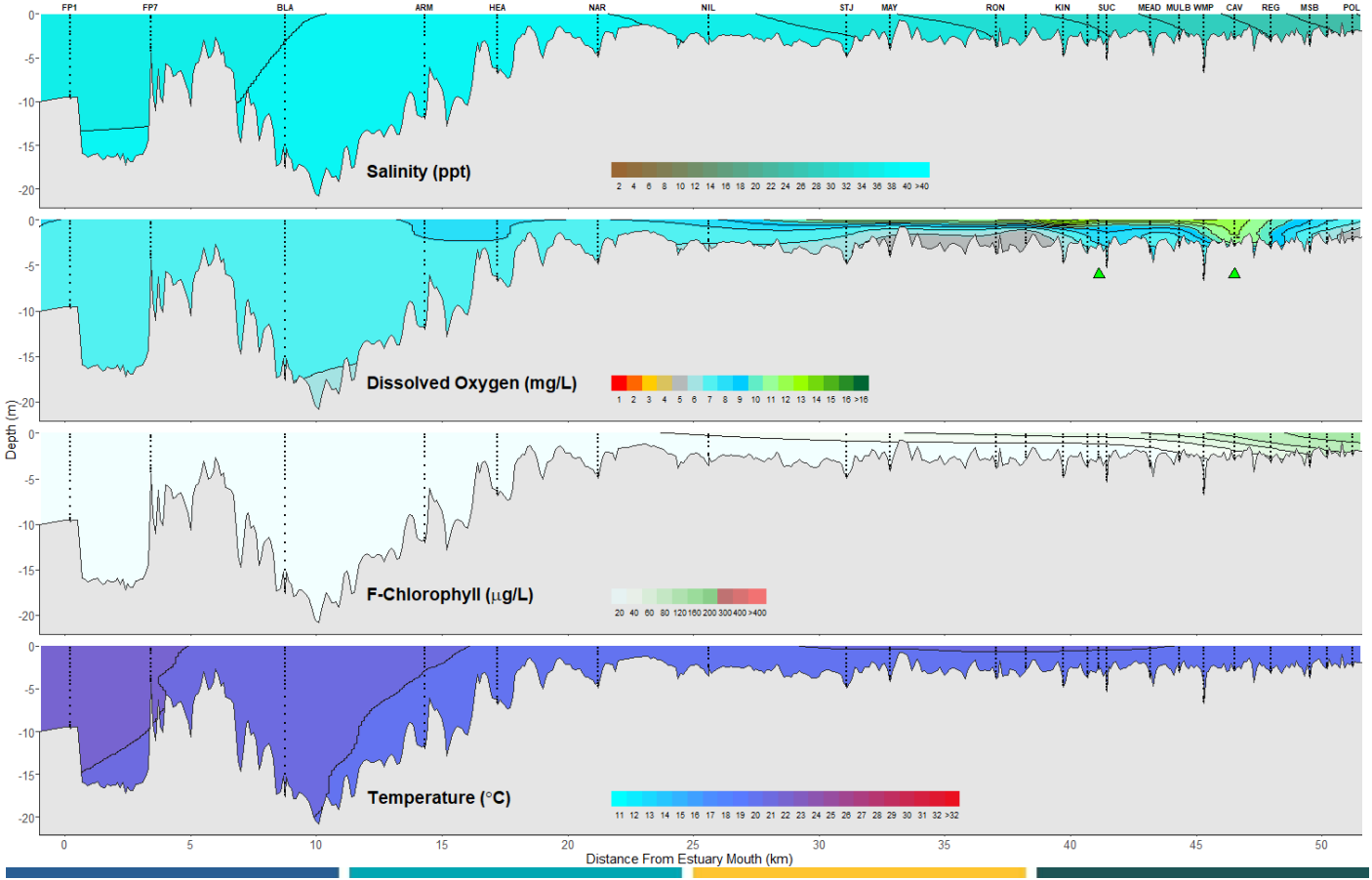
Rivers and Estuaries Science
Biodiversity and Conservation Science
Department of Biodiversity, Conservation and Attractions

Department of Biodiversity, Conservation and Attractions

Biodiversity and Conservation Science

We're working for Western Australia.

Swan Canning Estuary - Water Quality Profiles – 5 May 2025

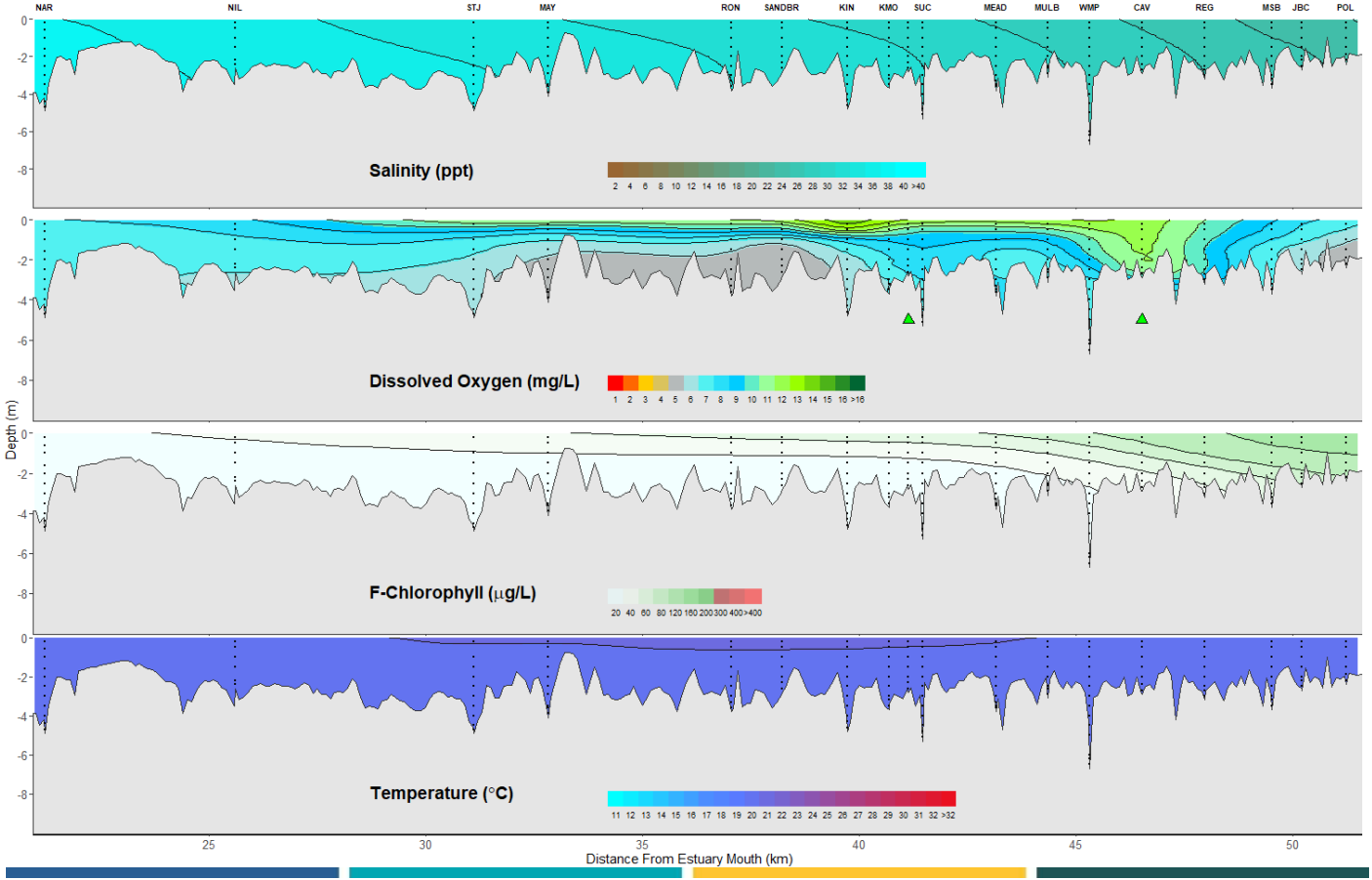


Department of Biodiversity, Conservation and Attractions

Biodiversity and Conservation Science

We're working for Western Australia.

Swan Canning Estuary - Water Quality Profiles – 5 May 2025



Date: 5 May 2025

Weather & tide conditions: Conditions were overcast with a light north easterly to south westerly breeze of up to 5.1 knots. The predicted tides at Barrack St were 0.73 m at 3:09 am (low tide) and 1.11 m at 3:30 pm (high tide). Perth recorded 7.8 mm rainfall in the week prior to sampling (Bureau of Meteorology).

Oxygenation: The Guilford and Caversham oxygenation plants were triggered to provide oxygen in the 24 hours prior to sampling.

Lower Swan Canning Estuary (FP1 to NAR): The Lower Swan Canning Estuary was saline at FP1 and FP7, saline over hypersaline at BLA and hypersaline from ARM to NAR. Waters were well oxygenated and chlorophyll fluorescence was low. Water temperatures ranged from 19.4 to 21.7 °C at the time of sampling.

Middle Swan Estuary (NIL to RON): The Middle Swan Estuary was saline and waters were oxygenated or well oxygenated. Chlorophyll fluorescence was moderate in surface waters at MAY. Water temperatures ranged from 19.2 to 20.4 °C at the time of sampling.

Upper Swan Estuary (SANDBR to POL): The Upper Swan Estuary was saline from SANDBR to CAV, brackish over saline at REG and MSB and brackish at JBC and POL. Waters were oxygenated or well oxygenated. Chlorophyll fluorescence was moderate from SANDBR to KMO, MEAD to WMP and REG to POL, high in surface waters at JBC and extreme in surface waters at MSB. Water temperatures ranged from 19.0 to 21.0 °C at the time of sampling.

NB: Profile plots are visual interpolations of measured parameters only. Detailed data are available at wir.water.wa.gov.au.

Oxygenation Plant Operational Status:
- Operating for part or all of the 24 hours prior to sampling
- Operable but not triggered to operate in the 24 hours prior to sampling
- Inoperable for part or all of the 24 hours prior to sampling

Definitions:
Salinity – fresh <5, brackish 5-25, saline 25-35, hypersaline >36
Dissolved oxygen – well oxygenated >6 mg L^{-1}, oxygenated >4-6 mg L^{-1}, low oxygen >2-4 mg L^{-1}, hypoxic 0.5-2 mg L^{-1}, anoxic <0.5 mg L^{-1}
Chlorophyll fluorescence (low flow): low < 50 µg L^{-1}, moderate 50-150 µg L^{-1}, high 150-400 µg L^{-1}, extreme > 400 µg L^{-1}

Recommended reference: Department of Biodiversity, Conservation and Attractions, 2025. *Swan Canning Estuary water quality profile report, Lower Swan Canning Estuary to Upper Swan Estuary 5 May 2025.* Rivers and Estuaries Science (https://www.dpaw.wa.gov.au/management/swan-canning-riverpark)

Swan Canning Estuary Water Quality Monitoring Project

Weekly Water Quality Report

Canning Estuary and Lower Canning River

6 May 2025

Prepared by

Rivers and Estuaries Science
Biodiversity and Conservation Science
Department of Biodiversity, Conservation and Attractions

Department of Biodiversity, Conservation and Attractions

Biodiversity and Conservation Science

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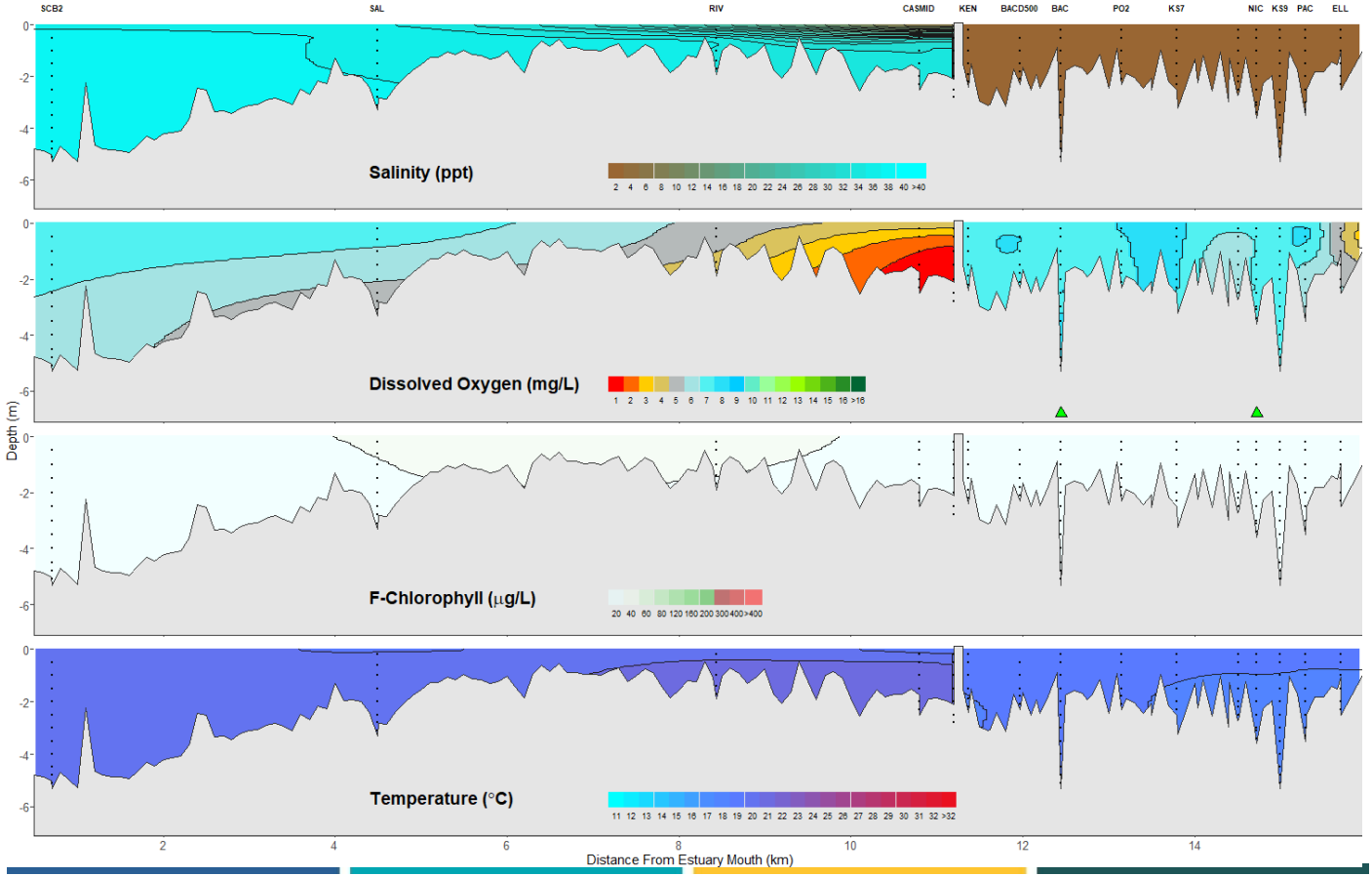
Canning Estuary and Lower Canning River - Water Quality Profiles – 6 May 2025



Date: 6 May 2025

Weather & tide conditions: Conditions were clear with a predominately easterly breeze of up to 3.6 knots. The predicted tides at Barrack St were 0.78 m at 3:20 am (low tide) and 1.05 m at 1:53 pm (high tide). Perth recorded 7.8 mm of rainfall in the week prior to sampling (Bureau of Meteorology).

Oxygenation: The Bacon St and Nicholson Rd oxygenation plants were triggered to provide oxygen in the 24 hours prior to sampling.

Canning Estuary (SCB2 to CASMID): The Canning Estuary was hypersaline at SCB2, saline over hypersaline at SAL, saline at RIV and brackish over saline at CASMID. Waters were oxygenated or well oxygenated, except for bottom waters at RIV which were low in oxygen and CASMID which were anoxic. Chlorophyll fluorescence was low and water temperatures ranged from 19.0 to 20.5 °C at the time of sampling.

Lower Canning River (KEN to ELL): The Lower Canning River was fresh, waters were oxygenated or well oxygenated and chlorophyll fluorescence was low. Water temperatures ranged from 17.6 to 19.1 °C at the time of sampling.

NB: Profile plots are visual interpolations of measured parameters only. Detailed data are available at wir.water.wa.gov.au.

Oxygenation Plant Operational Status:
- Operating for part or all of the 24 hours prior to sampling
- Operable but not triggered to operate in the 24 hours prior to sampling
- Inoperable for part or all of the 24 hours prior to sampling

Definitions:
Salinity – fresh <5, brackish 5-25, saline 25-35, hypersaline >35
Dissolved oxygen – well oxygenated >6 mg L^{-1}, oxygenated >4-6 mg L^{-1}, low oxygen >2-4 mg L^{-1}, hypoxic 0.5-2 mg L^{-1}, anoxic <0.5 mg L^{-1}
Chlorophyll fluorescence (low flow): low < 50 µg L^{-1}, moderate 50-150 µg L^{-1}, high 150-400 µg L^{-1}, extreme > 400 µg L^{-1}

Recommended reference: Department of Biodiversity, Conservation and Attractions 2025. *Swan Canning Estuary water quality profile report, Canning Estuary and Lower Canning River 6 May 2025.* Rivers and Estuaries Science (https://www.dpaw.wa.gov.au/management/swan-canning-riverpark)

GOVERNMENT OF WESTERN AUSTRALIA

Dandjoo Species List Export

Created by Guest User on 16 May 2025

Source	Dandjoo – Department of Biodiversity, Conservation and Attractions
Method	User defined circle: [[115.85173, -32.0102]] 2.0 km.
Date time	2025-05-16T17:20:05.866649+08:00

Conservation status summary	Count
CD	1
CR	11
Cons code inherited from parent	6
EN	13
MI	13
MI, P4	1
None	374
OS	1
P1	11
P2	19
P3	34
P4	23
Parent of conservation listed taxa	11
VU	18
Total	**536**

Kingdoms	Count
Animalia	267
Bacteria	2
Fungi	20
Plantae	239
Protozoa	8
Total unique species	**536**

#	Class	Family	Name	Establishment	Conservation
Animalia					
1	Amphibia	Limnodynastidae	Heleioporus eyrei (Gray, 1845) *(Moaning Frog)*	native	
2	Amphibia	Limnodynastidae	Limnodynastes dorsalis (Gray, 1841)	native	
3	Amphibia	Myobatrachidae	Crinia georgiana Tschudi, 1838	native	
4	Amphibia	Myobatrachidae	Myobatrachus gouldii (Gray, 1841) *(Turtle Frog)*	native	
5	Amphibia	Pelodryadidae GÃ¼nther, 1858	Litoria moorei (Copland, 1957)	native	
6	Arachnida	None	Araneae Clerck, 1757		
7	Arachnida	Actinopodidae Simon, 1892	Missulena granulosa (O. P.-Cambridge, 1869)		
8	Arachnida	Actinopodidae Simon, 1892	Missulena occatoria Walckenaer, 1805		
9	Arachnida	Anamidae Simon, 1889	Aname L. Koch, 1873		
10	Arachnida	Araneidae Clerck,	Arachnura higginsi (L. Koch, 1872)		

		1757			
11	Arachnida	Araneidae Clerck, 1757	Backobourkia heroine (L. Koch, 1871)		
12	Arachnida	Araneidae Clerck, 1757	Dolophones Walckenaer, 1837		
13	Arachnida	Araneidae Clerck, 1757	Hortophora biapicata (L. Koch, 1871)		
14	Arachnida	Barychelidae Simon, 1892	Idiommata Ausserer, 1871		
15	Arachnida	Bothriuridae	Cercophonius sulcatus Kraepelin, 1908		
16	Arachnida	Buthidae C.L. Koch, 1837	Buthidae C.L. Koch, 1837		
17	Arachnida	Idiopidae Simon, 1889	Euoplos inornatus (Rainbow & Pulleine, 1918) *(inornate trapdoor spider (northern Jarrah Forest))*	native	P3
18	Arachnida	Idiopidae Simon, 1889	Idiosoma Ausserer, 1871		Parent of conservation listed taxa
19	Arachnida	Idiopidae Simon, 1889	Idiosoma sigillatum O. P.-Cambridge, 1870 *(Swan Coastal Plain shield-backed trapdoor spider)*	native	P3
20	Arachnida	Ixodidae	Amblyomma albolimbatum Neumann, 1906	uncertain	
21	Arachnida	Lamponidae Simon, 1893	Lampona brevipes L. Koch, 1872		
22	Arachnida	Lamponidae Simon, 1893	Lampona cylindrata (L. Koch, 1866)		
23	Arachnida	Lycosidae	Artoriopsis expolita (L. Koch, 1877)		
24	Arachnida	Lycosidae	Venator immansuetus (Simon, 1909)		
25	Arachnida	Lycosidae	Venatrix pullastra (Simon, 1909)		
26	Arachnida	Miturgidae Simon, 1889	Mituliodon tarantulinus (L. Koch, 1873)		
27	Arachnida	Nicodamidae Simon, 1897	Nicodamus mainae Harvey, 1995		
28	Arachnida	Oonopidae Simon, 1890	Grymeus Harvey, 1987		
29	Arachnida	Pholcidae C.L. Koch, 1851	Pholcus phalangioides (Fuesslin, 1775)		
30	Arachnida	Segestriidae Simon, 1893	Ariadna Audouin, 1826	mixed	
31	Arachnida	Sparassidae Bertkau, 1872	Isopeda leishmanni Hogg, 1903		
32	Arachnida	Tetragnathidae	Tetragnatha demissa L. Koch, 1872		
33	Arachnida	Theridiidae Sundevall, 1833	Latrodectus hasselti Thorell, 1870		
34	Arachnida	Urodacidae	Urodacus novaehollandiae Peters, 1861		
35	Arachnida	Zodariidae Thorell, 1881	Neostorena Rainbow, 1914		
36	Aves	Accipitridae	Pandion haliaetus (Linnaeus, 1758)	native	MI
37	Aves	Anatidae	Anas gracilis Buller, 1869	native	
38	Aves	Anatidae	Anas superciliosa Gmelin, 1789	native	
39	Aves	Anatidae	Cereopsis novaehollandiae grisea (Viellot, 1818)	native	VU
40	Aves	Anatidae	Chenonetta jubata (Latham, 1802)	native	
41	Aves	Anatidae	Malacorhynchus membranaceus (Latham, 1802)	native	
42	Aves	Anatidae	Oxyura australis Gould, 1836	native	P4
43	Aves	Anhingidae	Anhinga melanogaster Pennant, 1769	native	
44	Aves	Ardeidae	Botaurus dubius Mathews, 1912	native	P4
45	Aves	Ardeidae	Botaurus flavicollis australis (Lesson, 1831)	native	P2
46	Aves	Ardeidae	Botaurus poiciloptilus (Wagler, 1827)	native	EN
47	Aves	Ardeidae	Egretta novaehollandiae (Latham, 1790)		
48	Aves	Artamidae	Gymnorhina tibicen dorsalis Campbell, 1895		
49	Aves	Cacatuidae	Calyptorhynchus banksii naso Gould, 1837	native	VU
50	Aves	Cacatuidae	Zanda Mathews, 1913		Parent of conservation

					listed taxa
51	Aves	Cacatuidae	Zanda baudinii Lear, 1832	native	EN
52	Aves	Cacatuidae	Zanda latirostris Carnaby, 1948	native	EN
53	Aves	Charadriidae	Charadrius cucullatus Vieillot, 1818 *(Hooded Plover)*	native	P4
54	Aves	Charadriidae	Charadrius melanops Vieillot, 1818	native	
55	Aves	Charadriidae	Erythrogonys cinctus Gould, 1838	native	
56	Aves	Cuculidae	Cacomantis flabelliformis flabelliformis (Latham, 1802)	native	
57	Aves	Diomedeidae	Diomedea exulans Linnaeus, 1758	native	VU
58	Aves	Diomedeidae	Phoebetria fusca (Hilsenberg, 1822)	native	EN
59	Aves	Diomedeidae	Thalassarche chlororhynchos (Gmelin, 1789)	native	VU
60	Aves	Diomedeidae	Thalassarche chrysostoma (J.R. Forster, 1785)	native	VU
61	Aves	Falconidae	Falco hypoleucos Gould, 1841 *(Grey Falcon)*	native	VU
62	Aves	Falconidae	Falco peregrinus Tunstall, 1771 *(Peregrine Falcon)*	native	OS
63	Aves	Falconidae	Falco peregrinus macropus Swainson, 1837	native	Cons code inherited from parent
64	Aves	Laridae	Anous stolidus pileatus (Scopoli, 1786)	native	Cons code inherited from parent
65	Aves	Laridae	Hydroprogne caspia (Pallas, 1770)	native	MI
66	Aves	Laridae	Onychoprion anaethetus anaethetus (Scopoli, 1786)		Cons code inherited from parent
67	Aves	Laridae	Sterna paradisaea Pontoppidan, 1763	native	MI
68	Aves	Laridae	Sternula nereis nereis Gould, 1843	native	VU
69	Aves	Laridae	Thalasseus bergii (Lichtenstein, 1823)	native	MI
70	Aves	Megapodiidae	Leipoa ocellata Gould, 1840	native	VU
71	Aves	Meliphagidae	Anthochaera carunculata (Shaw, 1790)	native	
72	Aves	Meliphagidae	Gavicalis virescens (Vieillot, 1817)	native	
73	Aves	Meliphagidae	Gavicalis virescens virescens Vieillot, 1817	native	
74	Aves	Meliphagidae	Manorina flavigula (Gould, 1840)	native	
75	Aves	Pardalotidae	Pardalotus striatus (Gmelin, 1789)	native	
76	Aves	Pelecanidae	Pelecanus conspicillatus Temminck, 1824	native	
77	Aves	Phalacrocoracidae	Microcarbo melanoleucos melanoleucos (Vieillot, 1817)		
78	Aves	Procellariidae	Ardenna carneipes (Gould, 1844)	native	VU
79	Aves	Procellariidae	Daption capense (Linnaeus, 1758)	native	
80	Aves	Procellariidae	Halobaena caerulea (Gmelin, 1789)	native	VU
81	Aves	Procellariidae	Macronectes giganteus (Gmelin, 1789)	native	MI
82	Aves	Procellariidae	Pachyptila desolata (Gmelin, 1789)	native	
83	Aves	Psittacidae	Pezoporus wallicus flaviventris North, 1911	native	CR
84	Aves	Rallidae	Fulica atra australis Gould, 1845	native	
85	Aves	Rallidae	Tribonyx ventralis (Gould, 1837)	native	
86	Aves	Recurvirostridae	Himantopus himantopus (Linnaeus, 1758)	native	
87	Aves	Rostratulidae	Rostratula australis (Gould, 1838) *(Australian Painted Snipe)*	native	EN
88	Aves	Scolopacidae	Calidris acuminata (Horsfield, 1821)	native	MI
89	Aves	Scolopacidae	Calidris ferruginea (Pontoppidan, 1763)	native	CR
90	Aves	Scolopacidae	Calidris ruficollis (Pallas, 1776)	native	MI
91	Aves	Scolopacidae	Calidris subminuta (Middendorff, 1853)	native	MI
92	Aves	Scolopacidae	Limosa limosa melanuroides Gould, 1846	native	Cons code inherited from parent
93	Aves	Scolopacidae	Numenius madagascariensis (Linnaeus, 1766) *(Eastern Curlew)*	native	CR
94	Aves	Scolopacidae	Tringa brevipes (Vieillot, 1816)	native	MI, P4
95	Aves	Scolopacidae	Tringa glareola Linnaeus, 1758	native	MI
96	Aves	Scolopacidae	Tringa nebularia (Gunnerus, 1767)	native	MI
97	Aves	Stercorariidae	Stercorarius parasiticus (Linnaeus, 1758)	native	MI
98	Aves	Strigidae	Ninox boobook boobook (Latham, 1801)	native	

99	Aves	Strigidae	Ninox connivens connivens (Latham, 1802) *(Barking owl (southwest subpop.))*	native	P3
100	Aves	Sulidae	Sula leucogaster plotus (J.R. Forster, 1844)	native	Cons code inherited from parent
101	Aves	Threskiornithidae	Platalea flavipes Gould, 1838	native	
102	Aves	Threskiornithidae	Plegadis falcinellus (Linnaeus, 1766)	native	MI
103	Aves	Threskiornithidae	Threskiornis spinicollis (Jameson, 1835)	native	
104	Aves	Tytonidae	Tyto novaehollandiae novaehollandiae (Stephens, 1826)	native	P3
105	Bivalvia	Hyriidae	Hyriidae		
106	Bivalvia	Hyriidae	Westralunio carteri Iredale, 1934 *(Carter's Freshwater Mussel)*	native	VU
107	Chilopoda Latreille, 1817	None	Chilopoda Latreille, 1817		
108	Chilopoda Latreille, 1817	Scolopendridae	Ethmostigmus rubripes (Brandt, 1840)		
109	Diplopoda de Blainville, 1844	Iulomorphidae Verhoeff, 1924	Podykipus Attems, 1911		
110	Diplopoda de Blainville, 1844	Paradoxosomatidae	Akamptogonus novarae (Humbert & de Saussure, 1869)		
111	Diplopoda de Blainville, 1844	Paradoxosomatidae	Antichiropus variabilis Attems, 1911		
112	Gastropoda	Lymnaeidae	Pseudosuccinea columella (Say, 1817)		
113	Insecta	None	Odonata		
114	Insecta	Aeshnidae	Adversaeschna brevistyla (Rambur, 1842)		
115	Insecta	Aeshnidae	Anax papuensis (Burmeister, 1839)		
116	Insecta	Alydidae	Leptocorisa Latreille, 1829		
117	Insecta	Amorphoscelidae	Gyromantis Giglio-Tos, 1913		
118	Insecta	Apidae	Amegilla (Notomegilla) chlorocyanea (Cockerell, 1914)		
119	Insecta	Ascalaphidae	Acmonotus McLachlan, 1871		
120	Insecta	Ascalaphidae	Acmonotus incusifer McLachlan, 1871		
121	Insecta	Ascalaphidae	Megacmonotus magnus (McLachlan, 1871)		
122	Insecta	Blattidae	Drymaplaneta heydeniana (Saussure, 1864)		
123	Insecta	Blattidae	Euzosteria femoralis (Walker, 1868)		
124	Insecta	Blattidae	Periplaneta americana (Linnaeus, 1758)		
125	Insecta	Blattidae	Platyzosteria fallax (Walker, 1868)		
126	Insecta	Bolboceratidae	Blackbolbus frontalis (GuÃ©rin-MÃ©neville, 1838)		
127	Insecta	Bombyliidae Latreille, 1802	Balaana abscondita Lambkin & Yeates, 2003		
128	Insecta	Buprestidae Leach, 1815	Buprestidae Leach, 1815		
129	Insecta	Buprestidae Leach, 1815	Castiarina anchoralis (Gory & Laporte, 1838)		
130	Insecta	Buprestidae Leach, 1815	Castiarina picta (Gory & Laporte, 1838)		
131	Insecta	Buprestidae Leach, 1815	Diphucrania Dejean, 1833		
132	Insecta	Buprestidae Leach, 1815	Diphucrania parva (Blackburn, 1887)		
133	Insecta	Buprestidae Leach, 1815	Diphucrania viridipurpurea (Carter, 1924)		
134	Insecta	Buprestidae Leach, 1815	Temognatha conspicillata (White, 1843)		
135	Insecta	Buprestidae Leach, 1815	Temognatha lessonii (Gory, 1841)		
136	Insecta	Callipappidae	Callipappus GuÃ©rin MÃ©neville, 1841		
137	Insecta	Carabidae Latreille, 1802	Mecyclothorax (Mecyclothorax) punctipennis (Macleay, 1871)		
138	Insecta	Castniidae	Synemon gratiosa Westwood, 1877 *(Graceful Sunmoth)*	native	P4
139	Insecta	Cerambycidae	Bimia bicolor White, 1850		
140	Insecta	Cercopidae	Bathyllus albicinctus (Erichson, 1842)		

141	Insecta	Chrysomelidae	Calomela maculicollis (Boisduval, 1835)		
142	Insecta	Chrysomelidae	Chrysomelidae		
143	Insecta	Cicadellidae Latreille, 1825	Hishimonus Ishihara, 1953		
144	Insecta	Cicadidae	Arenopsaltria fullo (Walker, 1850)		
145	Insecta	Cicadidae	Cicadidae		
146	Insecta	Clusiidae	Heteromeringia norrisi McAlpine, 1960		
147	Insecta	Colletidae	Leioproctus (Colletopsis) contrarius Michener, 1965 *(a short-tongued bee)*	native	P3
148	Insecta	Colletidae	Leioproctus (Leioproctus) Smith, 1853		
149	Insecta	Corduliidae	Hemicordulia tau (Selys, 1871)		
150	Insecta	Coreidae	Mictis profana (Fabricius, 1803)		
151	Insecta	Crabronidae	Pison		
152	Insecta	Curculionidae	Acantholophus hypoleucus (Boheman, 1842)		
153	Insecta	Curculionidae	Phlyctinus callosus (Schoenherr, 1826)		
154	Insecta	Curculionidae	Sitona discoideus Gyllenhal, 1834		
155	Insecta	Dermestidae	Anthrenus (Nathrenus) verbasci (Linnaeus, 1767)		
156	Insecta	Dytiscidae	Cybister tripunctatus (Olivier, 1795)		
157	Insecta	Dytiscidae	Lancetes lanceolatus (Clark, 1863)		
158	Insecta	Dytiscidae	Rhantus suturalis (W. S. Macleay, 1825)		
159	Insecta	Flatidae	Siphanta acuta (Walker, 1851)		
160	Insecta	Formicidae Latreille, 1809	Formicidae Latreille, 1809		
161	Insecta	Hesperiidae Latreille, 1809	Anisynta sphenosema (Meyrick & Lower, 1902)		
162	Insecta	Hesperiidae Latreille, 1809	Cephrenes augiades sperthias (C. Felder, 1862)		
163	Insecta	Hesperiidae Latreille, 1809	Hesperilla chrysotricha chrysotricha (Meyrick & Lower, 1902)		
164	Insecta	Hesperiidae Latreille, 1809	Hesperilla donnysa albina Waterhouse, 1932		
165	Insecta	Hesperiidae Latreille, 1809	Taractrocera papyria agraulia (Hewitson, 1868)		
166	Insecta	Hydrophilidae Latreille, 1802	Enochrus (Methydrus) eyrensis (Blackburn, 1895)		
167	Insecta	Hydrophilidae Latreille, 1802	Paracymus pygmaeus (W. J. Macleay, 1871)		
168	Insecta	Leiodidae	Eublackburniella Jeannel, 1938		
169	Insecta	Lestidae	Austrolestes annulosus (Selys, 1862)		
170	Insecta	Libellulidae	Nannophya dalei (Tillyard, 1908)		
171	Insecta	Libellulidae	Tramea stenoloba (Watson, 1962)		
172	Insecta	Lycaenidae	Lampides boeticus (Linnaeus, 1767)		
173	Insecta	Lygaeidae	Melanerythrus mactans (StÃ¥l, 1866)		
174	Insecta	Mantidae	Orthodera gunnii (Le Guillou, 1841)		
175	Insecta	Megachilidae	Megachile (Eutricharaea) chrysopyga Smith, 1853		
176	Insecta	Nemopteridae	Chasmoptera huttii (Westwood, 1848)		
177	Insecta	Nitidulidae Latreille, 1802	Urophorus humeralis (Fabricius, 1798)		
178	Insecta	Noctuidae Latreille, 1809	Australothis rubrescens (Walker, 1858)		
179	Insecta	Noctuidae Latreille, 1809	Helicoverpa punctigera (Wallengren, 1860)		
180	Insecta	Nymphalidae Rafinesque, 1815	Danaus chrysippus petilia (Stoll, 1790)		
181	Insecta	Nymphalidae Rafinesque, 1815	Danaus petilia (Stoll, 1790)		
182	Insecta	Nymphalidae Rafinesque, 1815	Danaus plexippus (Linnaeus, 1758)		
183	Insecta	Nymphalidae Rafinesque, 1815	Geitoneura klugii (GuÃ©rin-MÃ©neville, 1830)		

184	Insecta	Nymphalidae Rafinesque, 1815	Geitoneura minyas (Waterhouse & Lyell, 1914)		
185	Insecta	Nymphalidae Rafinesque, 1815	Hypolimnas bolina nerina (Fabricius, 1775)		
186	Insecta	Nymphalidae Rafinesque, 1815	Vanessa itea (Fabricius, 1775)		
187	Insecta	Nymphalidae Rafinesque, 1815	Vanessa kershawi (McCoy, 1868)		
188	Insecta	Pentatomidae	Alcaeus lignicolor Walker, 1867		
189	Insecta	Pentatomidae	Cermatulus nasalis (Westwood, 1837)		
190	Insecta	Pentatomidae	Dictyotus caenosus (Westwood, 1837)		
191	Insecta	Pentatomidae	Dictyotus conspicuus Gross, 1975		
192	Insecta	Pentatomidae	Nezara viridula (Linnaeus, 1758)		
193	Insecta	Pentatomidae	Poecilometis apicalis		
194	Insecta	Pentatomidae	Poecilometis lineatus (Westwood, 1837)		
195	Insecta	Pentatomidae	Poecilometis punctiventris (StÃ¥l, 1876)		
196	Insecta	Pentatomidae	Poecilometis vermiculatus (Bergroth, 1916)		
197	Insecta	Pentatomidae	Pseudapines geminata (Van Duzee, 1905)		
198	Insecta	Pentatomidae	Theseus modestus		
199	Insecta	Pieridae	Pieris rapae rapae (Linnaeus, 1758)		
200	Insecta	Pipunculidae Walker, 1824	Claraeola erinys (Perkins, 1905)		
201	Insecta	Reduviidae	Coranus mundus (Miller, 1954)		
202	Insecta	Reduviidae	Ischnolestes consputus StÃ¥l, 1866		
203	Insecta	Rhinotermitidae	Coptotermes michaelseni Silvestri, 1909		
204	Insecta	Rhipiceridae	Rhipicera Latreille, 1817		
205	Insecta	Rhyparochromidae	Arcleda fusca Malipatil, 1981		
206	Insecta	Rhyparochromidae	Dieuches Dohrn, 1860		
207	Insecta	Rhyparochromidae	Udeocoris Bergroth, 1918		
208	Insecta	Rhyparochromidae	Udeocoris nigroaeneus (Erichson, 1842)		
209	Insecta	Saldidae	Saldula brevicornis Rimes, 1951		
210	Insecta	Scarabaeidae	Diphucephala Dejean, 1821		
211	Insecta	Scutelleridae	Choerocoris paganus (Fabricius, 1775)		
212	Insecta	Synthemistidae	Archaeosynthemis occidentalis Tillyard, 1910		
213	Insecta	Tachinidae Robineau-Desvoidy, 1830	Rutilia (Chrysorutilia) caeruleata Enderlein, 1936		
214	Insecta	Termitidae	Amitermes conformis Gay, 1968		
215	Malacostraca	Parastacidae	Cherax preissii (Erichson, 1846)		
216	Malacostraca	Parastacidae	Cherax tenuimanus Smith, 2002	native	CR
217	Malacostraca	Platyarthridae Verhoeff, 1949	Platyarthridae Verhoeff, 1949		
218	Mammalia	Dasyuridae	Dasyurus geoffroii Gould, 1841	native	VU
219	Mammalia	Dasyuridae	Dasyurus geoffroii fortis Thomas, 1906 *(Chuditch)*	native	Cons code inherited from parent
220	Mammalia	Dasyuridae	Dasyurus hallucatus Gould, 1842 *(Northern Quoll)*	native	EN
221	Mammalia	Dasyuridae	Parantechinus apicalis (Gray, 1842) *(Dibbler)*	native	EN
222	Mammalia	Dasyuridae	Phascogale tapoatafa wambenger Aplin, Rhind, Ten Have & Chesser, 2015 *(South-western Brush-tailed Phascogale)*	native	CD
223	Mammalia	Delphinidae	Tursiops aduncus (Ehrenberg, 1833)	native	MI
224	Mammalia	Felidae	Felis catus Linnaeus, 1758 *(Cat)*	alien	
225	Mammalia	Macropodidae	Notamacropus irma (Jourdan, 1837)	native	P4
226	Mammalia	Macropodidae	Setonix brachyurus (Quoy & Gaimard, 1830) *(Quokka)*	native	VU
227	Mammalia	Muridae	Hydromys chrysogaster Geoffroy, 1804 *(Water-rat)*	native	P4
228	Mammalia	Muridae	Mus musculus Linnaeus, 1758 *(House Mouse)*	alien	
229	Mammalia	Muridae	Rattus norvegicus (Berkenhout, 1769) *(Brown Rat)*	alien	

230	Mammalia	Myrmecobiidae	Myrmecobius fasciatus Waterhouse, 1836 *(Numbat)*	native	EN
231	Mammalia	Otariidae	Arctocephalus tropicalis (Gray, 1872) *(Subantarctic fur-seal)*	native	VU
232	Mammalia	Peramelidae	Isoodon fusciventer (Gray, 1841)	native	P4
233	Mammalia	Peramelidae	Isoodon obesulus (Shaw, 1797)	native	
234	Mammalia	Phalangeridae	Trichosurus vulpecula hypoleucus (Wagner, 1855)	native	
235	Mammalia	Pseudocheiridae	Pseudocheirus occidentalis (Thomas, 1888) *(Western Ringtail Possum)*	native	CR
236	Mammalia	Sciuridae	Funambulus pennanti Wroughton, 1905 *(Indian Palm Squirrel)*	alien	
237	Mammalia	Tachyglossidae	Tachyglossus aculeatus acanthion Collet, 1884 *(Short-beaked Echidna)*	native	
238	Mammalia	Vespertilionidae	Chalinolobus gouldii (Gray, 1841) *(Gould's Wattled Bat)*	native	
239	Reptilia	Agamidae	Pogona minor minor (Sternfeld, 1919) *(Western Bearded Dragon)*	native	
240	Reptilia	Chelidae	Pseudemydura umbrina Siebenrock, 1901 *(Western Swamp Tortoise)*	native	CR
241	Reptilia	Cheloniidae	Chelonia mydas (Linnaeus, 1758) *(Green Turtle)*	native	VU
242	Reptilia	Dermochelyidae	Dermochelys coriacea (Vandelli, 1761) *(Leatherback Turtle)*	native	VU
243	Reptilia	Elapidae	Brachyurophis semifasciatus (GÃ¼nther, 1863) *(Southern Shovel-nosed Snake)*	native	
244	Reptilia	Elapidae	Demansia reticulata (Gray, 1842) *(Reticulated Whipsnake)*		
245	Reptilia	Elapidae	Narophis bimaculatus (A.M.C. DumÃ©ril, Bibron & A. DumÃ©ril, 1854) *(Black-naped Burrowing Snake)*		
246	Reptilia	Elapidae	Neelaps calonotos (A.M.C. DumÃ©ril, Bibron & A. DumÃ©ril, 1854) *(Black-striped Snake)*	native	P3
247	Reptilia	Elapidae	Pseudonaja affinis affinis GÃ¼nther, 1872 *(Dugite)*	native	
248	Reptilia	Elapidae	Pseudonaja affinis tanneri (Worrell, 1961) *(Pygmy Dugite)*	native	P4
249	Reptilia	Elapidae	Simoselaps bertholdi (Jan, 1859) *(Jan's Banded Snake)*	native	
250	Reptilia	Elapidae	Suta gouldii (Gray, 1841) *(Gould's Hooded Snake)*		
251	Reptilia	Gekkonidae	Christinus marmoratus (Gray, 1845) *(Marbled Gecko)*	native	
252	Reptilia	Gekkonidae	Gehyra variegata (DumÃ©ril & Bibron, 1836) *(Variegated Gehyra)*	native	
253	Reptilia	Pygopodidae	Delma fraseri Gray, 1831 *(Fraser's Delma, Fraser's Legless Lizard)*	native	
254	Reptilia	Pygopodidae	Lialis burtonis Gray, 1835 *(Burton's Snake-lizard)*	native	
255	Reptilia	Pygopodidae	Pletholax gracilis Cope, 1864 *(West Coast Keeled Legless Gecko)*	native	
256	Reptilia	Scincidae	Cryptoblepharus buchananii (Gray, 1838) *(Buchanan's Snake-eyed Skink)*	native	
257	Reptilia	Scincidae	Ctenotus australis (Gray, 1838) *(West Coast Long-tailed Ctenotus)*	native	
258	Reptilia	Scincidae	Ctenotus gemmula Storr, 1974 *(Jewelled South-west Ctenotus (Swan Coastal Plain subpop P3))*	native	Parent of conservation listed taxa
259	Reptilia	Scincidae	Hemiergis quadrilineatus (Dumeril, Shaw & Bibron, 1839)	native	
260	Reptilia	Scincidae	Lerista elegans (Gray, 1845) *(Elegant Slider)*	native	
261	Reptilia	Scincidae	Lerista lineata Bell, 1883	native	P3
262	Reptilia	Scincidae	Menetia greyii Gray, 1845 *(Common Dwarf Skink)*	native	
263	Reptilia	Scincidae	Morethia lineoocellata (Dumeril & Bibron, 1839) *(West Coast Morethia Skink)*	native	
264	Reptilia	Scincidae	Tiliqua occipitalis (Peters, 1863) *(Western Blue-tongue Skink)*	native	
265	Reptilia	Scincidae	Tiliqua rugosa rugosa (Gray, 1825) *(Bobtail)*	native	
266	Reptilia	Typhlopidae Merrem, 1820	Anilios australis Gray, 1845 *(Southern Blind Snake)*	native	
267	Scyphozoa Goette, 1887	Pelagiidae	Chrysaora kynthia Gershwin & Zeidler, 2008		

Bacteria

268	Cyanophyceae	Oscillatoriaceae Engl.	Lyngbya C.Agardh		
269	Cyanophyceae	Trichocoleusaceae T.Mai & J.R.Johans.	Trichocoleus acutissimus (N.L.Gardner) Anagn.	native	

Fungi

270	Ascomycetes	Morchellaceae	Morchella Pers.		
271	Ascomycetes	Pyronemataceae Corda	Byssonectria fusispora (Berk.) Rogerson & Korf	native	
272	Basidiomycetes	Amanitaceae Pouzar	Amanita brunneola E.M.Davison & Guistiniano	native	P2
273	Basidiomycetes	Amanitaceae Pouzar	Amanita carneiphylla O.K.Mill.	native	P3
274	Basidiomycetes	Amanitaceae Pouzar	Amanita cretaceaverruca E.M.Davison & Guistiniano	native	P2
275	Basidiomycetes	Amanitaceae Pouzar	Amanita drummondii E.M.Davison	native	P3
276	Basidiomycetes	Amanitaceae Pouzar	Amanita fibrillopes O.K.Mill.	native	P3
277	Basidiomycetes	Amanitaceae Pouzar	Amanita preissii (Fr.) Sacc.	native	P3
278	Basidiomycetes	Amanitaceae Pouzar	Amanita quenda E.M.Davison	native	P1
279	Basidiomycetes	Amanitaceae Pouzar	Amanita wadjukiorum E.M.Davison	native	P3
280	Basidiomycetes	Amanitaceae Pouzar	Amanita wadulawitu L.E.McGurk, E.M.Davison & E.L.J.Watkin	native	P2
281	Basidiomycetes	Cortinariaceae Pouzar	Cortinarius (Pers.) Gray		
282	Basidiomycetes	Hymenochaetaceae Donk	Hymenochaete semistupposa Petch	native	
283	Basidiomycetes	Hymenochaetaceae Donk	Tubulicrinis calothrix (Pat.) Donk	native	
284	Basidiomycetes	Schizophyllaceae	Schizophyllum commune Fr.	native	
285	Basidiomycetes	Sclerodermataceae Corda	Pisolithus arhizus (Scop.) Rauschert	alien	
286	Basidiomycetes	Sclerodermataceae Corda	Scleroderma Pers.		
287	Lecanoromycetes	Cladoniaceae Zenker	Cladia schizopora (Nyl.) Nyl.	native	
288	Lecanoromycetes	Collemataceae Zenker	Leptogium wilsonii Zahlbr.		
289	Sordariomycetes	Xylariaceae Tul. & C.Tul.	Xylaria Schrank		

Plantae

290	Florideophyceae	Champiaceae KÃ¼tz.	Champia stipitata Huisman	native	
291	Florideophyceae	Gracilariaceae NÃ¤geli	Gracilaria transtasmanica (M.Preuss, N.Muangmai & Zuccarello) Lyra, Iha, J.M.C.Nunes & C.C.Davis	alien	
292	Liliopsida	Anarthriaceae D.F.Cutler & Airy Shaw	Lyginia excelsa B.G.Briggs & L.A.S.Johnson	native	P2
293	Liliopsida	Anarthriaceae D.F.Cutler & Airy Shaw	Lyginia imberbis R.Br.	native	
294	Liliopsida	Araceae Juss.	Lazarum peltandroides (A.Hay, M.D.Barrett & R.L.Barrett) M.D.Barrett, A.Hay & Hett	native	P1
295	Liliopsida	Asparagaceae Juss.	Dichopogon capillipes (Endl.) Brittan	native	
296	Liliopsida	Asparagaceae Juss.	Laxmannia squarrosa Lindl.	native	
297	Liliopsida	Asparagaceae Juss.	Lomandra nigricans T.Macfarlane	native	
298	Liliopsida	Asphodelaceae Juss.	Asphodelus fistulosus L.	alien	
299	Liliopsida	Colchicaceae DC.	Burchardia congesta Lindl. *(Milkmaids)*	native	
300	Liliopsida	Cyperaceae Juss.	Chaetospora curvifolia R.Br.	native	
301	Liliopsida	Cyperaceae Juss.	Chorizandra enodis Nees *(Black Bristlerush)*	native	
302	Liliopsida	Cyperaceae Juss.	Cyathochaeta teretifolia W.Fitzg.	native	P3
303	Liliopsida	Cyperaceae Juss.	Cyperus polystachyos Rottb.	mixed	
304	Liliopsida	Cyperaceae Juss.	Cyperus tenuiflorus Rottb.	alien	
305	Liliopsida	Cyperaceae Juss.	Ficinia nodosa (Rottb.) Goetgh., Muasya & D.A.Simpson *(Knotted Club Rush)*	native	
306	Liliopsida	Cyperaceae Juss.	Lepidosperma gladiatum Labill.	native	
307	Liliopsida	Cyperaceae Juss.	Machaerina juncea (R.Br.) T.Koyama *(Bare Twigrush)*	native	
308	Liliopsida	Cyperaceae Juss.	Machaerina preissii (Nees) L.A.S.Johnson & T.Koyama	native	
309	Liliopsida	Cyperaceae Juss.	Netrostylis sp. Chandala (G.J. Keighery 17055)	native	P2
310	Liliopsida	Cyperaceae Juss.	Schoenus capillifolius D.A.Cooke	native	P3

311	Liliopsida	Cyperaceae Juss.	Schoenus subfascicularis KÃ¼k.	native	
312	Liliopsida	Dasypogonaceae Dumort.	Calectasia grandiflora L.Preiss *(Blue Tinsel Lily)*	native	P2
313	Liliopsida	Dasypogonaceae Dumort.	Calectasia narragara R.L.Barrett & K.W.Dixon	native	
314	Liliopsida	Haemodoraceae R.Br.	Anigozanthos humilis Lindl. subsp. humilis	native	
315	Liliopsida	Haemodoraceae R.Br.	Conostylis bracteata Lindl.	native	P3
316	Liliopsida	Haemodoraceae R.Br.	Haemodorum spicatum R.Br.	native	
317	Liliopsida	Hemerocallidaceae R.Br.	Arnocrinum preissii Endl.	native	
318	Liliopsida	Hemerocallidaceae R.Br.	Chamaescilla corymbosa var. paradoxa (Endl.) R.J.F.Hend.	native	
319	Liliopsida	Hemerocallidaceae R.Br.	Johnsonia pubescens Lindl.	native	
320	Liliopsida	Hemerocallidaceae R.Br.	Johnsonia pubescens subsp. cygnorum Keighery	native	P2
321	Liliopsida	Hemerocallidaceae R.Br.	Tricoryne elatior R.Br. *(Yellow Autumn Lily)*	native	
322	Liliopsida	Iridaceae Juss.	Gladiolus caryophyllaceus (Burm.f.) Poir.	alien	
323	Liliopsida	Iridaceae Juss.	Moraea flaccida (Sweet) Steud. *(One-leaf Cape Tulip)*	alien	
324	Liliopsida	Iridaceae Juss.	Romulea flava var. minor (Beg.) M.P.deVos	alien	
325	Liliopsida	Juncaceae Juss.	Juncus caespiticius E.Mey.	native	
326	Liliopsida	Juncaceae Juss.	Juncus kraussii subsp. australiensis (Buchenau) Snogerup	native	
327	Liliopsida	Juncaceae Juss.	Juncus pallidus R.Br.	native	
328	Liliopsida	Juncaceae Juss.	Luzula meridionalis H.Nordensk. *(Field Woodrush)*	native	
329	Liliopsida	Juncaginaceae Rich.	Triglochin striata Ruiz & Pav.	native	
330	Liliopsida	Orchidaceae Juss.	Caladenia denticulata Lindl.	native	
331	Liliopsida	Orchidaceae Juss.	Caladenia flava R.Br. subsp. flava *(Cowslip Orchid)*	native	
332	Liliopsida	Orchidaceae Juss.	Caladenia huegelii Rchb.f. *(Grand Spider Orchid)*	native	CR
333	Liliopsida	Orchidaceae Juss.	Cyanicula ixioides (Lindl.) Hopper & A.P.Br.	native	Parent of conservation listed taxa
334	Liliopsida	Orchidaceae Juss.	Diuris drummondii Lindl.	native	EN
335	Liliopsida	Orchidaceae Juss.	Diuris longifolia R.Br.	native	
336	Liliopsida	Orchidaceae Juss.	Diuris magnifica D.L.Jones	native	
337	Liliopsida	Orchidaceae Juss.	Prasophyllum plumiforme Fitzg. *(Dainty Leek Orchid)*	native	
338	Liliopsida	Orchidaceae Juss.	Pterostylis R.Br. *(Greenhoods, Shell orchids, Snail orchids)*		
339	Liliopsida	Orchidaceae Juss.	Pterostylis aspera D.L.Jones & M.A.Clem. *(Brown-veined Shell Orchid)*	native	
340	Liliopsida	Orchidaceae Juss.	Pterostylis glebosa D.L.Jones & C.J.French *(Clubbed Snail Orchid)*	native	
341	Liliopsida	Orchidaceae Juss.	Pterostylis sanguinea D.L.Jones & M.A.Clem. *(Dark Banded Greenhood)*	native	
342	Liliopsida	Orchidaceae Juss.	Pterostylis vittata Lindl. *(Banded Greenhood)*	native	
343	Liliopsida	Orchidaceae Juss.	Thelymitra campanulata Lindl. *(Bell Sun Orchid, Shirt Orchid)*	native	
344	Liliopsida	Orchidaceae Juss.	Thelymitra variegata (Lindl.) F.Muell. *(Queen of Sheba)*	native	CR
345	Liliopsida	Poaceae Barnhart	Dactyloctenium australe Steud.	alien	
346	Liliopsida	Poaceae Barnhart	Lachnagrostis drummondiana (Steud.) S.W.L.Jacobs	native	P1
347	Liliopsida	Poaceae Barnhart	Lolium perenne x rigidum	alien	
348	Liliopsida	Poaceae Barnhart	Melinis repens (Willd.) Zizka	alien	
349	Liliopsida	Poaceae Barnhart	Micraira brevis M.D.Barrett & R.L.Barrett	native	Parent of conservation listed taxa
350	Liliopsida	Poaceae Barnhart	Poa annua L. *(Winter Grass)*	alien	
351	Liliopsida	Poaceae Barnhart	Rostraria cristata (L.) Tzvelev	alien	
352	Liliopsida	Restionaceae R.Br.	Desmocladus flexuosus (R.Br.) B.G.Briggs & L.A.S.Johnson	native	
353	Liliopsida	Xanthorrhoeaceae	Xanthorrhoea brunonis Endl. subsp. brunonis	native	

		Dumort.			
354	Liliopsida	Xanthorrhoeaceae Dumort.	Xanthorrhoea brunonis subsp. semibarbata D.J.Bedford	native	
355	Liliopsida	Xanthorrhoeaceae Dumort.	Xanthorrhoea preissii Endl.	native	
356	Magnoliopsida	Aizoaceae Martinov	Aizoon pubescens Eckl. & Zeyh. *(Coastal Galenia)*	alien	
357	Magnoliopsida	Aizoaceae Martinov	Tetragonia nigrescens Eckl. & Zeyh.	alien	
358	Magnoliopsida	Amaranthaceae Juss.	Amaranthus viridis L.	alien	
359	Magnoliopsida	Apiaceae Lindl.	Actinotus leucocephalus Benth.	native	
360	Magnoliopsida	Apiaceae Lindl.	Xanthosia huegelii (Benth.) Steud.	native	
361	Magnoliopsida	Araliaceae Juss.	Hydrocotyle lemnoides Benth. *(Aquatic Pennywort)*	native	P4
362	Magnoliopsida	Araliaceae Juss.	Hydrocotyle ranunculoides L.f.	alien	
363	Magnoliopsida	Araliaceae Juss.	Hydrocotyle striata Benth.	native	P1
364	Magnoliopsida	Asteraceae Bercht. & J.Presl	Angianthus micropodioides (Benth.) Benth.	native	P3
365	Magnoliopsida	Asteraceae Bercht. & J.Presl	Argyranthemum frutescens subsp. foeniculaceum (Pit. & Proust) Humphries	alien	
366	Magnoliopsida	Asteraceae Bercht. & J.Presl	Hyalosperma cotula (Benth.) Paul G.Wilson	native	
367	Magnoliopsida	Asteraceae Bercht. & J.Presl	Monoculus monstrosus (Burm.f.) B.Nord.	alien	
368	Magnoliopsida	Asteraceae Bercht. & J.Presl	Podotheca chrysantha (Steetz) Benth.	native	
369	Magnoliopsida	Brassicaceae Burnett	Raphanus raphanistrum L. *(Wild Radish)*	alien	
370	Magnoliopsida	Brassicaceae Burnett	Stenopetalum robustum Endl.	native	
371	Magnoliopsida	Byblidaceae Domin	Byblis gigantea Lindl. *(Rainbow Plant)*	native	P3
372	Magnoliopsida	Campanulaceae Juss.	Wahlenbergia capensis (L.) A.DC. *(Cape Bluebell)*	alien	
373	Magnoliopsida	Caryophyllaceae Juss.	Silene gallica var. quinquevulnera (L.) W.D.J.Koch	alien	
374	Magnoliopsida	Caryophyllaceae Juss.	Spergularia nesophila L.G.Adams	native	P3
375	Magnoliopsida	Celastraceae R.Br.	Tripterococcus sp. Brachylobus (A.S. George 14234)	native	P4
376	Magnoliopsida	Chenopodiaceae Vent.	Suaeda australis (R.Br.) Moq. *(Seablite)*	native	
377	Magnoliopsida	Convolvulaceae Juss.	Ipomoea cairica (L.) Sweet	alien	
378	Magnoliopsida	Crassulaceae J.St.-Hil.	Crassula decumbens Thunb.	native	
379	Magnoliopsida	Dilleniaceae Salisb.	Hibbertia leptotheca (J.R.Wheeler) K.R.Thiele	native	P3
380	Magnoliopsida	Dilleniaceae Salisb.	Hibbertia vaginata (Benth.) F.Muell.	native	
381	Magnoliopsida	Droseraceae Salisb.	Drosera bulbigena Morrison *(Midget Sundew)*	native	P2
382	Magnoliopsida	Droseraceae Salisb.	Drosera paleacea DC. *(Dwarf Sundew)*	native	P1
383	Magnoliopsida	Ericaceae Juss.	Brachyloma preissii Sond. *(Globe Heath)*	native	
384	Magnoliopsida	Ericaceae Juss.	Conostephium preissii Sond.	native	
385	Magnoliopsida	Ericaceae Juss.	Styphelia filifolia Hislop & Puente-Lel.	native	P3
386	Magnoliopsida	Ericaceae Juss.	Styphelia macrocalyx (Sond.) F.Muell. *(Swan Berry)*	native	
387	Magnoliopsida	Ericaceae Juss.	Styphelia stomarrhena (Sond.) Sleumer	native	
388	Magnoliopsida	Euphorbiaceae Juss.	Ricinocarpos tuberculatus MÃ¼ll.Arg.	native	P2
389	Magnoliopsida	Fabaceae Lindl.	Acacia applanata Maslin	native	
390	Magnoliopsida	Fabaceae Lindl.	Acacia benthamii Meisn. *(Bentham's Wattle)*	native	P2
391	Magnoliopsida	Fabaceae Lindl.	Acacia denticulosa F.Muell. *(Sandpaper Wattle)*	native	EN
392	Magnoliopsida	Fabaceae Lindl.	Acacia horridula Meisn.	native	P3
393	Magnoliopsida	Fabaceae Lindl.	Acacia lasiocarpa var. bracteolata long peduncle variant (G.J. Keighery 5026)	native	P1
394	Magnoliopsida	Fabaceae Lindl.	Acacia lasiocarpa var. lasiocarpa Cockleshell Gully variant (E.A. Griffin 2039)	native	P2
395	Magnoliopsida	Fabaceae Lindl.	Acacia lateriticola Maslin	native	Parent of conservation listed taxa
396	Magnoliopsida	Fabaceae Lindl.	Acacia nervosa DC.	native	

397	Magnoliopsida	Fabaceae Lindl.	Acacia oncinophylla subsp. patulifolia R.S.Cowan & Maslin	native	P4
398	Magnoliopsida	Fabaceae Lindl.	Acacia pycnocephala Maslin	native	
399	Magnoliopsida	Fabaceae Lindl.	Acacia saligna (Labill.) H.L.Wendl.	native	
400	Magnoliopsida	Fabaceae Lindl.	Bossiaea ornata (Lindl.) Benth. *(Broad Leaved Brown Pea)*	native	
401	Magnoliopsida	Fabaceae Lindl.	Daviesia nudiflora subsp. drummondii (Meisn.) Crisp	native	P3
402	Magnoliopsida	Fabaceae Lindl.	Dillwynia dillwynioides (Meisn.) Druce	native	P3
403	Magnoliopsida	Fabaceae Lindl.	Eutaxia virgata Benth.	native	
404	Magnoliopsida	Fabaceae Lindl.	Isotropis cuneifolia (Sm.) Heynh.	native	
405	Magnoliopsida	Fabaceae Lindl.	Jacksonia furcellata (Bonpl.) DC.	native	
406	Magnoliopsida	Fabaceae Lindl.	Jacksonia gracillima Chappill	native	P3
407	Magnoliopsida	Fabaceae Lindl.	Jacksonia sericea Benth. *(Waldjumi)*	native	P4
408	Magnoliopsida	Fabaceae Lindl.	Kennedia prostrata R.Br.	native	
409	Magnoliopsida	Fabaceae Lindl.	Latrobea tenella (Meisn.) Benth.	native	
410	Magnoliopsida	Fabaceae Lindl.	Loricobbia reticulata (Sm.) R.L.Barrett & T.Macfarlane	native	
411	Magnoliopsida	Fabaceae Lindl.	Lupinus cosentinii Guss.	alien	
412	Magnoliopsida	Fabaceae Lindl.	Medicago littoralis Loisel. *(Strand Medic)*	alien	
413	Magnoliopsida	Fabaceae Lindl.	Medicago polymorpha L.	alien	
414	Magnoliopsida	Fabaceae Lindl.	Melilotus indicus (L.) All.	alien	
415	Magnoliopsida	Fabaceae Lindl.	Ornithopus compressus L. *(Yellow Serradella)*	alien	
416	Magnoliopsida	Fabaceae Lindl.	Trifolium arvense L. var. arvense	alien	
417	Magnoliopsida	Fabaceae Lindl.	Trifolium dubium Sibth. *(Suckling Clover)*	alien	
418	Magnoliopsida	Fabaceae Lindl.	Trifolium hirtum All. *(Rose Clover)*	alien	
419	Magnoliopsida	Fabaceae Lindl.	Trifolium scabrum L.	alien	
420	Magnoliopsida	Fabaceae Lindl.	Vicia hirsuta (L.) Gray	alien	
421	Magnoliopsida	Geraniaceae Juss.	Pelargonium capitatum (L.) Aiton *(Rose Pelargonium)*	alien	
422	Magnoliopsida	Goodeniaceae R.Br.	Anthotium junciforme (de Vriese) D.A.Morrison	native	
423	Magnoliopsida	Goodeniaceae R.Br.	Dampiera triloba Lindl.	native	P3
424	Magnoliopsida	Goodeniaceae R.Br.	Lechenaultia expansa R.Br.	native	
425	Magnoliopsida	Haloragaceae R.Br.	Myriophyllum aquaticum (Vell.) Verdc.	alien	
426	Magnoliopsida	Lamiaceae Martinov	Dasymalla axillaris Endl.	native	CR
427	Magnoliopsida	Lamiaceae Martinov	Dicrastylis micrantha Munir	native	P3
428	Magnoliopsida	Lentibulariaceae Rich.	Utricularia menziesii R.Br.	native	
429	Magnoliopsida	Loranthaceae Juss.	Amyema miquelii (Miq.) Tiegh.	native	
430	Magnoliopsida	Loranthaceae Juss.	Nuytsia floribunda (Labill.) G.Don *(Christmas Tree)*	native	
431	Magnoliopsida	Malvaceae Juss.	Lasiopetalum membranaceum (Steud.) Benth.	native	P3
432	Magnoliopsida	Malvaceae Juss.	Thomasia pygmaea (Turcz.) Benth. *(Tiny Thomasia)*	native	P3
433	Magnoliopsida	Myrtaceae Juss.	Astartea fascicularis (Labill.) DC.	native	
434	Magnoliopsida	Myrtaceae Juss.	Calothamnus graniticus Hawkeswood	mixed	Parent of conservation listed taxa
435	Magnoliopsida	Myrtaceae Juss.	Calothamnus graniticus subsp. leptophyllus (Benth.) Hawkeswood	native	P4
436	Magnoliopsida	Myrtaceae Juss.	Calothamnus macrocarpus Hawkeswood	native	P2
437	Magnoliopsida	Myrtaceae Juss.	Calytrix fraseri A.Cunn.	native	
438	Magnoliopsida	Myrtaceae Juss.	Corymbia calophylla (Lindl.) K.D.Hill & L.A.S.Johnson *(Marri)*	native	
439	Magnoliopsida	Myrtaceae Juss.	Eremaea pauciflora (Endl.) Druce var. pauciflora	native	
440	Magnoliopsida	Myrtaceae Juss.	Eremaea violacea subsp. raphiophylla Hnatiuk	native	
441	Magnoliopsida	Myrtaceae Juss.	Eucalyptus caesia Benth. *(Caesia)*	native	Parent of conservation listed taxa
442	Magnoliopsida	Myrtaceae Juss.	Eucalyptus caesia Benth. subsp. caesia	native	P4
443	Magnoliopsida	Myrtaceae Juss.	Eucalyptus caesia subsp. magna Brooker & Hopper	native	P4
444	Magnoliopsida	Myrtaceae Juss.	Eucalyptus educta L.A.S.Johnson & K.D.Hill	native	P2
445	Magnoliopsida	Myrtaceae Juss.	Eucalyptus foecunda Schauer subsp. foecunda	native	P4
446	Magnoliopsida	Myrtaceae Juss.	Eucalyptus gomphocephala DC.	mixed	
447	Magnoliopsida	Myrtaceae Juss.	Eucalyptus kruseana F.Muell.	native	P4

448	Magnoliopsida	Myrtaceae Juss.	Eucalyptus rhodantha Blakely & H.Steedman *(Rose Mallee, Scott's Mallee)*	native	Parent of conservation listed taxa
449	Magnoliopsida	Myrtaceae Juss.	Eucalyptus rhodantha Blakely & H.Steedman var. rhodantha	native	EN
450	Magnoliopsida	Myrtaceae Juss.	Eucalyptus stoatei C.A.Gardner *(Scarlet Pear Gum)*	native	P4
451	Magnoliopsida	Myrtaceae Juss.	Eucalyptus x mundijongensis Maiden	native	P1
452	Magnoliopsida	Myrtaceae Juss.	Hypocalymma balbakiae Tauss & Rye *(Balbakâ€™s White Myrtle)*	native	
453	Magnoliopsida	Myrtaceae Juss.	Hypocalymma inopinatum Rye, Keighery & M.D.Barrett		P2
454	Magnoliopsida	Myrtaceae Juss.	Hypocalymma magnificum Rye, Keighery & M.D.Barrett *(Superb Myrtle)*	native	EN
455	Magnoliopsida	Myrtaceae Juss.	Hypocalymma quadrangulare Rye & Keighery *(West Coast Myrtle)*	native	P3
456	Magnoliopsida	Myrtaceae Juss.	Kunzea glabrescens Toelken	native	
457	Magnoliopsida	Myrtaceae Juss.	Melaleuca lateritia A.Dietr. *(Robin Redbreast Bush)*	native	
458	Magnoliopsida	Myrtaceae Juss.	Melaleuca lutea Craven	native	
459	Magnoliopsida	Myrtaceae Juss.	Melaleuca nematophylla Craven *(Wiry Honey-myrtle)*	native	
460	Magnoliopsida	Myrtaceae Juss.	Melaleuca parviceps Lindl.	native	
461	Magnoliopsida	Myrtaceae Juss.	Melaleuca pauciflora Turcz.	native	
462	Magnoliopsida	Myrtaceae Juss.	Melaleuca rhaphiophylla Schauer	native	
463	Magnoliopsida	Myrtaceae Juss.	Melaleuca urceolaris Benth.	native	
464	Magnoliopsida	Myrtaceae Juss.	Melaleuca viminalis (Gaertn.) Byrnes	native	Parent of conservation listed taxa
465	Magnoliopsida	Myrtaceae Juss.	Melaleuca viminea Lindl. subsp. viminea	native	
466	Magnoliopsida	Myrtaceae Juss.	Verticordia acerosa var. preissii (Schauer) A.S.George	native	
467	Magnoliopsida	Myrtaceae Juss.	Verticordia lindleyi Schauer subsp. lindleyi	native	P4
468	Magnoliopsida	Myrtaceae Juss.	Verticordia venusta A.S.George	native	P3
469	Magnoliopsida	Onagraceae Juss.	Oenothera laciniata Hill	alien	
470	Magnoliopsida	Orobanchaceae Vent.	Orobanche minor Sm. *(Lesser Broomrape)*	alien	
471	Magnoliopsida	Oxalidaceae R.Br.	Oxalis pes-caprae L.	alien	
472	Magnoliopsida	Papaveraceae Juss.	Fumaria capreolata L. *(Whiteflower Fumitory)*	alien	
473	Magnoliopsida	Papaveraceae Juss.	Fumaria muralis W.D.J.Koch subsp. muralis	alien	
474	Magnoliopsida	Phyllanthaceae Martinov	Poranthera moorokatta R.L.Barrett	native	P2
475	Magnoliopsida	Pittosporaceae R.Br.	Billardiera fusiformis Labill. *(Australian Bluebell)*	native	
476	Magnoliopsida	Pittosporaceae R.Br.	Marianthus mollis (E.M.Benn.) L.Cayzer & Crisp	native	P4
477	Magnoliopsida	Plumbaginaceae Juss.	Limonium Mill.		
478	Magnoliopsida	Polygonaceae Juss.	Rumex crispus L. *(Curled Dock)*	alien	
479	Magnoliopsida	Portulacaceae Juss.	Talinum paniculatum (Jacq.) Gaertn.		
480	Magnoliopsida	Primulaceae Borkh.	Samolus junceus R.Br.	native	
481	Magnoliopsida	Proteaceae Juss.	Adenanthos cygnorum subsp. chamaephyton E.C.Nelson	native	P3
482	Magnoliopsida	Proteaceae Juss.	Banksia menziesii R.Br.	native	
483	Magnoliopsida	Proteaceae Juss.	Banksia nivea Labill.	native	
484	Magnoliopsida	Proteaceae Juss.	Banksia sphaerocarpa R.Br.	native	
485	Magnoliopsida	Proteaceae Juss.	Banksia telmatiaea A.S.George	native	
486	Magnoliopsida	Proteaceae Juss.	Conospermum huegelii Endl.	mixed	
487	Magnoliopsida	Proteaceae Juss.	Conospermum triplinervium R.Br. *(Tree Smokebush)*	native	
488	Magnoliopsida	Proteaceae Juss.	Conospermum undulatum Lindl.	native	VU
489	Magnoliopsida	Proteaceae Juss.	Grevillea asparagoides Meisn.	native	P3
490	Magnoliopsida	Proteaceae Juss.	Grevillea candolleana Meisn.	native	P2
491	Magnoliopsida	Proteaceae Juss.	Grevillea endlicheriana Meisn. *(Spindly Grevillea)*	native	Parent of conservation listed taxa
492	Magnoliopsida	Proteaceae Juss.	Grevillea fililoba (McGill.) Olde & Marriott	native	P1
493	Magnoliopsida	Proteaceae Juss.	Grevillea ornithopoda Meisn.	native	P2

494	Magnoliopsida	Proteaceae Juss.	Grevillea pimeleoides W.Fitzg.	native	P4
495	Magnoliopsida	Proteaceae Juss.	Grevillea pinifolia Meisn. *(Pine-leaved Grevillea)*	native	P1
496	Magnoliopsida	Proteaceae Juss.	Grevillea thelemanniana Endl. *(Spider Net Grevillea)*	native	CR
497	Magnoliopsida	Proteaceae Juss.	Hakea prostrata R.Br. *(Harsh Hakea)*	native	
498	Magnoliopsida	Proteaceae Juss.	Hakea trifurcata (Sm.) R.Br. *(Two-leaf Hakea)*	native	
499	Magnoliopsida	Proteaceae Juss.	Isopogon drummondii *(Autumn Isopogon)*	native	P3
500	Magnoliopsida	Proteaceae Juss.	Petrophile latericola Keighery	native	CR
501	Magnoliopsida	Proteaceae Juss.	Petrophile media R.Br.	native	
502	Magnoliopsida	Proteaceae Juss.	Petrophile seminuda Lindl.	native	
503	Magnoliopsida	Proteaceae Juss.	Stirlingia latifolia (R.Br.) Steud. *(Blueboy)*	native	
504	Magnoliopsida	Rosaceae Juss.	Aphanes arvensis L. *(Parsley Piert)*	alien	
505	Magnoliopsida	Santalaceae R.Br.	Korthalsella leucothrix Barlow	native	P1
506	Magnoliopsida	Santalaceae R.Br.	Leptomeria empetriformis Miq.	native	
507	Magnoliopsida	Sapindaceae Juss.	Dodonaea hackettiana W.Fitzg. *(Hackett's Hopbush)*	native	P4
508	Magnoliopsida	Scrophulariaceae Juss.	Eremophila brevifolia (Bartl.) F.Muell. *(Spotted Eremophila)*	native	P2
509	Magnoliopsida	Scrophulariaceae Juss.	Eremophila glabra subsp. chlorella (Gand.) Chinnock	native	EN
510	Magnoliopsida	Solanaceae Juss.	Anthocercis littorea Labill. *(Yellow Tailflower)*	native	
511	Magnoliopsida	Solanaceae Juss.	Nicotiana glauca Graham *(Tree Tobacco)*	alien	
512	Magnoliopsida	Solanaceae Juss.	Solanum chrysotrichum Schltdl.	mixed	
513	Magnoliopsida	Solanaceae Juss.	Solanum linnaeanum Hepper & P.-M.L.Jaeger	alien	
514	Magnoliopsida	Stylidiaceae R.Br.	Levenhookia preissii (Sond.) F.Muell.	native	P1
515	Magnoliopsida	Stylidiaceae R.Br.	Stylidium brunonianum Benth. *(Pink Fountain Triggerplant)*	native	
516	Magnoliopsida	Stylidiaceae R.Br.	Stylidium galioides C.A.Gardner *(Yellow Mountain Triggerplant)*	native	VU
517	Magnoliopsida	Stylidiaceae R.Br.	Stylidium guttatum R.Br. *(Dotted Triggerplant)*	native	
518	Magnoliopsida	Stylidiaceae R.Br.	Stylidium paludicola Wege	native	P3
519	Magnoliopsida	Stylidiaceae R.Br.	Stylidium piliferum R.Br. *(Common Butterfly Triggerplant)*	native	
520	Magnoliopsida	Stylidiaceae R.Br.	Stylidium repens R.Br. *(Matted Triggerplant)*	native	
521	Magnoliopsida	Stylidiaceae R.Br.	Stylidium striatum Lindl.	native	P4
522	Magnoliopsida	Verbenaceae J.St.-Hil.	Lantana camara L.	alien	
523	Magnoliopsida	Verbenaceae J.St.-Hil.	Lantana camara L. var. camara	alien	
524	Pinopsida	Cupressaceae Gray	Callitris preissii Miq. *(Maro, Rottnest Island Pine)*	mixed	
525	Pinopsida	Cupressaceae Gray	Callitris pyramidalis (Miq.) J.E.Piggin & J.J.Bruhl *(Swamp Cypress)*	mixed	
526	Pteridopsida	Dennstaedtiaceae Lotsy	Pteridium esculentum (G.Forst.) Cockayne subsp. esculentum	native	
527	Ulvophyceae K.R.Mattox & K.D.Stewart	Caulerpaceae KÃ¼tz.	Caulerpa racemosa (Forssk.) J.Agardh	native	
528	Ulvophyceae K.R.Mattox & K.D.Stewart	Cladophoraceae Wille	Chaetomorpha linum (O.F.MÃ¼ll.) KÃ¼tz.	native	

Protozoa

529	Myxomycetes	Liceaceae Chevall.	Licea kleistobolus G.W.Martin	native	
530	Myxomycetes	Physaraceae Chevall.	Badhamia foliicola Lister	native	
531	Myxomycetes	Physaraceae Chevall.	Physarum Pers.		
532	Myxomycetes	Physaraceae Chevall.	Physarum compressum Alb. & Schwein.	native	
533	Myxomycetes	Physaraceae Chevall.	Willkommlangea reticulata (Alb. & Schwein.) Kuntze	native	
534	Myxomycetes	Stemonitidaceae Fr.	Comatricha ellae HÃ¤rk.	native	
535	Myxomycetes	Stemonitidaceae Fr.	Lamproderma scintillans (Berk. & Broome) Morgan	native	
536	Myxomycetes	Stemonitidaceae Fr.	Paradiacheopsis fimbriata (G.Lister & Cran) Nann.-Bremek.	native	

Conservation status definitions

Threatened species

- CR – Critically Endangered
- EN – Endangered
- VU – Vulnerable
- EX – Extinct
- EW – Extinct in the Wild
- CD – Species of special conservation interest (conservation dependent)
- OS – Species otherwise in need of special protection (other specially protected)
- MI – Migratory
- SP – Specially protected species

Priority species

- P1 – Priority 1: Poorly-known species – known from few locations, none on conservation lands
- P2 – Priority 2: Poorly-known species – known from few locations, some on conservation lands
- P3 – Priority 3: Poorly-known species – known from several locations
- P4 – Priority 4: Rare, Near Threatened and other species in need of monitoring

Dandjoo specific codes

- Parent of conservation listed taxa
- Cons code inherited from parent, X

Read full definitions at https://bio.wa.gov.au/guide/conservation-status-definitions

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Further note, precise locations of conservation listed species are considered sensitive. To protect this information, obfuscation has been applied to conservation-listed species records. For these species, the true location is ±10km from the search area used to generate this species list.

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Register

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Search Criteria

5 Aboriginal Cultural Heritage (ACH) Register in Custom search area - Point with 2000m buffer - 115.85181128547°E, 32.0100121983523°S (GDA94)

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Coordinates

Map coordinates are based on the GDA 2020 Datum.

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Aboriginal Cultural Heritage Inquiry System

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ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	Place Type	Knowledge Holders	Legacy ID
119	WINJAN.	No	Yes	No	No Gender / Initiation Restrictions	Register	Historical	*Registered Knowledge Holder names available from DPLH	S02966
3536	SWAN RIVER	No	Yes	No	No Gender / Initiation Restrictions	Register	Creation / Dreaming Narrative	*Registered Knowledge Holder names available from DPLH	S02548
3538	CANNING RIVER.	No	Yes	No	No Gender / Initiation Restrictions	Register	Creation / Dreaming Narrative; Ochre; Water Source	*Registered Knowledge Holder names available from DPLH	S02550
3705	FORESHORE CAMPING GROUND.	No	No	No	No Gender / Initiation Restrictions	Register	Camp; Hunting Place	*Registered Knowledge Holder names available from DPLH	S02205
18623	Goolugatup	No	Yes	No	No Gender / Initiation Restrictions	Register	Birthplace; Camp; Ritual / Ceremonial; Creation / Dreaming Narrative; Historical; Hunting Place; Meeting Place; Landscape / Seascape Feature; Ochre; Plant Resource; Water Source	*Registered Knowledge Holder names available from DPLH	

Department of Planning, Lands and Heritage

Aboriginal Cultural Heritage Inquiry System

Map of Aboriginal Cultural Heritage (ACH) Register

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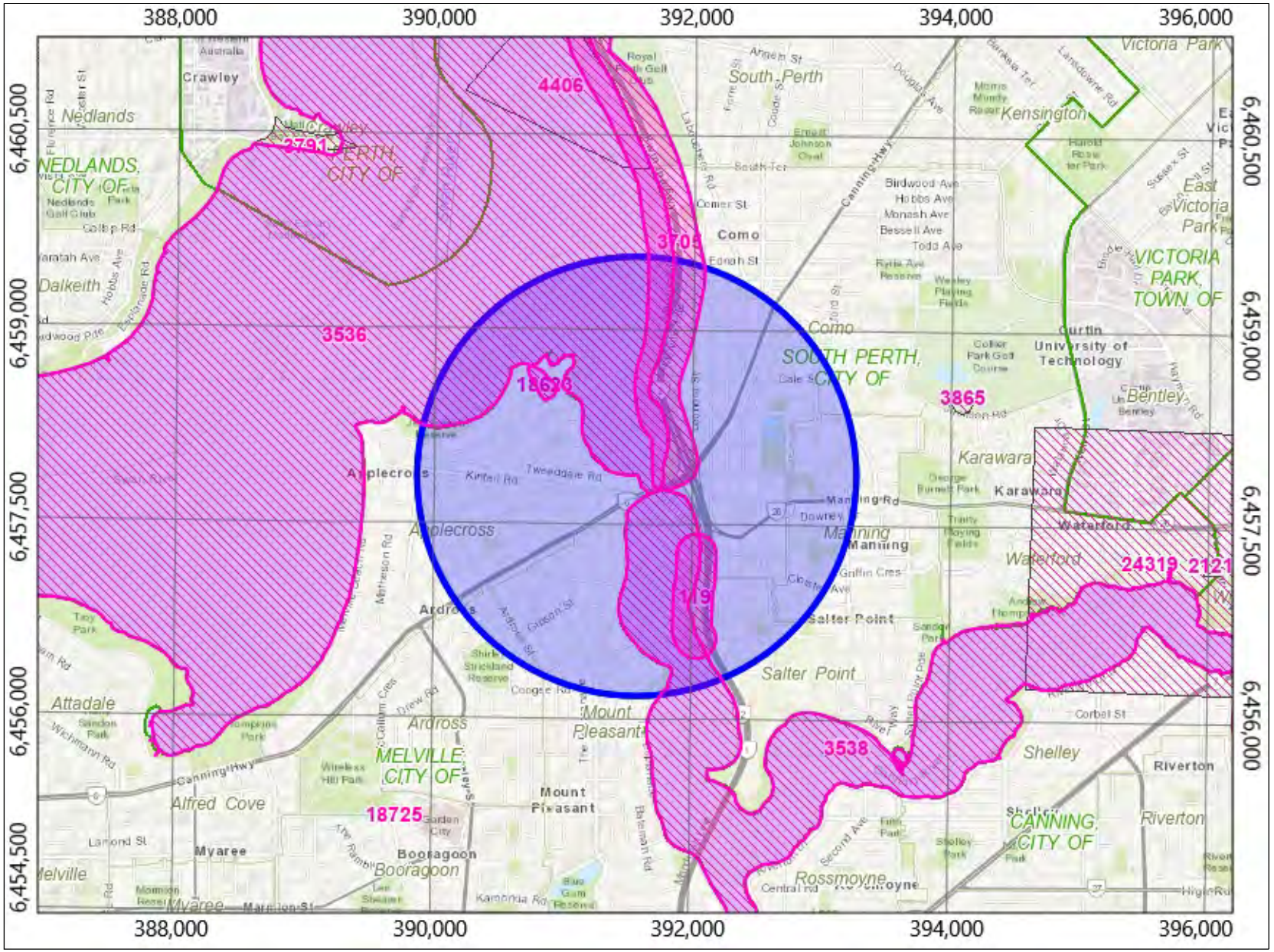

Legend

- Aboriginal Cultural Heritage (ACH) Register
- Search Area
- Aboriginal Community
  - *Permanent*
  - *Seasonal*
  - *Town Based*
- Town
- Road
- River
- Local Government Authority

1.74 kilometres

Map Scale 1 : 52,800

MGA Zone 50 (GDA2020)

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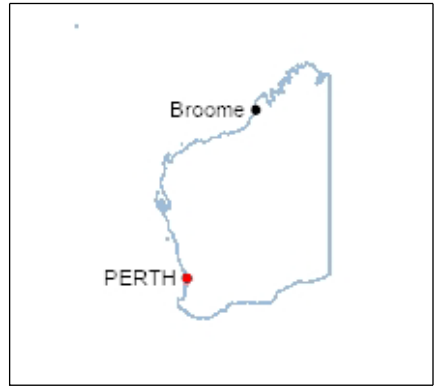

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Identifier: 1001028

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Lodged

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Search Criteria

3 Aboriginal Cultural Heritage (ACH) Lodged in Custom search area - Point with 2000m buffer - 115.85181128547°E, 32.0100121983523°S (GDA94)

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List of Aboriginal Cultural Heritage (ACH) Lodged

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4353	DAVILAK STREET, COMO	No	Yes	No	No Gender / Initiation Restrictions	Lodged	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	
22963	Canning River midden 2	No	Yes	No	No Gender / Initiation Restrictions	Lodged	Midden	*Registered Knowledge Holder names available from DPLH	
27842	Mitchell St Scar tree	No	No	No	No Gender / Initiation Restrictions	Lodged	Modified Tree	*Registered Knowledge Holder names available from DPLH	

Department of Planning, Lands and Heritage

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Map of Aboriginal Cultural Heritage (ACH) Lodged

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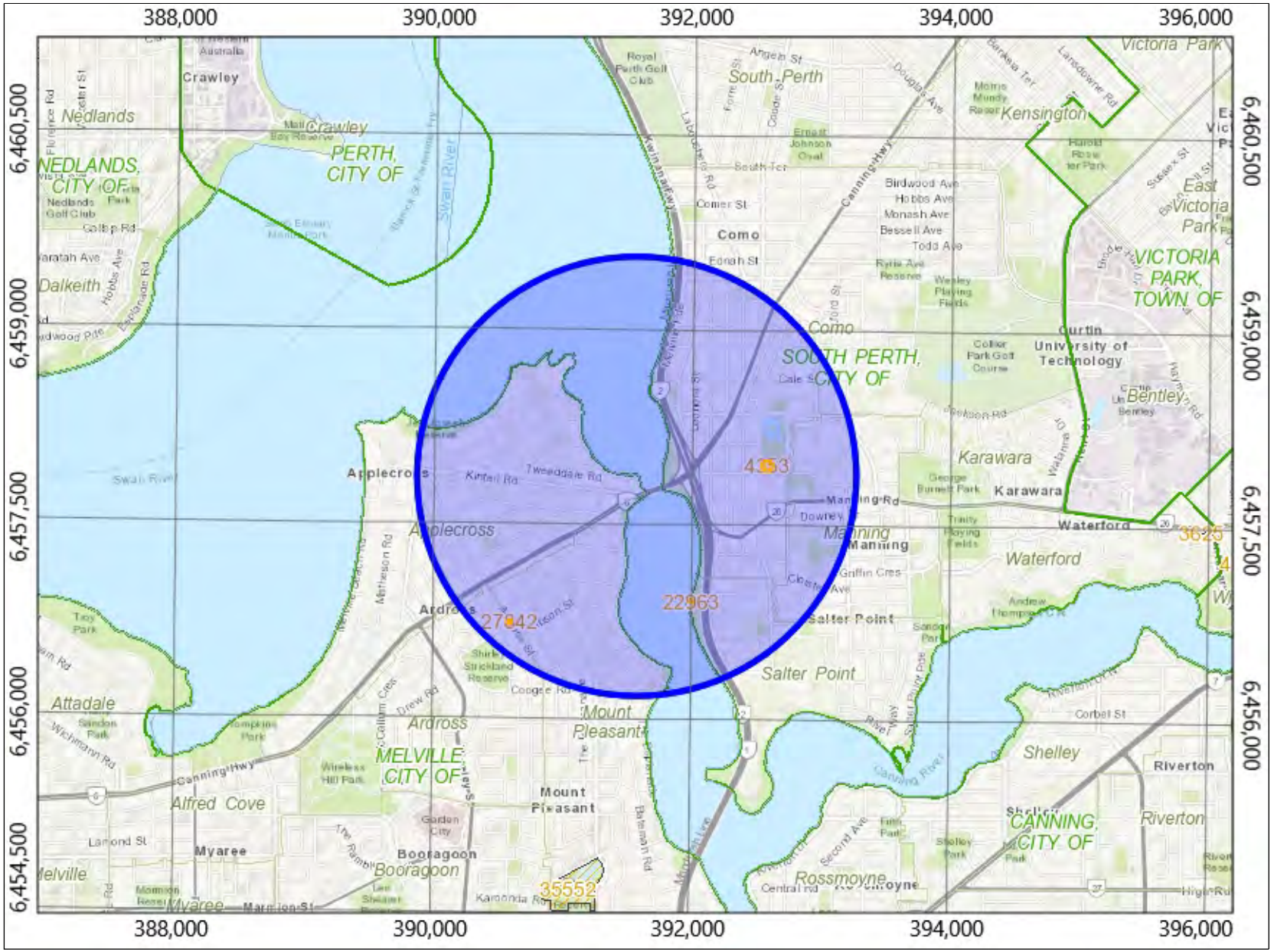

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  - *Permanent*
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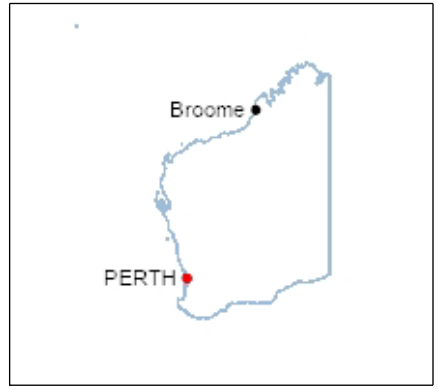

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Terminology

ID: ACH on the Register is assigned a unique ID by the Department of Planning, Lands and Heritage using the format: ACH-00000001. For ACH on the former Register the ID numbers remain unchanged and use the new format. For example the ACH ID of the place Swan River was previously '3536' and is now 'ACH-00003536'.

Access and Restrictions:

- Boundary Reliable (Yes/No): Indicates whether to the best knowledge of the Department, the location and extent of the ACH boundary is considered reliable.
- Boundary Restricted = No: Represents the actual location of the ACH as understood by the Department..
- Boundary Restricted = Yes: To preserve confidentiality the exact location and extent of the place is not displayed on the map. However, the shaded region (generally with an area of at least 4km²) provides a general indication of where the ACH is located. If you are a landowner and wish to find out more about the exact location of the place, please contact the Department of Planning, Lands and Heritage.
- Culturally Sensitive = No: Availability of information that the Department of Planning, Lands and Heritage holds in relation to the ACH is not restricted in any way.
- Culturally Sensitive = Yes: Some of the information that the Department of Planning, Lands and Heritage holds in relation to the ACH is restricted if it is considered culturally sensitive information. This information will only be made available if the Department of Planning, Lands and Heritage receives written approval from the people who provided the information. To request access please contact via https://achknowledge.dplh.wa.gov.au/ach-enquiry-form.
- Culturally Sensitive Nature:
  - No Gender / Initiation Restrictions: *Anyone* can view the information.
  - Men only: Only *males* can view restricted information.
  - Women only: Only *females* can view restricted information.

Status:

- Register: Aboriginal cultural heritage places that are assessed as meeting Section 5 of the *Aboriginal Heritage Act 1972*.
- Lodged: Information which has been received in relation to an Aboriginal cultural heritage place, but is yet to be assessed under Section 5 of the *Aboriginal Heritage Act 1972.*
- Historic: Aboriginal heritage places assessed as not meeting the criteria of Section 5 of the *Aboriginal Heritage Act 1972*. Includes places that no longer exist as a result of land use activities with existing approvals.

Place Type: The type of Aboriginal cultural heritage place. For example an artefact scatter place or engravings place.

Legacy ID: This is the former unique number that the former Department of Aboriginal Sites assigned to the place.

Coordinates

Map coordinates are based on the GDA 2020 Datum.

Basemap Copyright

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Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Historic

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ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	Place Type	Knowledge Holders	Legacy ID
20442	Raffles Hotel Site	No	Yes	No	No Gender / Initiation Restrictions	Historic	Sub surface cultural material; Artefacts / Scatter; Birthplace; Camp; Ritual / Ceremonial; Creation / Dreaming Narrative; Fish Trap; Historical; Hunting Place; Meeting Place; Ochre; Plant Resource; Quarry; Rock Shelter; Shell	*Registered Knowledge Holder names available from DPLH	

Department of Planning, Lands and Heritage

Aboriginal Cultural Heritage Inquiry System

Map of Aboriginal Cultural Heritage (ACH) Historic

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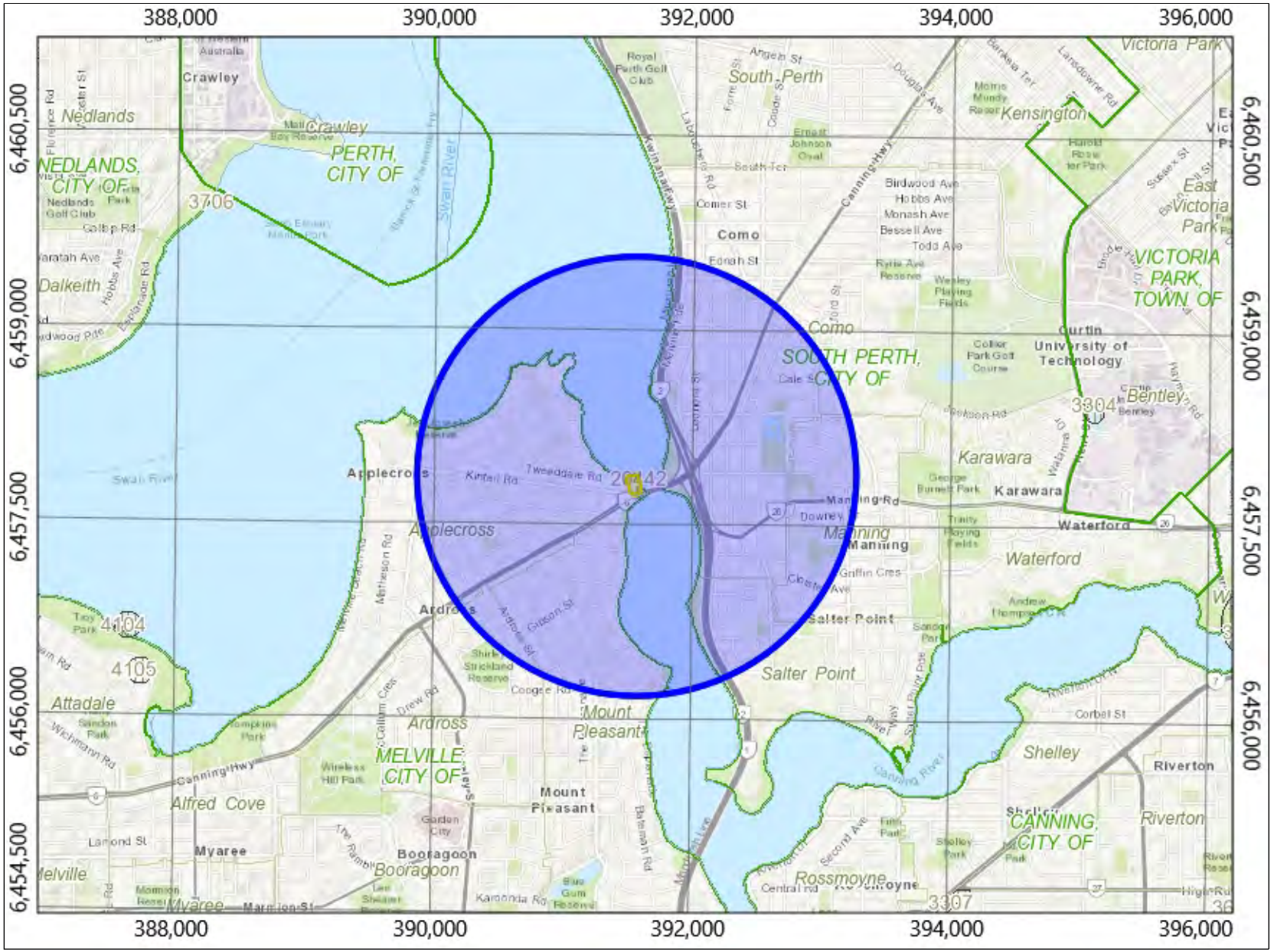

Legend

- Aboriginal Cultural Heritage (ACH) Historic
- Search Area
- Aboriginal Community
  - *Permanent*
  - *Seasonal*
  - *Town Based*
- Town
- Road
- River
- Local Government Authority

1.74 kilometres

Map Scale 1 : 52,800

MGA Zone 50 (GDA2020)

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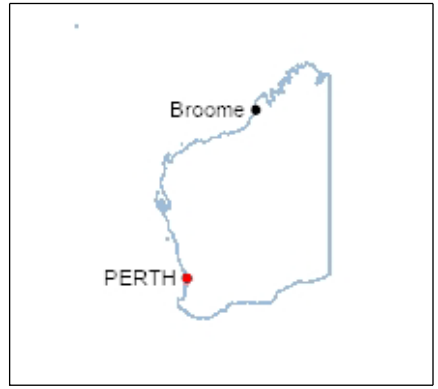

Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:19:05AM, 15/05/2025

Receipt No:	
ID No:	*1159*

Search Results

This response relates to a search request received for:

1 The Esplanade
Mount Pleasant, WA, 6153

This parcel belongs to a site that contains 1 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

Address	1 The Esplanade Mount Pleasant, WA, 6153
Lot on Plan Address	Lot 36 On Diagram 43497
Parcel Status	**Classification:** 11/04/2017 - *Remediated for restricted use* **Nature and Extent of Contamination:** Hydrocarbons (such as from diesel and petrol)and lead are present in soil beneath the site. Hydrocarbons (such as from diesel and petrol) are present in groundwater beneath the site and extending off site toward the Canning River. **Restrictions on Use:** The land use of the site is restricted to commercial and high rise residential use under the current layout, which excludes more sensitive uses such as commercial/residential with basement, recreational open space, childcare centres, kindergartens, pre-schools and primary schools. The site should not be developed for a more sensitive use such as commercial/residential with basement, recreational open space, childcare centres, kindergartens, pre-schools and primary schools without further contamination assessment and/or remediation. Other than for analytical testing, groundwater abstraction is not permitted at this site because of the nature and extent of groundwater contamination. Due to the presence of residual hydrocarbons in soil beneath the service station, a site-specific health and safety plan should be developed and implemented to address the risks to the health of any workers undertaking intrusive works until further notice. **Reason for Classification:** This site was reported to the Department of Environment Regulation (DER) prior to the commencement of the 'Contaminated Sites Act 2003'. The site classification is based on information submitted to DER by March 2017. The site has been used as a service station since 1952 and was reported because a series of contamination assessments, undertaken between 1994 and 2005, found hydrocarbons (such as from

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This Summary of Records has been prepared by Department of Water and Environmental Regulation (DWER) as a requirement of the Contaminated Sites Act 2003. DWER makes every effort to ensure the accuracy, currency and reliability of this information at the time it was prepared, however advises that due to the ability of contamination to potentially change in nature and extent over time, circumstances may have changed since the information was originally provided. Users must exercise their own skill and care when interpreting the information contained within this Summary of Records and, where applicable, obtain independent professional advice appropriate to their circumstances. In no event will DWER, its agents or employees be held responsible for any loss or damage arising from any use of or reliance on this information. Additionally, the Summary of Records must not be reproduced or supplied to third parties except in full and unabridged form.

Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:19:05AM, 15/05/2025

diesel and petrol) and lead in soil and groundwater that was migrating off site toward the Canning River. This site therefore comprises a source of groundwater contamination that has migrated to affect other land. The affected sites are the road reserve of The Esplanade, Lot 1854 on Plan 208889 (Crown Reserve 26811) and Canning Location 1855 (Crown Reserve 26758) located immediately east of the source site.

DER understands that in 1996/1997 the site was redeveloped and underground storage tanks (USTs), located in the eastern and southern portions of the site, and associated infrastructure were removed and replaced. Remedial works including excavation of hydrocarbon impacted soil and disposal off site were undertaken. The southern portion of the site was subsequently developed and is now occupied by a high rise residential development.

Residual soil impacts were identified in two areas in April 2005. Lead is present in soil approximately 1 metre below ground level in the south eastern corner of the site. The concentration of lead was found to exceed the Health-based Investigation Level for parks and recreational land use and Ecological Investigation Levels, as published in 'Assessment Levels for Soil, Sediment and Water' (Department of Environment and Conservation, 2010) which were the relevant guidelines at the time. Residual hydrocarbon impacted soil was also found to be present at the service station site, at the groundwater table, east of the USTs at concentrations exceeding Ecological Investigation Levels (DEC, 2010).

Groundwater monitoring undertaken at the site from 1995 to 2005 indicated two areas of groundwater impact corresponding to areas of impacted soil. A main dissolved hydrocarbon plume was found to extend from the vicinity of USTs in the northern portion of the site, while a second dissolved hydrocarbon plume was found to extend from the south east corner of the site.

Groundwater remediation has been by monitored natural attenuation with monitoring of the groundwater being conducted on a periodic basis.

Between 2000 and 2002, the CSIRO undertook a detailed investigation of the main plume and found that hydrocarbon impacted groundwater was discharging into the river via a groundwater seepage interface in the intertidal zone during low tide. Hydrocarbons were present in sediment pore water during a low tide at concentrations exceeding Aquatic Ecosystems - Marine Guidelines and domestic non-potable groundwater use guidelines, as published in 'Assessment Levels for Soil, Sediment and Water' (DEC, 2010), which were the relevant guidelines at the time. In August 2005, testing of sediment pore water was undertaken and found no potential contaminants above health-based or ecological guidelines.

Groundwater investigations continued at the site and off-site until 2014 to further delineate the lateral and vertical extent of the groundwater impacts, and to monitor the effectiveness of the remediation works. The investigations have indicated a reduced contaminant plume beneath the service station and off-site.

In 2014 hydrocarbons (such as from petrol, diesel) were present in groundwater at concentrations exceeding assessment levels for fresh waters and/or marine waters and non-potable use of groundwater as specified in the 'Assessment and management of contaminated sites' (DER 2014).

In 2012 a Health and Environmental Risk Assessment (HERA) was undertaken for the main plume. The HERA concluded that hydrocarbon impacted groundwater does not pose an unacceptable health or environmental risk at the site.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:19:05AM, 15/05/2025

	An accredited contaminated sites auditor (the auditor) reviewed the site investigations and risk assessment for the site. The auditor's findings are documented in a mandatory auditor's report dated (2 March 2017). The auditor concluded that based on the results of the investigation there is no unacceptable risk to human health or the environment at the site or offsite, under the current land use and site layout. The Department of Health has indicated its acceptance of the auditor's conclusions. The site has been demonstrated as being suitable for the current service station and residential apartment use, subject to restrictions. The site is contaminated and has been remediated such that it is suitable for the current land use, but may not be suitable for a more sensitive land use. Therefore, the site is classified as 'remediated for restricted use'. A memorial stating the site's classification has been placed on the certificate of title, and will notify any prospective owners of the contamination status of the site. Due to the nature and extent of the current groundwater contamination identified to date, the abstraction of groundwater for any purpose is not recommended. DER, in consultation with the Department of Health, has classified this site based on the information available to DER at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to DER, and as such, the usefulness of this information may be limited. In accordance with Department of Health advice, if groundwater is being, or is proposed to be abstracted, DER recommends that analytical testing should be carried out to determine whether the groundwater is suitable for its intended use.
Certificate of Title Memorial	Under the Contaminated Sites Act 2003, this site has been classified as "remediated for restricted use". For further information on the contamination status of this site, please contact Contaminated Sites at the Department of Environment Regulation.
Current Regulatory Notice Issued	**Type of Regulatory Notice:** *Nil* **Date Issued:** *Nil*
General	No other information relating to this parcel.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 12:31:00PM, 15/05/2025

Receipt No:	
ID No:	*17994*

Search Results

This response relates to a search request received for:

848 Canning Hwy
Applecross, WA, 6153

This parcel belongs to a site that contains 1 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

Address	848 Canning Hwy Applecross, WA, 6153
Lot on Plan Address	Lot 4 On Diagram 48045
Parcel Status	**Classification:** 04/07/2012 - *Contaminated - remediation required* **Nature and Extent of Contamination:** Hydrocarbons (such as from petrol/diesel) have historically been detected in soil at the site. Hydrocarbons (such as from petrol/diesel) are present in groundwater as a plume beneath the service station. **Restrictions on Use:** Other than for analytical testing or remediation, groundwater abstraction is not permitted at this site because of the nature and extent of groundwater contamination. **Reason for Classification:** This site was reported to the Department of Environment and Conservation (DEC) as per reporting obligations under section 11 of the 'Contaminated Sites Act 2003', which commenced on 1 December 2006. The site classification is based on information submitted to DEC by December 2011. The site has been used as a service station for approximately 36 years (since 1976) and continues to operate as a service station. This is a land use that has the potential to cause contamination, as specified in the guideline 'Potentially Contaminating Activities, Industries and Landuses' (Department of Environment, 2004). A contamination assessment conducted in 1999 found that hydrocarbons (such as from petrol and diesel) were present in soils at concentrations exceeding Ecological Investigation Levels and potentially exceeding Health-based Investigation Levels for commercial and industrial sites, as published in 'Assessment Levels for Soil, Sediment and Water' (DEC, 2010). Hydrocarbon-impacted soils were identified beneath fuel dispensing equipment to a depth of 0.9 - 3.0 metres below ground level. DEC understands that soil remediation has not been undertaken and that hydrocarbon-impacted soils remain on site.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 12:31:00PM, 15/05/2025

	DEC notes that additional soil investigations undertaken in 2009 did not detect any potential contaminants within the soils of the site above Health or Ecological Investigation Levels. Groundwater monitoring, undertaken at the site since 1997, found that petroleum hydrocarbons, such as benzene, toluene, ethyl-benzene and xylene, were present at concentrations exceeding non-potable groundwater use guidelines (DEC, 2010) which are the relevant assessment levels for the use of groundwater for garden irrigation and other non-potable uses. Phase separated hydrocarbons (such as pure petrol) were detected floating on the surface of groundwater between 2001 and 2007. DEC notes that recent groundwater monitoring in 2011 indicates that the dissolved-phase hydrocarbon plume is contained within the site boundaries and natural attenuation appears to be occurring. However, DEC requires further information to support the implementation of monitored natural attenuation (MNA) as a groundwater remediation technology at the site. As an appropriate Health Risk Assessment has not been carried out, DEC cannot comment on the suitability of the site for any landuse. As the site is contaminated, remediation is required to reduce potential risks to human health, the environment or any environmental value, and remedial works are in progress but not yet completed, the site is classified as 'contaminated - remediation required'. DEC, in consultation with the Department of Health, has classified this site based on the information available to DEC at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to DEC, and as such, the usefulness of this information may be limited. **Action Required** Additional groundwater monitoring is required to delineate the lateral extent of the dissolved-phase hydrocarbon plume. If further investigation identifies off-site impacts, future reports on investigation, assessment, monitoring or remediation of the site which are submitted to DEC will need to be accompanied by a Mandatory Auditor's Report, in accordance with regulation 31(1)(b) of the Contaminated Sites Regulations 2006. DEC understands that monitored natural attenuation (MNA) has been proposed as a groundwater remediation technology. Further investigations are required, in accordance with the guideline "Use of Monitored Natural Attenuation for Groundwater Remediation" (Department of Environment, April 2004), to determine whether MNA will be sufficient to prevent the identified groundwater impact migrating to affect down-gradient properties.
Certificate of Title Memorial	Under the Contaminated Sites Act 2003, this site has been classified as "contaminated - remediation required". An instrument affecting land which comprises all, or part of, this site will not be registered or accepted for registration, unless the CEO of the Department of Environment & Conservation consents to the registration in writing. For further information on the contamination status of this site, or this restriction, please contact the Contaminated Sites Branch of the Department of Environment & Conservation.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 12:31:00PM, 15/05/2025

Current Regulatory Notice Issued	**Type of Regulatory Notice:** *Nil* **Date Issued:** *Nil*
General	No other information relating to this parcel.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 10:48:37AM, 15/05/2025

Receipt No:	
ID No:	*18912*

Search Results

This response relates to a search request received for:

918 Canning Hwy
Applecross, WA, 6153

This parcel belongs to a site that contains 1 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

Address	918 Canning Hwy Applecross, WA, 6153
Lot on Plan Address	Lot 22 On Diagram 19618
Parcel Status	**Classification:** 07/06/2023 - *Remediated for restricted use* **Nature and Extent of Contamination:** Hydrocarbons (such as from petrol and diesel) are present in soil and groundwater beneath the site. Hydrocarbons in groundwater are present as a plume that extends off-site to the east and south-east. **Restrictions on Use:** The land use of the site is restricted to the current commercial/industrial land use as a service station. The site should not be redeveloped for more sensitive commercial land uses such as childcare centres, or for residential or recreational open space, and there should be no change to the existing site layout or configuration without further contamination assessment and/or remediation. Due to the nature and extent of groundwater contamination, the abstraction of groundwater for any purpose is not recommended. Basement construction should not be undertaken at the site without further contamination assessment and/or remediation. Due to the presence of hydrocarbons in shallow groundwater, the auditor approved SMP titled 'Site Management Plan, Ampol Applecross Service Station (55499), 918 Canning Highway, Applecross, WA 6153, Rev 0 - (AECOM, 12 April 2021) is required to be implemented in order to address the risk to the health of workers undertaking intrusive works until further notice. The SMP includes environmental and occupational health and safety management protocols to be implemented for sub-surface excavations. **Reason for Classification:** This site was reported to the Department of Water and Environmental Regulation (the department) as per reporting obligations under section 11 of the 'Contaminated Sites Act 2003' (the Act), which commenced on 1 December 2006.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 10:48:37AM, 15/05/2025

The site was first classified under section 13 of the Act based on information submitted to the department by May 2010, and further classified based on information received by August 2017. The site has been classified again under section 13 of the Act to reflect additional technical information submitted to the department by January 2022.

The site has been used as a service station for approximately 42 years, from 1981 to present. A service station is a land use that has the potential to cause contamination, as specified in the guideline "Assessment and management of contaminated sites' (Department of Water and Environmental Regulation [DWER], 2021).

The site was reported because soil and groundwater contamination had been identified beneath the service station during initial site investigations undertaken between 2005 and 2006. Hydrocarbons (such as from petrol and diesel) were found to be present in soil and groundwater at concentrations exceeding ecological and health-based criteria relevant at that time. The concentration of dissolved-phase hydrocarbons in groundwater indicated that light non-aqueous phase liquid (LNAPL) (such as pure petrol or diesel) was present in groundwater at the site.

Active remedial works were carried out at the site between 2013 to 2014 comprising excavation and off-site disposal of infrastructure and accessible soils, pump-out and off-site disposal of approximately 26,500 litres of LNAPL to a licensed facility, and application of in-situ oxidation compounds.

Following remediation, hydrocarbons were found to remain in soil beneath the site between 1.2 metres and 3.0 metres below ground level exceeding Ecological Screening Levels and Health Screening Levels for vapour intrusion on commercial/industrial land in the central southern portion of the site, as specified in the 'National Environment Protection (Assessment of Site Contamination) Measure 1999' (the NEPM).

Groundwater monitoring between 2016 and 2018 has found that hydrocarbons remain present in groundwater as a plume beneath the site that extends beneath the adjacent road reserves to the east and south-east. Hydrocarbon concentrations exceed assessment levels for non-potable use of groundwater specified in the 'Assessment and management of contaminated sites' (DWER, 2021), and exceed Water Quality Australia's default guideline values for the protection freshwater/marine ecosystems. These criteria were considered relevant as the site is within 60 to 130 metres of ecological receptors in the Canning River tidal estuary and due to potential for groundwater use (such as for garden/parks irrigation) on commercial or nearby recreational land.

Groundwater monitoring between 2014 and 2018 has indicated that the plume has contracted and stabilised over time, and that natural attenuation is occurring.

Due to the shallow groundwater conditions at the site (i.e. less than 2 metres below ground level) a soil vapour investigation and Tier 2 human health risk assessment was undertaken between 2014 and 2015. The investigation found that hydrocarbon impacted groundwater poses a potential direct contact risk to sub-surface workers at the service station site and the portions of the road reserves to the east and south-east.

A Site Management Plan (SMP) (dated April 2021) has been prepared in order to manage potential environmental and health risk associated with future sub-surface excavations at the site. A Tier 2 risk assessment has indicated that the contamination present on the site does not pose an unacceptable risk to human health, the environment or environmental values under the current land use. However, the contamination may present an unacceptable risk to human health under a more sensitive land use.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 10:48:37AM, 15/05/2025

	An accredited contaminated sites auditor (the auditor) has reviewed the progress of the site investigations, remediation works, risk assessment and proposed ongoing health risk management measures for the site. The auditor's findings are documented in two mandatory auditor's reports (dated 1 August 2017 and 20 January 2022, with Addendum dated January 2022). The department accepts the auditor's recommendation that the hydrocarbon plume appears stable and that the site is suitable for the current commercial/industrial land use, subject to ongoing implementation of the SMP and restriction of groundwater use. The site is contaminated and has been remediated such that it is suitable for the current land use, subject to implementation of the SMP and a restriction on groundwater use. Therefore, the site is classified as 'remediated for restricted use'. A memorial stating the site's classification will be placed on the certificate of title, and will trigger the need for further investigations and risk assessment should the site be proposed for a more sensitive land use. The department, in consultation with the Department of Health, has classified this site based on the information available to the department at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to the department, and as such, the usefulness of this information may be limited. **Other Relevant Information:** Additional information included herein is relevant to the contamination status of the site and includes the department's expectations for action that should be taken to address potential or actual contamination described in the Reasons for Classification. Based on the available information, contamination present beneath this site has also been identified beyond the site boundary beneath the adjacent land, consistent with the definition of a "source site" specified in Part 1, Section 3 of the Act. In accordance with Regulation 31(1)(b) of the 'Contaminated Sites Regulations 2006', reports or information submitted to DWER that are relevant to the investigation, assessment, monitoring or remediation of a source site are required to be accompanied by a mandatory auditor's report (MAR) prepared by an accredited contaminated sites auditor. Where the land is part of a transaction - sale, mortgagee or lease agreement, the land owners MUST PROVIDE WRITTEN DISCLOSURE (on the prescribed Form 6) of the site's status to any potential owner, mortgagee (e.g. financial institutions) or lessee at least 14 days before the completion of the transaction. A copy of the disclosure must also be forwarded to the department. **Action required:** Please refer to the Restrictions on Use applicable to the site.
Certificate of Title Memorial	Under the Contaminated Sites Act 2003, this site has been classified as "remediated for restricted use". For further information on the contamination status of this site, please contact Contaminated Sites at the Department of Water and Environmental Regulation.
Current Regulatory Notice Issued	**Type of Regulatory Notice:** *Nil* **Date Issued:** *Nil*

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 10:48:37AM, 15/05/2025

General	No other information relating to this parcel.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:30:09AM, 15/05/2025

Receipt No:	
ID No:	*34603*

Search Results

This response relates to a search request received for:

1854 The Esplanade
Mount Pleasant, WA, 6153

This parcel belongs to a site that contains 3 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

Address	1854 The Esplanade Mount Pleasant, WA, 6153
Lot on Plan Address	Lot 1854 On Plan 208889
Parcel Status	**Classification:** 11/04/2017 - *Remediated for restricted use* **Nature and Extent of Contamination:** Hydrocarbons (such as from diesel and petrol) are present in groundwater beneath the site. **Restrictions on Use:** The land use of the site is restricted to road reserve and recreation reserve under the current layout. The site should not be developed without further contamination assessment and/or remediation. Due to the presence of hydrocarbons in groundwater, any sub-surface excavation is to be conducted under the Site Management Plan (SMP, AECOM, 8 November 2016) until further notice. Other than for analytical testing, no new groundwater abstraction bores are permitted at this site (see exclusion zone as defined in the SMP (AECOM, 8 November 2016) because of the nature and extent of groundwater contamination. **Reason for Classification:** Information concerning this site was received by the Department of Environment and Regulation (DER) as part of groundwater investigations carried out between 1998 and 2014 at an adjacent site. This site has been classified under section 13 of the Contaminated Sites Act 2013 based on information submitted to DER by March 2017. The site has been affected by hydrocarbon (such as from petrol, diesel) impacted groundwater that has migrated from an adjoining source site. The source site is the service station located at 1 The Esplanade, Mount Pleasant. The affected site comprises The Esplanade road reserve located immediately adjacent to the source site, Lot 1854 on Plan 208889 (Crown Reserve 26811) and Canning Location 1855 (Crown Reserve 26758). The service station has operated since 1952 and was originally reported because a series of contamination assessments, undertaken between 1994 and 2005, found hydrocarbons (such as from

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:30:09AM, 15/05/2025

diesel and petrol) and lead in soil and groundwater migrating off-site toward the Canning River.

Groundwater monitoring undertaken from 1995 to 2005 indicated two areas of groundwater impact corresponding to areas of impacted soil. A main dissolved hydrocarbon plume was found to extend from the vicinity of underground storage tanks in the northern portion of the service station site, while a second dissolved hydrocarbon plume was found to extend from the south east corner of the service station site (now occupied by apartments).

Groundwater remediation has been by monitored natural attenuation with monitoring of the groundwater being conducted on a periodic basis.

Groundwater investigations to delineate the lateral and vertical extent of the groundwater impacts, and to monitor the effectiveness of the remediation works were conducted until 2014. The investigations have indicated a reduced contaminant plume beneath the site.

In 2014 hydrocarbons (such as from petrol, diesel) were present in groundwater at concentrations exceeding assessment levels for fresh waters and/or marine waters and non-potable use of groundwater as specified in the 'Assessment and management of contaminated sites' (DER 2014).

In 2012 a Health and Environmental Risk Assessment (HERA) was undertaken for the main plume. The HERA concluded that hydrocarbon impacted groundwater does not pose unacceptable health or environmental risk at the site.

An accredited contaminated sites auditor (the auditor) reviewed the site investigations and risk assessment for the site. The auditor's findings are documented in a mandatory auditor's report (dated 2 March 2017). The auditor concluded that based on the results of the investigation there is no unacceptable risk to human health and environment at the site, under the current land use. The Department of Health has indicated its acceptance of the auditor's conclusions.

The site has been demonstrated as being suitable for the road and recreational land use subject to restrictions.

The site is contaminated and has been remediated such that it is suitable for current land use, but may not be suitable for a more sensitive land use. Therefore, the site is classified as 'remediated for restricted use'.

A memorial stating the site's classification has been placed on the certificate of title, and will notify any prospective owners of the contamination status of the site. Due to the nature and extent of the current groundwater contamination identified to date, the abstraction of groundwater for any purpose is not recommended.

DER, in consultation with the Department of Health, has classified this site based on the information available to DER at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to DER, and as such, the usefulness of this information may be limited.

In accordance with Department of Health advice, if groundwater is being, or is proposed to be abstracted, DER recommends that analytical testing should be carried out to determine whether the groundwater is suitable for its intended use.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:30:09AM, 15/05/2025

Certificate of Title Memorial	Under the Contaminated Sites Act 2003, this site has been classified as "remediated for restricted use". For further information on the contamination status of this site, please contact Contaminated Sites at the Department of Water and Environmental Regulation.
Current Regulatory Notice Issued	**Type of Regulatory Notice:** *Nil* **Date Issued:** *Nil*
General	No other information relating to this parcel.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:27:42AM, 15/05/2025

Receipt No:	
ID No:	*34605*

Search Results

This response relates to a search request received for:

Road Reserve
Mount Pleasant, WA, 6153

This parcel belongs to a site that contains 3 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

Address	Road Reserve Mount Pleasant, WA, 6153
Lot on Plan Address	Road Reserve
Parcel Status	**Classification:** 11/04/2017 - *Remediated for restricted use* **Nature and Extent of Contamination:** Hydrocarbons (such as from diesel and petrol) are present in groundwater beneath the site. **Restrictions on Use:** The land use of the site is restricted to road reserve and recreation reserve under the current layout. The site should not be developed without further contamination assessment and/or remediation. Due to the presence of hydrocarbons in groundwater, any sub-surface excavation is to be conducted under the Site Management Plan (SMP, AECOM, 8 November 2016) until further notice. Other than for analytical testing, no new groundwater abstraction bores are permitted at this site (see exclusion zone as defined in the SMP (AECOM, 8 November 2016) because of the nature and extent of groundwater contamination. **Reason for Classification:** Information concerning this site was received by the Department of Environment and Regulation (DER) as part of groundwater investigations carried out between 1998 and 2014 at an adjacent site. This site has been classified under section 13 of the Contaminated Sites Act 2013 based on information submitted to DER by March 2017. The site has been affected by hydrocarbon (such as from petrol, diesel) impacted groundwater that has migrated from an adjoining source site. The source site is the service station located at 1 The Esplanade, Mount Pleasant. The affected site comprises The Esplanade road reserve located immediately adjacent to the source site, Lot 1854 on Plan 208889 (Crown Reserve 26811) and Canning Location 1855 (Crown Reserve 26758). The service station has operated since 1952 and was originally reported because a series of contamination assessments, undertaken between 1994 and 2005, found hydrocarbons (such as from

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:27:43AM, 15/05/2025

diesel and petrol) and lead in soil and groundwater migrating off-site toward the Canning River.

Groundwater monitoring undertaken from 1995 to 2005 indicated two areas of groundwater impact corresponding to areas of impacted soil. A main dissolved hydrocarbon plume was found to extend from the vicinity of underground storage tanks in the northern portion of the service station site, while a second dissolved hydrocarbon plume was found to extend from the south east corner of the service station site (now occupied by apartments).

Groundwater remediation has been by monitored natural attenuation with monitoring of the groundwater being conducted on a periodic basis.

Groundwater investigations to delineate the lateral and vertical extent of the groundwater impacts, and to monitor the effectiveness of the remediation works were conducted until 2014. The investigations have indicated a reduced contaminant plume beneath the site.

In 2014 hydrocarbons (such as from petrol, diesel) were present in groundwater at concentrations exceeding assessment levels for fresh waters and/or marine waters and non-potable use of groundwater as specified in the 'Assessment and management of contaminated sites' (DER 2014).

In 2012 a Health and Environmental Risk Assessment (HERA) was undertaken for the main plume. The HERA concluded that hydrocarbon impacted groundwater does not pose unacceptable health or environmental risk at the site.

An accredited contaminated sites auditor (the auditor) reviewed the site investigations and risk assessment for the site. The auditor's findings are documented in a mandatory auditor's report (dated 2 March 2017). The auditor concluded that based on the results of the investigation there is no unacceptable risk to human health and environment at the site, under the current land use. The Department of Health has indicated its acceptance of the auditor's conclusions.

The site has been demonstrated as being suitable for the road and recreational land use subject to restrictions.

The site is contaminated and has been remediated such that it is suitable for current land use, but may not be suitable for a more sensitive land use. Therefore, the site is classified as 'remediated for restricted use'.

A memorial stating the site's classification has been placed on the certificate of title, and will notify any prospective owners of the contamination status of the site. Due to the nature and extent of the current groundwater contamination identified to date, the abstraction of groundwater for any purpose is not recommended.

DER, in consultation with the Department of Health, has classified this site based on the information available to DER at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to DER, and as such, the usefulness of this information may be limited.

In accordance with Department of Health advice, if groundwater is being, or is proposed to be abstracted, DER recommends that analytical testing should be carried out to determine whether the groundwater is suitable for its intended use.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:27:43AM, 15/05/2025

Certificate of Title Memorial	Under the Contaminated Sites Act 2003, this site has been classified as "possibly contaminated - investigation required". For further information on the contamination status of this site, please contact the Contaminated Sites section of the Department of Environment & Conservation. Under the Contaminated Sites Act 2003, this site has been classified as "remediated for restricted use". For further information on the contamination status of this site, please contact Contaminated Sites at the Department of Environment Regulation.
Current Regulatory Notice Issued	**Type of Regulatory Notice:** *Nil* **Date Issued:** *Nil*
General	No other information relating to this parcel.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:18:10AM, 15/05/2025

Receipt No:	
ID No:	*63551*

Search Results

This response relates to a search request received for:

Canning Beach Rd
Applecross, WA, 6153
Approximate spatial representation of Canning Beach Road road reserve (Landgate PIN 11802369), adjacent to Caltex Service Station at 918 Canning Highway, Applecross WA 6153

This parcel belongs to a site that contains 2 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

Address

Canning Beach Rd
Applecross, WA, 6153
Approximate spatial representation of Canning Beach Road road reserve (Landgate PIN 11802369),

Parcel Status

Classification: 08/06/2023 - *Remediated for restricted use*

Nature and Extent of Contamination:

Hydrocarbons (such as from petrol and diesel) are present in soil and groundwater beneath the adjacent service station that extends to the east and south-east to beneath this site.

Restrictions on Use:

The land use of the site is restricted to the current commercial/industrial land use as a road reserve. The site should not be redeveloped for more sensitive commercial land uses such as childcare centres, or for residential or recreational open space, without further contamination assessment and/or remediation.

Due to the nature and extent of groundwater contamination, the abstraction of groundwater for any purpose is not recommended.

Deep excavation, trenching or access to unprotected below ground spaces should not be undertaken at the site without an appropriate OHS assessment and risk mitigation strategy f
The site is to be managed on an ongoing basis in accordance with the auditor approved SMP titled Site Management Plan, Portions of Canning Highway and Canning Beach Road Reserves, Ampol Applecross Service Station (55499) (AECOM, 19 November 2021). The SMP includes environmental and occupational health and safety management protocols to be implemented for sub-surface excavations below 0.6m depth.

Reason for Classification:

This site was reported to the Department of Water and Environmental Regulation (the department) as per reporting obligations under section 11 of the 'Contaminated Sites Act 2003' (the Act), which commenced on 1 December 2006.

The site was first classified based on information received by August 2017. The site has been classified again under section 13 of the Act to reflect additional technical information submitted to the

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:18:10AM, 15/05/2025

department by January 2022.

This site, comprising a portion of both the Canning Beach Road and Canning Highway road reserves, was reported because groundwater investigations carried out in 2016 to 2017 found hydrocarbons (such as from petrol or diesel) in groundwater beneath the adjacent service station, located at 918 Canning Highway Applecross extended beyond the property boundary to beneath this site. The service station has been classified separately under the Act.

Soil and groundwater contamination was initially identified beneath the service station during site investigations undertaken between 2005 and 2006. Hydrocarbons (such as from petrol and diesel) were found in soil and groundwater at concentrations exceeding ecological and health based criteria relevant at that time. The concentration of dissolved-phase hydrocarbons in groundwater indicated that light non-aqueous phase liquid (LNAPL) (such as pure petrol or diesel) was present in groundwater at the site.

Active remedial works were carried out at the service station between 2013 to 2014 comprising excavation and off-site disposal of infrastructure and accessible soils, pump-out and off-site disposal of approximately 26,500 litres of LNAPL to a licensed facility, and application of in-situ oxidation compounds.

Groundwater monitoring between 2016 and 2018 has found that a hydrocarbon (such as from petrol, diesel) plume remains present in groundwater beneath the service station that extends beneath the site i.e. the adjacent road reserves to the east and south-east. The hydrocarbon concentrations exceed assessment levels for non-potable use of groundwater specified in the 'Assessment and management of contaminated sites' (DWER, 2021) and exceed Water Quality Australia's default guideline values for the protection freshwater/marine ecosystems. These criteria were considered relevant as the site is within 60 to 130 metres of ecological receptors in the Canning River tidal estuary and due to potential for groundwater use (such as for garden/parks irrigation) on commercial or nearby recreational land.

Groundwater monitoring between 2014 and 2018 indicates that the plume has contracted and stabilised over time, and that natural attenuation is occurring.

Due to shallow groundwater conditions at the site (ie. less than 2 metres below ground level) and no relevant vapour guidelines being available, a soil vapour investigation and Tier 2 human health risk assessment was undertaken between 2014 and 2015. The investigation found that hydrocarbon impacted groundwater and soils in the groundwater smear zone pose a potential direct contact risk to sub-surface workers at the service station and the site.

A Site Management Plan (SMP) (dated November 2021) has been prepared in order to manage the potential environmental and health risks associated with any future excavations of soil below 0.6 metres below ground level and/or dewatering at the site.

A Tier 2 risk assessment has indicated that the contamination present on the site does not pose an unacceptable risk to human health, the environment or environmental values under the current land use. However, the contamination may present an unacceptable risk to human health under a more sensitive land use.

An accredited contaminated sites auditor (the auditor) has reviewed the progress of the site investigations, remediation works, risk assessment and proposed ongoing health risk management measures for the site. The auditor's findings are documented in two mandatory auditor's reports

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:18:10AM, 15/05/2025

	(dated 1 August 2017 and 8 November 2021, with Addendum dated January 2022). The department accepts the auditor's recommendation that the hydrocarbon plume appears stable and that the site is suitable for the current commercial/industrial land use, subject to ongoing implementation of the SMP and restriction on groundwater use. The site is contaminated and has been remediated such that it is suitable for the current land use, subject to implementation of the SMP and a restriction on groundwater use. Therefore, the site is classified as 'remediated for restricted use'. A memorial stating the site's classification will be placed on the certificate of title, and will trigger the need for further investigations and risk assessment should the site be proposed for a more sensitive land use. The department, in consultation with the Department of Health, has classified this site based on the information available to the department at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to the department, and as such, the usefulness of this information may be limited. **Other Relevant Information:** Additional information included herein is relevant to the contamination status of the site and includes the department's expectations for action that should be taken to address potential or actual contamination described in the Reasons for Classification. Based on the available information, contamination present on this site has originated from the adjacent land at 918 Canning Highway, Applecross which has been classified separately under the Act. Therefore, this site is consistent with the definition of an "affected site" as specified in Part 1, Section 3 of the Act. Under the Act, the person responsible for the remediation of a source site is also responsible for remediation of any related affected sites. **Action required:** Please refer to the Restrictions on Use applicable to the site.
Certificate of Title Memorial	Under the Contaminated Sites Act 2003, this site has been classified as "contaminated - remediation required". For further information on the contamination status of this site, please contact Contaminated Sites at the Department of Environment Regulation.
Current Regulatory Notice Issued	**Type of Regulatory Notice:** *Nil* **Date Issued:** *Nil*
General	No other information relating to this parcel.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:10:56AM, 15/05/2025

Receipt No:

ID No: *63552*

Search Results

This response relates to a search request received for:

Canning Hwy
Applecross, WA, 6153
Approximate spatial representation of Canning Highway road reserve (Landgate PIN 1284137), adjacent to Caltex Service Station at 918 Canning Highway, Applecross WA 6153

This parcel belongs to a site that contains 2 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

Address

Canning Hwy
Applecross, WA, 6153
Approximate spatial representation of Canning Highway road reserve (Landgate PIN 1284137),

Parcel Status

Classification: 08/06/2023 - *Remediated for restricted use*

Nature and Extent of Contamination:

Hydrocarbons (such as from petrol and diesel) are present in soil and groundwater beneath the adjacent service station that extends to the east and south-east to beneath this site.

Restrictions on Use:

The land use of the site is restricted to the current commercial/industrial land use as a road reserve. The site should not be redeveloped for more sensitive commercial land uses such as childcare centres, or for residential or recreational open space, without further contamination assessment and/or remediation.

Due to the nature and extent of groundwater contamination, the abstraction of groundwater for any purpose is not recommended.

Deep excavation, trenching or access to unprotected below ground spaces should not be undertaken at the site without an appropriate OHS assessment and risk mitigation strategy f
The site is to be managed on an ongoing basis in accordance with the auditor approved SMP titled Site Management Plan, Portions of Canning Highway and Canning Beach Road Reserves, Ampol Applecross Service Station (55499) (AECOM, 19 November 2021). The SMP includes environmental and occupational health and safety management protocols to be implemented for sub-surface excavations below 0.6m depth.

Reason for Classification:

This site was reported to the Department of Water and Environmental Regulation (the department) as per reporting obligations under section 11 of the 'Contaminated Sites Act 2003' (the Act), which commenced on 1 December 2006.

The site was first classified based on information received by August 2017. The site has been classified again under section 13 of the Act to reflect additional technical information submitted to the

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:10:56AM, 15/05/2025

department by January 2022.

This site, comprising a portion of both the Canning Beach Road and Canning Highway road reserves, was reported because groundwater investigations carried out in 2016 to 2017 found hydrocarbons (such as from petrol or diesel) in groundwater beneath the adjacent service station, located at 918 Canning Highway Applecross extended beyond the property boundary to beneath this site. The service station has been classified separately under the Act.

Soil and groundwater contamination was initially identified beneath the service station during site investigations undertaken between 2005 and 2006. Hydrocarbons (such as from petrol and diesel) were found in soil and groundwater at concentrations exceeding ecological and health based criteria relevant at that time. The concentration of dissolved-phase hydrocarbons in groundwater indicated that light non-aqueous phase liquid (LNAPL) (such as pure petrol or diesel) was present in groundwater at the site.

Active remedial works were carried out at the service station between 2013 to 2014 comprising excavation and off-site disposal of infrastructure and accessible soils, pump-out and off-site disposal of approximately 26,500 litres of LNAPL to a licensed facility, and application of in-situ oxidation compounds.

Groundwater monitoring between 2016 and 2018 has found that a hydrocarbon (such as from petrol, diesel) plume remains present in groundwater beneath the service station that extends beneath the site i.e. the adjacent road reserves to the east and south-east. The hydrocarbon concentrations exceed assessment levels for non-potable use of groundwater specified in the 'Assessment and management of contaminated sites' (DWER, 2021) and exceed Water Quality Australia's default guideline values for the protection freshwater/marine ecosystems. These criteria were considered relevant as the site is within 60 to 130 metres of ecological receptors in the Canning River tidal estuary and due to potential for groundwater use (such as for garden/parks irrigation) on commercial or nearby recreational land.

Groundwater monitoring between 2014 and 2018 indicates that the plume has contracted and stabilised over time, and that natural attenuation is occurring.

Due to shallow groundwater conditions at the site (ie. less than 2 metres below ground level) and no relevant vapour guidelines being available, a soil vapour investigation and Tier 2 human health risk assessment was undertaken between 2014 and 2015. The investigation found that hydrocarbon impacted groundwater and soils in the groundwater smear zone pose a potential direct contact risk to sub-surface workers at the service station and the site.

A Site Management Plan (SMP) (dated November 2021) has been prepared in order to manage the potential environmental and health risks associated with any future excavations of soil below 0.6 metres below ground level and/or dewatering at the site.

A Tier 2 risk assessment has indicated that the contamination present on the site does not pose an unacceptable risk to human health, the environment or environmental values under the current land use. However, the contamination may present an unacceptable risk to human health under a more sensitive land use.

An accredited contaminated sites auditor (the auditor) has reviewed the progress of the site investigations, remediation works, risk assessment and proposed ongoing health risk management measures for the site. The auditor's findings are documented in two mandatory auditor's reports

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 11:10:56AM, 15/05/2025

	(dated 1 August 2017 and 8 November 2021, with Addendum dated January 2022). The department accepts the auditor's recommendation that the hydrocarbon plume appears stable and that the site is suitable for the current commercial/industrial land use, subject to ongoing implementation of the SMP and restriction on groundwater use. The site is contaminated and has been remediated such that it is suitable for the current land use, subject to implementation of the SMP and a restriction on groundwater use. Therefore, the site is classified as 'remediated for restricted use'. A memorial stating the site's classification will be placed on the certificate of title, and will trigger the need for further investigations and risk assessment should the site be proposed for a more sensitive land use. The department, in consultation with the Department of Health, has classified this site based on the information available to the department at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to the department, and as such, the usefulness of this information may be limited. **Other Relevant Information:** Additional information included herein is relevant to the contamination status of the site and includes the department's expectations for action that should be taken to address potential or actual contamination described in the Reasons for Classification. Based on the available information, contamination present on this site has originated from the adjacent land at 918 Canning Highway, Applecross which has been classified separately under the Act. Therefore, this site is consistent with the definition of an "affected site" as specified in Part 1, Section 3 of the Act. Under the Act, the person responsible for the remediation of a source site is also responsible for remediation of any related affected sites. **Action required:** Please refer to the Restrictions on Use applicable to the site.
Certificate of Title Memorial	Under the Contaminated Sites Act 2003, this site has been classified as "contaminated - remediation required". For further information on the contamination status of this site, please contact Contaminated Sites at the Department of Environment Regulation.
Current Regulatory Notice Issued	**Type of Regulatory Notice:** *Nil* **Date Issued:** *Nil*
General	No other information relating to this parcel.

Disclaimer
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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 12:27:45PM, 15/05/2025

Receipt No:	
ID No:	*71902*

Search Results

This response relates to a search request received for:

4 The Esplanade
Mount Pleasant, WA, 6153

This parcel belongs to a site that contains 3 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

Address	4 The Esplanade Mount Pleasant, WA, 6153
Lot on Plan Address	Lot 1855 On Plan 208889
Parcel Status	**Classification:** 11/04/2017 - *Remediated for restricted use* **Nature and Extent of Contamination:** Hydrocarbons (such as from diesel and petrol) are present in groundwater beneath the site. **Restrictions on Use:** The land use of the site is restricted to road reserve and recreation reserve under the current layout. The site should not be developed without further contamination assessment and/or remediation. Due to the presence of hydrocarbons in groundwater, any sub-surface excavation is to be conducted under the Site Management Plan (SMP, AECOM, 8 November 2016) until further notice. Other than for analytical testing, no new groundwater abstraction bores are permitted at this site (see exclusion zone as defined in the SMP (AECOM, 8 November 2016) because of the nature and extent of groundwater contamination. **Reason for Classification:** Information concerning this site was received by the Department of Environment and Regulation (DER) as part of groundwater investigations carried out between 1998 and 2014 at an adjacent site. This site has been classified under section 13 of the Contaminated Sites Act 2013 based on information submitted to DER by March 2017. The site has been affected by hydrocarbon (such as from petrol, diesel) impacted groundwater that has migrated from an adjoining source site. The source site is the service station located at 1 The Esplanade, Mount Pleasant. The affected site comprises The Esplanade road reserve located immediately adjacent to the source site, Lot 1854 on Plan 208889 (Crown Reserve 26811) and Canning Location 1855 (Crown Reserve 26758).

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 12:27:45PM, 15/05/2025

The service station has operated since 1952 and was originally reported because a series of contamination assessments, undertaken between 1994 and 2005, found hydrocarbons (such as from diesel and petrol) and lead in soil and groundwater migrating off-site toward the Canning River.

Groundwater monitoring undertaken from 1995 to 2005 indicated two areas of groundwater impact corresponding to areas of impacted soil. A main dissolved hydrocarbon plume was found to extend from the vicinity of underground storage tanks in the northern portion of the service station site, while a second dissolved hydrocarbon plume was found to extend from the south east corner of the service station site (now occupied by apartments).

Groundwater remediation has been by monitored natural attenuation with monitoring of the groundwater being conducted on a periodic basis.

Groundwater investigations to delineate the lateral and vertical extent of the groundwater impacts, and to monitor the effectiveness of the remediation works were conducted until 2014. The investigations have indicated a reduced contaminant plume beneath the site.

In 2014 hydrocarbons (such as from petrol, diesel) were present in groundwater at concentrations exceeding assessment levels for fresh waters and/or marine waters and non-potable use of groundwater as specified in the 'Assessment and management of contaminated sites' (DER 2014).

In 2012 a Health and Environmental Risk Assessment (HERA) was undertaken for the main plume. The HERA concluded that hydrocarbon impacted groundwater does not pose unacceptable health or environmental risk at the site.

An accredited contaminated sites auditor (the auditor) reviewed the site investigations and risk assessment for the site. The auditor's findings are documented in a mandatory auditor's report (dated 2 March 2017). The auditor concluded that based on the results of the investigation there is no unacceptable risk to human health and environment at the site, under the current land use. The Department of Health has indicated its acceptance of the auditor's conclusions.

The site has been demonstrated as being suitable for the road and recreational land use subject to restrictions.

The site is contaminated and has been remediated such that it is suitable for current land use, but may not be suitable for a more sensitive land use. Therefore, the site is classified as 'remediated for restricted use'.

A memorial stating the site's classification has been placed on the certificate of title, and will notify any prospective owners of the contamination status of the site. Due to the nature and extent of the current groundwater contamination identified to date, the abstraction of groundwater for any purpose is not recommended.

DER, in consultation with the Department of Health, has classified this site based on the information available to DER at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to DER, and as such, the usefulness of this information may be limited.

In accordance with Department of Health advice, if groundwater is being, or is proposed to be abstracted, DER recommends that analytical testing should be carried out to determine whether the

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 12:27:45PM, 15/05/2025

	groundwater is suitable for its intended use.
Certificate of Title Memorial	Under the Contaminated Sites Act 2003, this site has been classified as "remediated for restricted use". For further information on the contamination status of this site, please contact Contaminated Sites at the Department of Water and Environmental Regulation.
Current Regulatory Notice Issued	**Type of Regulatory Notice:** *Nil* **Date Issued:** *Nil*
General	No other information relating to this parcel.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 10:35:35AM, 15/05/2025

Receipt No:	
ID No:	*74803*

Search Results

This response relates to a search request received for:

Lot 51 On Plan 1751
Applecross, WA, 6153

This parcel belongs to a site that contains 1 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

Address	Lot 51 On Plan 1751 Applecross, WA, 6153
Lot on Plan Address	Lot 51 On Plan 1751
Parcel Status	**Classification:** 11/01/2019 - *Remediated for restricted use* **Nature and Extent of Contamination:** Hydrocarbons (such as from oils) are present in soil beneath the site. **Restrictions on Use:** The land use of the site is restricted to road reserve use; which excludes sensitive uses with accessible soil such as residential use, childcare centres, kindergartens, pre-schools and primary schools. The site should not be developed for a more sensitive use such as recreational open space; residential use or childcare centres without further contamination assessment and/or remediation. **Reason for Classification:** This site was reported to the Department of Water and Environmental Regulation (DWER) under section 11 of the 'Contaminated Sites Act 2003' (the Act), which commenced on 1 December 2006. The site has been classified under section 13 of the Act based on information submitted to DWER by December 2018. The site is a road verge location of a Western Power electrical transformer. The use or operation of electrical and power supply equipment is a land use that has the potential to cause contamination, as specified in the guideline "Assessment and management of contaminated sites" (Department of Environment Regulation, 2014). DWER was provided with a report indicating that an electrical transformer had leaked approximately 50 litres of hydrocarbon oil over an estimated area of 1.3 m x 2.0 m. The visual and olfactory evidence confirmed the presence of hydrocarbon discharge in soils. Remedial works were carried out on the impacted soil, however access to impacted soil was

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 10:35:35AM, 15/05/2025

	significantly restricted by surrounding infrastructure, and hydrocarbon (such as from oil) impacted soil remains on site at the base of the excavation at concentrations above ecological screening levels and management limits for commercial/industrial land use as published in the 'National Environment Protection Measure 1999' (the NEPM). Groundwater investigations have not been carried out, and the quality of the groundwater beneath the site is unknown. An Intermediate Risk Assessment has indicated that the contamination present on the site does not currently pose an unacceptable risk to human health, the environment or environmental values under the current land use, however the contamination may present an unacceptable risk to human health under a more sensitive land use. Based on the information provided, the site appears suitable for continued use as an operating transformer but may not be suitable for more sensitive land uses such as public open space, residential housing or childcare centres. As the site is suitable for the current land use, but may not be suitable for a more sensitive land use, the site has been classified as 'remediated for restricted use'. DWER, in consultation with the Department of Health, has classified this site based on the information available to DWER at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to DWER, and as such, the usefulness of this information may be limited. In accordance with Department of Health advice, if groundwater is being, or is proposed to be abstracted, DWER recommends that analytical testing should be carried out to determine whether the groundwater is suitable for its intended use. **Action Required:** Due to the presence of hydrocarbons in soils, DWER recommends that a site-specific health and safety plan be developed to address the health risks associated with intrusive site works.
Certificate of Title Memorial	Under the Contaminated Sites Act 2003, this site has been classified as "remediated for restricted use". For further information on the contamination status of this site, please contact Contaminated Sites at the Department of Environment Regulation.
Current Regulatory Notice Issued	**Type of Regulatory Notice:** *Nil* **Date Issued:** *Nil*
General	No other information relating to this parcel.

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 12:34:06PM, 15/05/2025

Receipt No:

ID No: *75696*

Search Results

This response relates to a search request received for:

1 Sleat Road
Applecross, WA, 6153
That portion of Lot 100 on Diagram 75742 as shown as Subject M on Deposited Plan 415521 on certificate of title 1967/963, known as 1 Sleat Street, Applecross WA 6153

This parcel belongs to a site that contains 1 parcel(s).

According to Department of Water and Environmental Regulation records, this land has been reported as a known or suspected contaminated site.

Address

1 Sleat Road
Applecross, WA, 6153
That portion of Lot 100 on Diagram 75742 as shown as Subject M on Deposited Plan 415521 on

Parcel Status

Classification: 02/07/2020 - *Remediated for restricted use*

Nature and Extent of Contamination:

Hydrocarbons (such as from transformer oil) are present in soils beneath the electrical transformer on this site.

Restrictions on Use:

The land use of the site is restricted to commercial/industrial use which excludes more sensitive uses such as public open space, residential, childcare centres, kindergartens, pre-schools and primary schools. The site should not be developed for a more sensitive use without further contamination assessment and/or remediation.

Reason for Classification:

This site was reported to the Department of Water and Environmental Regulation (the department) under section 11 of the 'Contaminated Sites Act 2003' (the Act), which commenced on 1 December 2006.

The site was first classified under section 13 of the Act based on information submitted to the department by May 2019. The site has been classified again under section 13 of the Act to reflect additional technical information submitted to the department by June 2020.

The site is a 17 square metres portion of land that contains a pad mounted electrical transformer, situated along the Macrae Road reserve, within the north-western section of Lot 100 on Diagram 75742, also known as 1 Sleat Road Applecross. The site lies immediately to the east of a residential dwelling with a small garden.

The site was reported because a damaged electrical transformer was found to have leaked hydrocarbons (such as from transformer oil) into soils beneath the transformer. Electrical equipment is a land use that has the potential to cause contamination, as specified in the guideline 'Assessment and management of contaminated sites' (Department of Environment Regulation [DER], 2014).

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 12:34:06PM, 15/05/2025

The department notes that approximately 80 to 200 litres of hydrocarbons had leaked into soil beneath the site. Remediation works were undertaken at the site in April 2018. However, another spillage incident in August 2018 released an additional 150 litres of hydrocarbon into the subsoil at the site.

The transformer was manufactured in 1989 and oil did not generally contain polychlorinated biphenyls (PCBs). A site investigation undertaken in August 2019 found that hydrocarbons were present in soil at concentrations exceeding the ecological screening levels (ESLs) for commercial and industrial land use as published in the guideline 'National Environment Protection (Assessment of Site Contamination) Measure 1999' (the NEPM).

The remedial works were undertaken in March and April 2020 which involved soil excavation under the transformer footprint area. Approximately 11.5 cubic metres of hydrocarbon impacted soils were disposed to a suitably licensed landfill facility.

Soil validation sampling found that residual hydrocarbons remain present in soil at around 3 metres below ground level at concentrations exceeding the ESLs for urban residential and public open space land use as published in the NEPM.

Groundwater investigation has not been carried out at the site and the quality of groundwater beneath the site is unknown.

The site is contaminated and has been remediated such that it is suitable for the current commercial/industrial land use, but may not be suitable for a more sensitive land use. Therefore, the site is classified as 'remediated for restricted use'.

Further assessment of the site contamination should be undertaken before any potential future change to a more sensitive land use (e.g. public open space, residential, childcare centres).

A memorial stating the site's classification has been placed on the certificate of title, and will trigger the need for further investigations and risk assessment should the site be proposed for a more sensitive land use.

The department, in consultation with the Department of Health, has classified this site based on the information available to the department at the time of classification. It is acknowledged that the contamination status of the site may have changed since the information was collated and/or submitted to the department, and as such, the usefulness of this information may be limited.

In accordance with Department of Health advice, if groundwater is being, or is proposed to be abstracted, the department recommends that analytical testing should be carried out to determine whether the groundwater is suitable for its intended use.

Other Relevant Information:

Additional information included herein is relevant to the contamination status of the site and includes DWER's expectations for action that should be taken to address potential or actual contamination described in the Reasons for Classification.

Where the land is part of a transaction - sale, mortgagee or lease agreement, the land owners MUST PROVIDE WRITTEN DISCLOSURE (on the prescribed Form 6) of the site's status to any potential owner, mortgagee (e.g. financial institutions) or lessee at least 14 days before the completion of the

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Contaminated Sites Act 2003
Basic Summary of Records Search Response

Report generated at 12:34:06PM, 15/05/2025

	transaction. A copy of the disclosure must also be forwarded to DWER. **Action Required:** Due to the presence of hydrocarbons in soils, the department recommends that a site-specific health and safety plan should be developed to address the risks to the health of any workers undertaking intrusive works below 3 metres depth.
Certificate of Title Memorial	Under the Contaminated Sites Act 2003, this site has been classified as "remediated for restricted use". For further information on the contamination status of this site, please contact Contaminated Sites at the Department of Water and Environmental Regulation.
Current Regulatory Notice Issued	**Type of Regulatory Notice:** *Nil* **Date Issued:** *Nil*
General	No other information relating to this parcel.

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Job ID 50012474

PTA Ferry PSI Applecross Site Rev A

Review responses online

Received 8 of 8 responses

All responses received

70-72 Canning Beach Road, Applecross
WA 6153

Job dates
29/04/2025 → 02/05/2025

These plans expire on
20 May 2025

Lodged by
Connor Asphar

Authority	Status	Page
BYDA Confirmation		2
ATCO Gas Australia	Received	4
NBN Co (WA)	Received	15
Nextgen (WA)	Received	27
Optus (WA)	Received	41
Telstra (WA)	Received	55
Vocus (WA)	Received	64
Water Corporation	Received	74
Western Power	Received	92

Job No 50012474

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byda.com.au

Contact Details

Contact	Contact number	Company	Enquirer ID
Connor Asphar	0476 786 556	GHD	3698396

Email
connor.asphar@ghd.com

Address
Level 10 999 Hay Street
Perth WA 6000

Job Site and Enquiry Details

WARNING: The map below only displays the location of the proposed job site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

Enquiry date	Start date	End date	On behalf of	Job purpose	Locations	Onsite activities
22/04/2025	29/04/2025	02/05/2025	Other Public Transport Authority	Excavation	Both Road, Nature Strip, Footpath	Manual Excavation

Check that the location of the job site is correct. If not, you must submit a new enquiry.

If the scope of works change or plan validity dates expire, you must submit a new enquiry.

Do NOT dig without plans. Safe excavation is your responsibility. If you don't understand the plans or how to proceed safely, please contact the relevant asset owners.

User Reference	Address	Notes/description
PTA Ferry PSI Applecross Site Rev A	70-72 Canning Beach Road Applecross WA 6153	-

Your Responsibility and Duty of Care

- **Lodging an enquiry does not authorise project commencement.** Before starting work, you must obtain all necessary information from all affected asset owners.
- If you don't receive plans within 2 business days, contact the asset owner & quote their sequence number.
- Always follow the 5Ps of Safe Excavation (page 2), and locate assets before commencing work.
- Ensure you comply with State legislative requirements for Duty of Care and safe digging.
- If you damage an underground asset, you MUST advise the asset owner immediately.
- By using the BYDA service, you agree to the Privacy Policy and Term of Use.
- For more information on safe digging practices, visit www.byda.com.au

Asset Owner Details

Below is a list of asset owners with underground infrastructure in and around your job site. It is your responsibility to identify the presence of these assets. Plans issued by Members are indicative only unless specified otherwise. Note: not all asset owners are registered with BYDA. You must contact asset owners not listed here directly.

Referral ID (Seq. no)	Authority Name	Phone	Status
253972157	ATCO Gas Australia	1300 926 755	NOTIFIED
253972153	NBN Co (WA)	1800 687 626	NOTIFIED
253972151	Nextgen (WA)	1800 262 663	NOTIFIED
253972150	Optus (WA)	1800 505 777	NOTIFIED
253972154	Telstra (WA)	1800 653 935	NOTIFIED
253972152	Vocus (WA)	1800 262 663	NOTIFIED
253972155	Water Corporation	13 13 95	NOTIFIED
253972156	Western Power	13 10 87	NOTIFIED

END OF UTILITIES LIST

The 5Ps of Safe Excavation

Plan

Plan your job. Use the BYDA service at least one day before your job is due to begin, and ensure you have the correct plans and information required to carry out a safe project.

Prepare

Prepare by communicating with asset owners if you need assistance. Look for clues onsite. Engage a skilled Locator.

Pothole

Potholing is physically sighting the asset by hand digging or hydro vacuum extraction.

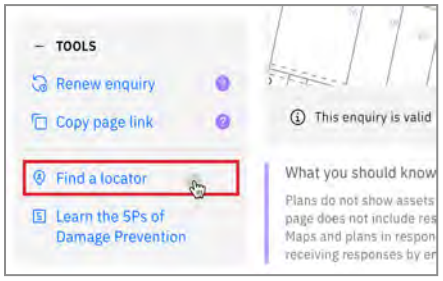
Protect

Protecting and supporting the exposed infrastructure is the responsibility of the excavator. Always erect safety barriers in areas of risk and enforce exclusion zones.

Proceed

Only proceed with your excavation work after planning, preparing, potholing (unless prohibited), and having protective measures in place.

Engage a skilled Locator



When you lodge an enquiry you will see skilled Locators to contact

Visit the Certified Locator website directly and search for a locator near you

certloc.com.au/locators

Get FREE Quotes for Contractors & Equipment Fast

GET QUOTE

Use iseekplant's FREE marketplace to get quotes for the equipment or services you need on your project. Compare quotes from trusted local contractors and get your project done on time and in budget.

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3. The local contractors will contact you directly with quotes

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blog.iseekplant.com.au/byda-isp-get-quotes

Book a FREE BYDA Session

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BYDA offers free training sessions to suit you and your organisation's needs covering safe work practices when working near essential infrastructure assets. The free sessions are offered in two different formats - online and face-to-face.

To book a session, visit:
byda.com.au/contact/education-awareness-enquiry-form

Lodge your FREE enquiry online any time at byda.com.au

ATCO Gas Australia

Referral
253972157

Member Phone
1300 926 755

Responses from this member

Response received Tue 22 Apr 2025 9.37am

File name	Page
Response Body	5
Legend 253972157.pdf	6
ASSET 800 Map 800 253972157.pdf	7
ASSETS AFFECTED 253972157.pdf	11

Attention: **Connor Asphar**

Thank you for your Before You Dig (BYDA) enquiry.

Job Number: **50012474**

Sequence Number: **253972157**

Dig Site Location: **70-72 Canning Beach Road Applecross WA 6153**

According to our records, your enquiry with the following details **impacts our infrastructure**. Please ensure that you read the attached documents, it contains important information including essential steps that must be undertaken prior to commencing construction activities.

This enquiry is valid for **30 days** from the enquiry date.

If you require further information or assistance with interpretation of plans, please contact **ATCO** on **1300 926 755** or ATCOBYDA@atco.com

This enquiry response, including any associated documentation, has been assessed and compiled from the information detailed within the BYDA enquiry outlined above. Please ensure that the BYDA enquiry details and this response accurately reflect your proposed works.

SYMBOLS SHEET
GAS UTILITY NETWORK

EXISTING GAS NETWORK
- Transmission Pipelines
- Distribution Pipelines
- Distribution Pipe MAOP 350kPa
- Distribution Pipe MAOP 70kPa
- Distribution Pipe MAOP 7kPa
- Not Gassed (none)
- Service Pipe

PROPOSED GAS ASSETS
- Proposed Meter
- Proposed Main
- Common Trenching
- Replacement Program

ABANDONED GAS NETWORK
- Inactive / Removed Meter
- Abandoned Fitting
- Abandoned Valve
- Abandoned Gas Main
- Abandoned Fitting SOLD
- Abandoned Valve SOLD
- Abandoned Gas Main SOLD

COMPOUNDS
- Gate Station
- Pressure Reducing Station
- L.P.G. Tank
- Hydrogen Plant

VALVES
- Isolation Valves
- Service Valves

MONITORING DEVICES
- Flow Monitoring Device
- Pressure Monitoring Device

ASSOCIATED INFRASTRUCTURE
- Associated Asset

DUCTS AND SLEEVES
- Duct
- Horizontal Boring
- Sleeve
- Road Crossing
- Concrete Slabbing

REGULATOR SETS
- Regulator Set
- Boundary Regulator

DELIVERY POINTS
- Meter
- Interval Meter
- Meter Set

PIPE JUNCTIONS
- End Cap
- Expansion Joint
- Reducer
- Tee
- Transition
- Weld
- Monolithic Joint
- Stopple
- Odorizer
- Junctions

PROTECTION DEVICES
- Test Point
- Anode
- Rectifier

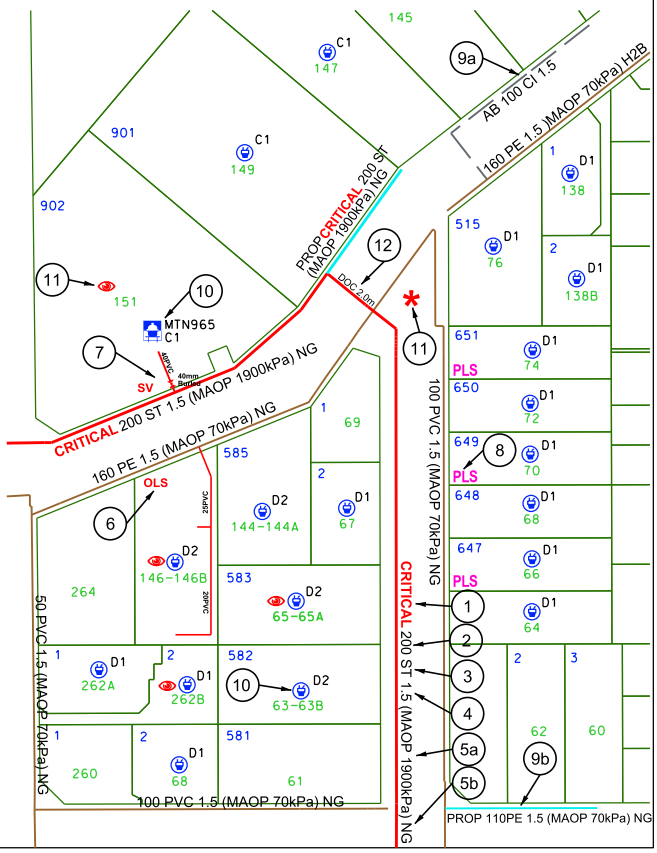
FEATURES

SC	Side Elevation		Linked Document
	Obstacle	PLS	Pre-Laid Service
	See Details	PLSS	Pre-Laid Service Stairs
NC	Not Connected	PLST	Pre-Laid Service Tee
SV	Gas Service	BL	Asset end on Main
	Sign	CoD	Asset ends on Direction Peg
OLS	Offline Service		

- Reference Line
- Gas Pit
- DOC 1.2m — Arrow Pointer
- Proving Location
- Pressure Upgrade
- Not Gassed
- Suburb
- Local Government

Asset Identifaction Legend

1. **Critical Asset** (**See Cover Sheet WARNINGS**)
2. Pipe Diameter (millimetres)
3. Pipe Material:
   CI = Cast Iron PE = Polyethylene, GI = Galvanised Iron, PVC = PVC, ST = Steel
4. Alignment (in metres from property line)
5. Pressure in main & Gas Type
   5a) MAOP (Maximum Allowable Operating Pressure)
   5b) Gas Type:
   NG = Natural Gas.
   H2B = Natural Gas Blended with % Hydrogen.
   LPG = Liquefied Petroleum Gas.
6. Off-line Service service may not be straight line to meter. (**WARNING OLS may not always be shown on plan**). See Cover Sheet for More Informattion.
7. Service Valve in the vicinity
   (**NOTE:** Service Valve may be **"BURIED"**)
8. Pre-laid Service laid in Common Trench
9. Main Status: (See **Cover Sheet WARNINGS**)
   9a. AB & ABS = Abandoned Mains, Ab Sold.
   9b. PROP = Proposed Mains
10. Customer Connection: Does not indicate actual location of Meter Position
    D2 (D = Domestic & 2 = Number of Meters)
    C1 (C = Commercial & 1 = Number of Meters)
11. **Additional detail available and Must be obtained if within area of proposed works see Cover Sheet.**
12. Depth of Cover (DOC) in metres.



ATCO

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ABN: 90 089 531 975

Date: 22/04/25 (valid for 30 days)
Index Sheet

Seq # 253972157
Job # 50012474

BYDA Location: 70-72 Canning Beach Road Applecross 6153
Scale: 1:2,500

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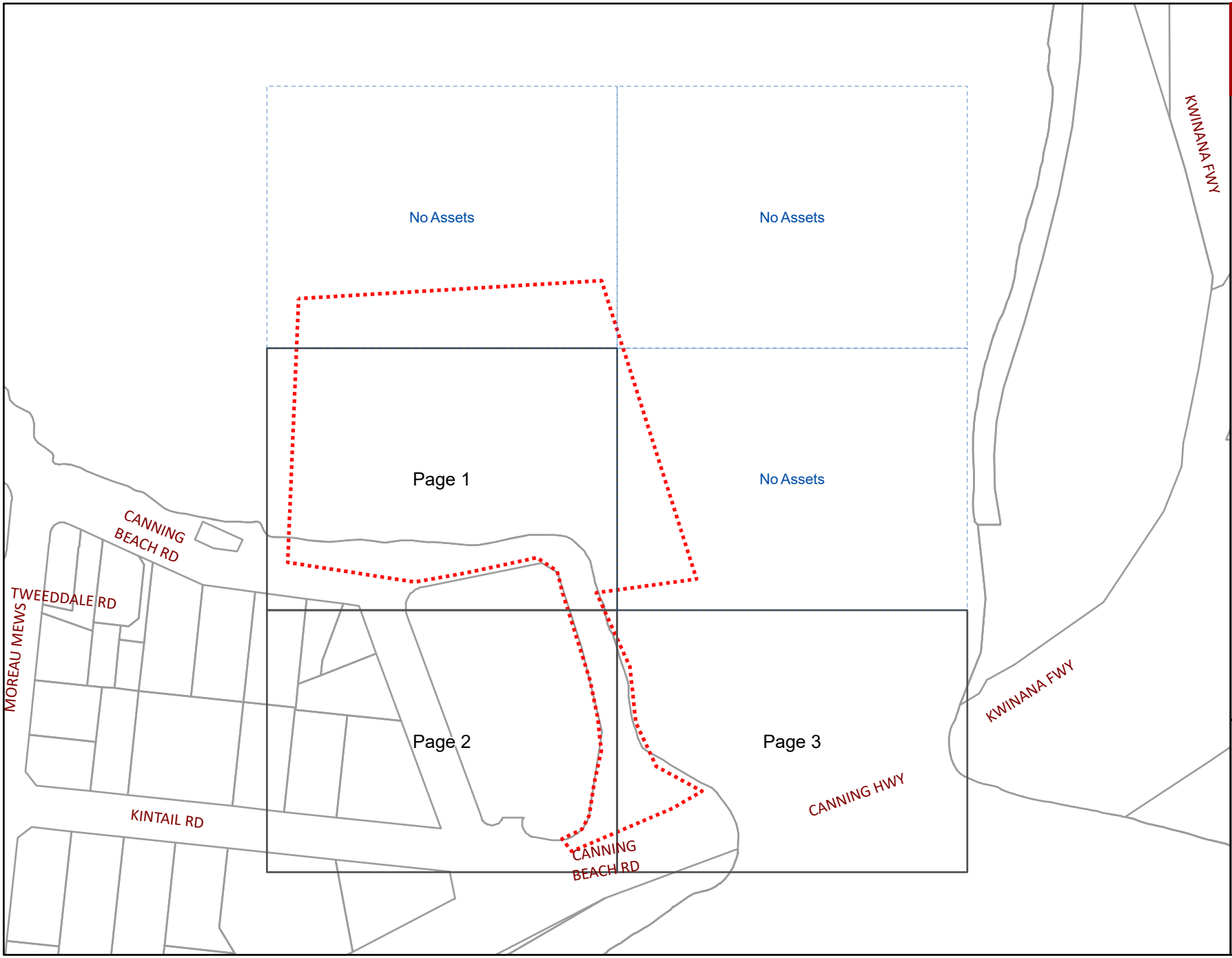

WARNING
Refer to Cover Sheet for Further Information

- BYDA Enquiry
- Detailed map page
- No dig site assets

Please refer to Symbols Sheet for Further Information

Disclaimer:
Please read all **warnings**, conditions and information on the attached "Underground Asset Details" information sheet. This plan is issued subject to that information and those conditions and **warnings** (including, but not limited to, the "NO HOT WORKS" warning). Plans are current for only **30 days** from date of request, indicative only and not warranted to be accurate. It is your responsibility to carefully locate underground assets and follow safe work practises and procedures (eg pot-holing).
ATCO Gas Australia will seek compensation for damage caused to assets.

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ATCO

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ABN: 90 089 531 975

Date: 22/04/25 (valid for 30 days)

Seq # 253972157
Job # 50012474

BYDA Location: 70-72 Canning Beach Road Applecross 6153
Scale: 1:800

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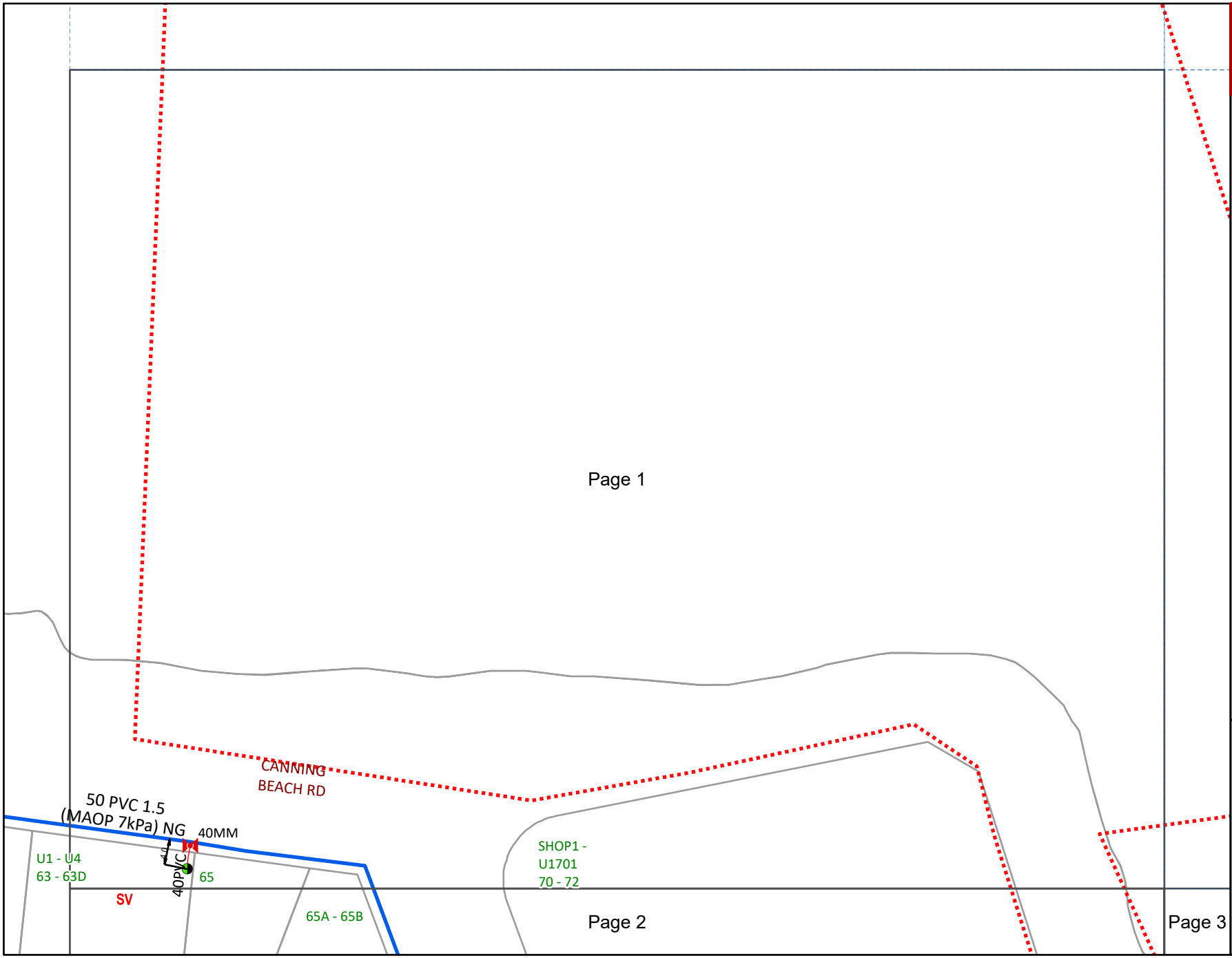

WARNING
Refer to Cover Sheet for Further Information

- BYDA Enquiry
- Transmission Pipelines MAOP > 1900kPa
- Distribution Pipelines MAOP > 500kPa ≤ 1900kPa
- Not Gassed 0kPa
- Distribution Pipe MAOP ≤ 7kPa
- Distribution Pipe MAOP > 7kPa ≤ 100kPa
- Distribution Pipe MAOP > 7kPa ≤ 100kPa
- Distribution Pipe MAOP > 100kPa ≤ 350kPa
- Common Trench
- Standard Laying
- Relay Program
- Abandoned Pipe
- Abandoned Pipe Sold
- Service Pipe
- Meter
- Interval Meter
- Proposed Meter
- Removed Meter
- Linked Documents
- See Details
- OLS Offline Service
- BL End of Main Building
- CoD End of Main on Direction Peg
- SV Gas Service
- NC Not Connected
- Obstacle
- SC Side Elevation
- Sign
- PLS Pre Laid Service
- PLSS Pre Laid Service Stairs

Please refer to Symbols Sheet for Further Information

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ATCO

©ATCO Gas Australia Pty LTD
ABN: 90 089 531 975

Date: 22/04/25 (valid for 30 days)

Seq # 253972157
Job # 50012474

BYDA Location: 70-72 Canning Beach Road Applecross 6153
Scale: 1:800

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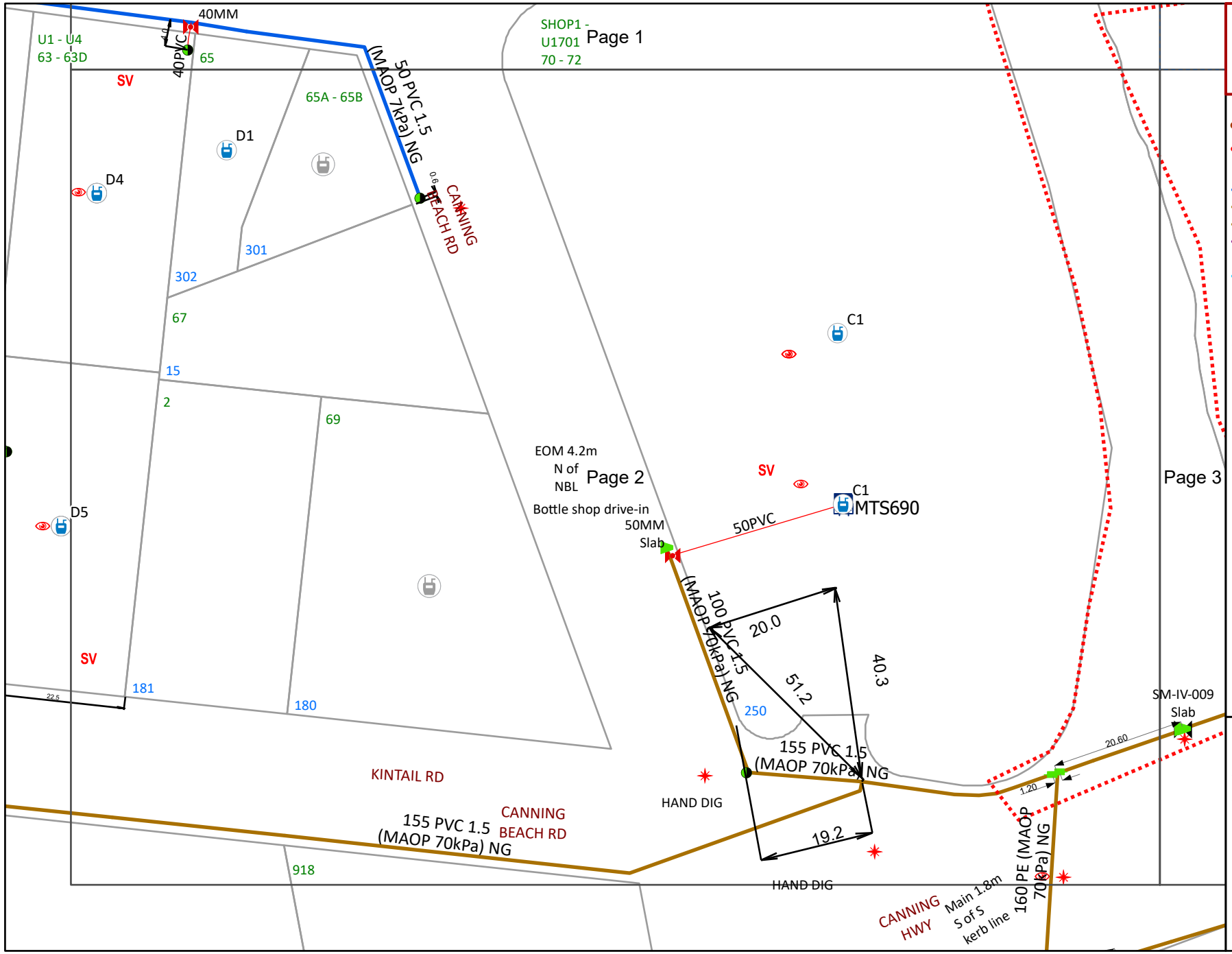

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BYDA Location: 70-72 Canning Beach Road Applecross 6153
Scale: 1:800

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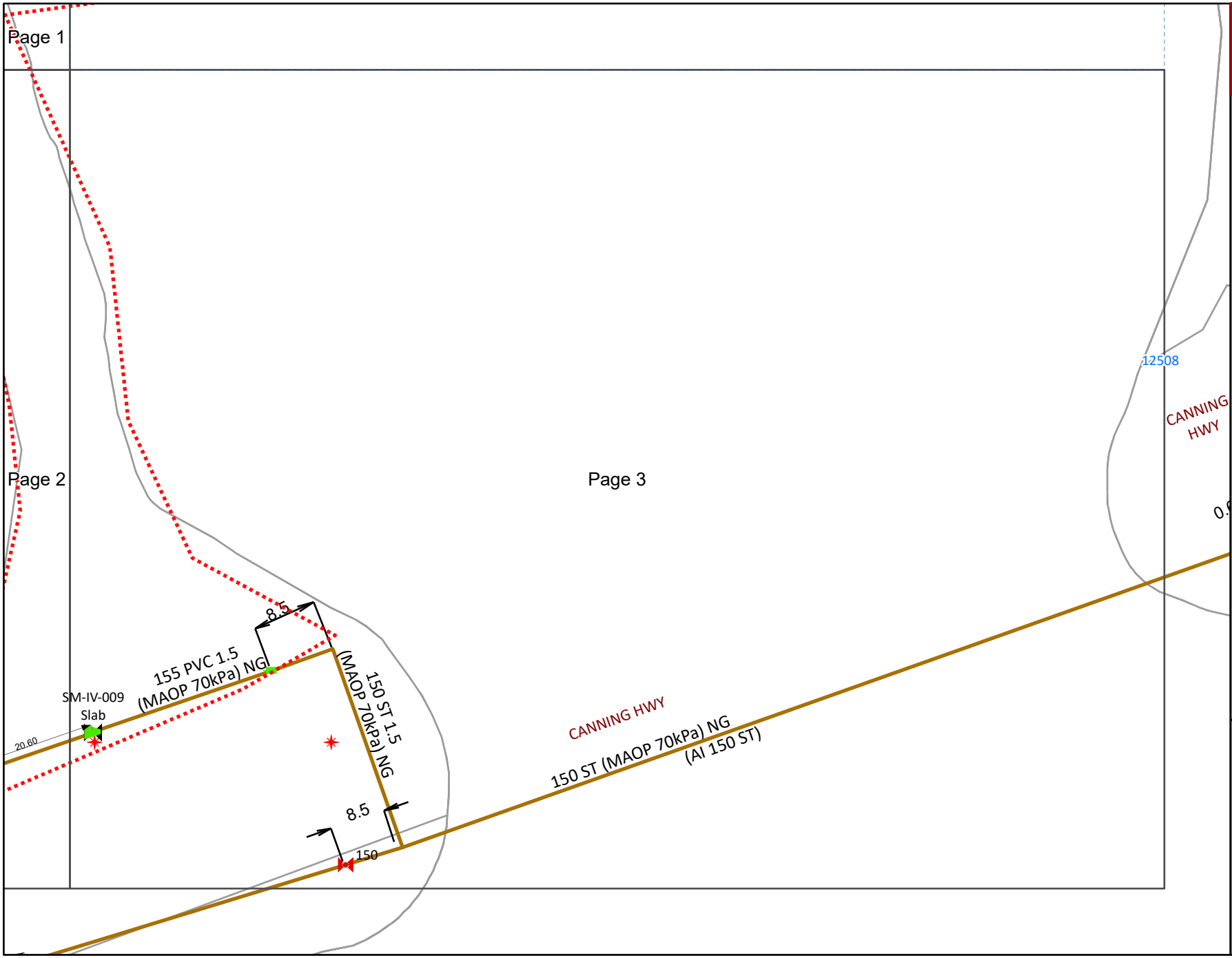

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Please read all **warnings**, conditions and information on the attached "Underground Asset Details" information sheet. This plan is issued subject to that information and those conditions and **warnings** (including, but not limited to, the "NO HOT WORKS" warning). Plans are current for only **30 days** from date of request, indicative only and not warranted to be accurate. It is your responsibility to carefully locate underground assets and follow safe work practises and procedures (eg pot-holing).
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ATCO UNDERGROUND ASSET DETAILS ASSETS AFFECTED

GAS DIVISION

ASSETS AFFECTED – see accompanying Plan

Connor Asphar
ATCO Gas Australia
Level 10 999 Hay Street
Perth
WA 6000

Job No: **50012474**
Sequence No: **253972157**
Date of Issue: 22 April 2025
Phone: **1300 926 755**

BYDA Utility Registration Name: Public Transport Authority
BYDA Location: **70-72 Canning Beach Road Applecross WA 6153**

ATTENTION: This response to your enquiry has been interpreted from details in your requested DBYD picture location request only (not any street address you gave). It is your duty to ensure the accompanying plan/s match your geographical area of works.

IF YOU SEE, HEAR, SMELL OR OTHERWISE DETECT GAS,
LEAVE THE IMMEDIATE AREA AND THEN CALL 13 13 52

Our records indicate that ATCO gas infrastructure ***IS PRESENT*** in the vicinity of and/or surrounding area of the above enquiry. This response relates only to ATCO assets. Your Duty of Care requires that personnel **Must** at all times comply with, and have on site, this information sheet and the accompanying plan(s). All plans are subject to this information sheet. You should refer to the ATCO Self-service Portal (Link Here) or if unsure, contact ATCO on **1300 926 755** during business hours.

All information provided is to be used as a guide only (see Disclaimer item **5**). It does not absolve you or third parties from your Duty of Care obligations, including to take additional precautions where work has the potential to impact on gas assets, public safety or the environment, or from your duties at law (including Reg 3.21 of the Occupational Safety and Health Regulations 1996).

WARNINGS

- No works of any type within 15 metres of any **CRITICAL GAS ASSET** infrastructure without prior approval from ATCO
- **NO HOT WORK** within 15 metres of any gas infrastructure except in compliance with applicable laws & *Australian Standard 1674.* **Do Not** let heat sources or hot works impact on any gas infrastructure and take into consideration that the ground or adjacent structures may also be capable of transmitting heat so as to circumvent protection afforded by a heat shield or barrier
- **DANGER** - Gas can cause asphyxiation and is flammable. Keep all ignition sources well away (e.g., flames, matches/ lighters, sparks, electrical devices, vehicles or engines, mobile phones, cameras)
- Gas pipes **Must Not** be unsupported or left without adequate cover or protection without prior approval from ATCO
- Damage to the pipe coating or pipe itself can be very dangerous if not given immediate attention. Report any damage to ATCO immediately on **13 13 52**. **Do Not** attempt to repair any damaged gas infrastructure
- No alteration or removal of live or abandoned gas infrastructure without prior written approval from ATCO
- Any abandoned or proposed gas infrastructure indicated on the gas plans **Must** be treated as live
- Never assume the location or depth of any gas infrastructure. Pipes may not follow straight lines or maintain a constant depth. Always check carefully (e.g., by careful hand digging of potholes)
- Unauthorised repairs or tampering with gas infrastructure may result in prosecution under the *Energy Operators (Powers) Act 1979*. ATCO Gas Australia reserves all rights to recover compensation for loss or damage to its gas infrastructure or other property including for indirect or consequential losses.

PLANS:

Plans provided are current for **30 days only** from date of request. You must use current plans at all times.

Plans do not show all gas service lines (which connect gas mains to individual meter positions). See condition **3.c)** below.

If plan shows **additional detail** symbols (*) or ( ) in the area of proposed works it is **your duty** to obtain that further detail from the number below.

Plans (including the location of pipes, services, infrastructure and boundaries) are **approximate only**. You **Must** use safe and proper procedures – including **potholing** (see condition **4** below).

Plans are not a guide as to gas availability for connection purposes.

To call ATCO: **Weekdays from 7.30am to 3.30pm, call – 1300 926 755 After hours, weekends and emergencies, call – 13 13 52**

CONDITIONS FOR WORKS IN THE VICINITY OF ATCO ASSETS

1. Compliance with Warnings

You **Must** comply with the Warnings contained in this information sheet and the accompanying plan(s).

2. Compliance with 'Working around Gas Infrastructure' Document (Link Here) applicable laws and duty of care

All work (including but not limited to using Excavator's Augers, Directional, drilling machines, 'Ditch Witch' type trenching machine, Loader, Dozer, Skid Steer (Bob Cat)) **Must** comply with all applicable requirements in the 'Working around Gas Infrastructure' Document and with all applicable laws and Australian Standards. All due care must be exercised to locate any gas infrastructure in the vicinity and when conducting any works near them.

3. All Gas Infrastructure

All work that may have any impact upon any gas infrastructure (see **3.a)**, **b)** and **c)** below for examples) should be carefully planned with notification to ATCO well in advance of commencement. Contact ATCO on **1300 926 755** or visit Atco's online self-service portal (Link Here). Amongst other things, this includes excavation of or near gas pipelines, boring/drilling, crossings of pipelines (including by other underground infrastructure e.g. drains, power cables, etc.), road works and structural installations. In addition:

a) Critical Asset

No works of any type are permitted within 15 meters of these pipelines without prior approval from ATCO. For approvals contact ATCO on **1300 926 755** or visit the Atco online Self-service portal (Link Here)

You **Must** ascertain the location of any Critical Asset, in relation to your proposed work by:

- Locating a straight line between two marker danger signs, and
- Assessing the distance from this line to your proposed work area.

ATCO may require stand-by supervision during your works and will advise of attendance requirements.

b) Non Critical Assets

These pipelines are installed in most streets throughout the Perth metro area and several country centers. Main valves, regulator sets, and test points also exist at intervals along these pipelines. Where work may impact upon these pipelines or assets then ATCO **Must** be contacted as per item **3** above.

c) Gas Services and Meters

If a gas meter is installed on a property, an underground gas service pipe will run from the meter position to the gas main in the street. Plans do not show all gas service lines (with the exception of Critical Assets), but their presence must be anticipated. Most gas meter boxes installed since 1996 will include a sticker giving approximate guidelines for the gas service line location. All due care must be exercised to locate any gas services in the vicinity and when conducting any works near them.

4. Compliance with Safe Work Practices

It is your responsibility to have and comply with adequate safe work practices and procedures. Without limiting your obligations:

PLAN The complete & current Before you Dig Australia documentation and plans must always be on site & referred to for the duration of work. Refer to regulation 3.21 of the Occupational Safety and Health Regulations 1996 and the Utility Providers "Code of Practice" for further useful information.

PREPARE Prepare by reviewing the Before you Dig Australia Documentation and contacting ATCO if you need assistance. Look for onsite ATCO asset and infrastructure clues such as pit lids, marker posts and meters. No works of any type are permitted within 15 meters of a **CRITICAL ASSET** without prior approval from ATCO. For approvals contact ATCO on **1300 926 755** or visit the Atco website Self Service portal (Link Here) and allow suitable

processing time. Atco recommends engaging a BYDA Certified Locator which includes undertaking electronic location prior to potholing.

POTHOLE Using current Before you Dig Australia plans, all gas pipes should be located (including any deviation in the direction of a gas pipe) by exposing them by careful digging using a HAND SHOVEL. Where the proposed work is parallel to a gas pipeline, pothole every 10 meters along the entire route. Damage to the pipe coating or to the pipe itself can create a very dangerous situation if not given immediate attention. If damage does occur, it **Must** be reported to ATCO immediately on Ph. **13 13 52**.

PROTECT Supervise and monitor all excavations near gas infrastructure using a dedicated spotter. Where any gas infrastructure is required to be exposed, adequate protection of the gas infrastructure is required to prevent potential damage. Also implement appropriate controls when conducting 'hot work' (in accordance with AS 1674) in the vicinity of the ATCO infrastructure such as; isolation; separation distance; the placement of an effective non-combustible barrier of sufficient size and thermal resistance for the intensity, type and duration of heat exposure; gas monitoring; monitoring the environment surrounding the ATCO infrastructure to ensure it is not being impacted by the work, and other controls as necessary.

PROCEED You should **only proceed** with your excavation work after you have planned, prepared, potholed (unless prohibited) and have protective measures in place. All locations markers/pegs are to be removed on completion of works. If you are unsure, **DO NOT** Proceed. Call ATCO on **1300 926 755**

5. Disclaimer and Further Terms

a) Nothing in this document, any accompanying plan or the 'Additional Information for Working around Gas Infrastructure' (AGA-O&M-PR24) (together called "**Documents**") purports to exclude or modify any term, condition or warranty to the extent that by law it cannot lawfully be excluded or modified by agreement or notice, including but not limited to those contained in Schedule 2 of the *Competition and Consumer Act* 2010 (Cth) and corresponding provisions of any state legislation.

b) If any of ATCO, or their respective related entities, officers, employees, agents, contractors or advisers (together called "**Associates**") is liable for a breach of a term, condition or warranty described in paragraph **5.a)** above, its liability is, to the fullest extent permitted by law, limited to any one or more of the

following as it determines in its absolute discretion:

i) in relation to goods supplied by them, replacing or repairing the goods, supplying an equivalent item, paying the cost of replacing or repairing the goods or paying the cost of acquiring or hiring an equivalent item; and

ii) in relation to services supplied by them, the re-supply of the services or the payment of the cost of having the services re-supplied.

c) Subject to paragraphs **5.a)** and **b)**, but otherwise despite any other provision in the Documents, no representation or warranty is made or given (whether expressly or by implication) by any of ATCO or their respective Associates in respect of any information contained or referred to in any of the Documents or in any other communication from ATCO concerning any of the Documents or the subject matter of any of the

Documents ("Information"). In particular, but without limiting the generality of the foregoing limitation, none of ATCO or their respective Associates makes any warranty or representation as to the truth, accuracy, completeness, reliability, currency, timeliness, quality or fitness for any purpose of or the standard of care taken in the preparation of any Document or Information (including, but not limited to, the accuracy of the scale of, or the location of anything or symbol shown on, any plan or diagram).

d) Subject to paragraphs **5.a)** and **b)**, to the maximum extent permitted by law, none of ATCO or their respective Associates is liable to any person or other body ("**Recipient**") who receives or otherwise obtains access to all or any part or parts of the Documents or Information, in any way (including, but not limited to, liability for negligence, breach of statutory duty or lack of care) in respect of any cost, expense, damages, loss or liability, including, but not limited to:

i) any financial or economic loss, cost, expense or damage, including but not limited to loss of production, loss of profit, loss of revenue, loss of use, loss of contract, loss of goodwill or loss of business opportunity;

ii) any new or increased costs or expenses, including but not limited to financing or operating costs;

iii) any failure to achieve any actual or anticipated saving in respect of any cost or expense;

iv) any cost, expense, damage or loss resulting from any liability of the Recipient to any other person or body howsoever and whensoever arising, suffered or incurred by the Recipient in relation to, or in connection with, the disclosure to them of, or use of, or reliance on, all or any

part or parts of the Documents or Information.

e) By using any Document or Information, each Recipient is taken to represent and warrant to ATCO that the Recipient will comply with the conditions and other terms referred to in the Documents or Information, including but not limited to conditions that:

i) the Recipient **Must** comply with the conditions in numbered paragraphs **1** to **4** above and this paragraph **5**;

ii) as between ATCO and each Recipient, ATCO owns the Information and all rights and title in and to the Information are to remain vested in ATCO;

iii) no Recipient has any right, title or interest in the Information or, except as expressly provided for in the Documents, any license or right to copy, alter, modify, publish or otherwise use or deal with the Information without prior written approval from ATCO;

iv) ATCO makes no representation and gives no warranty as to its right to disclose any Information;

v) the Recipient relies on any Information entirely at its own risk and expense;

vi) the Recipient **Must** undertake its own independent due diligence and investigations in relation to the Information;

vii) none of ATCO or their respective Associates owes the Recipient any duty of care in respect of the Information; and

viii) none of ATCO or their respective Associates is under any obligation to correct, update or revise any Documents or Information.

GAS MAIN AND SERVICE IDENTIFICATION

LEGEND

1. Critical Asset (See **WARNINGS** page 1)
2. Pipe Diameter (millimetres)
3. Pipe Material

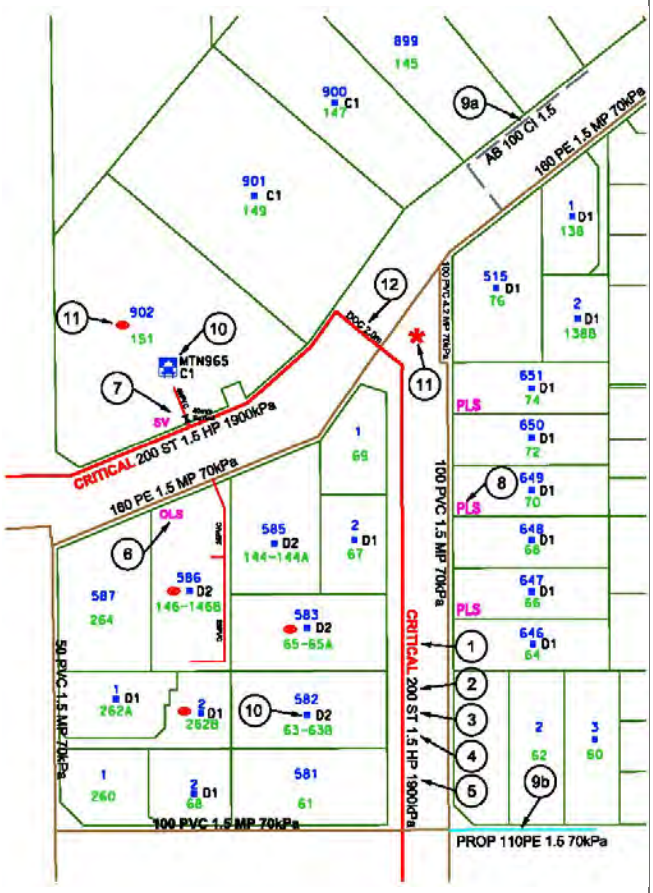
   CI = Cast Iron PE = Polyethylene
   GI = Galvanised Iron PVC = PVC
   ST = Steel
4. Alignment (in metres from property line)
5. Pressure in main (MP 70 kPa = Medium Pressure and MAOP (Maximum Allowable Operating Pressure)
6. Off-line Service – service may not be straight line to meter. (**WARNING – OLS may not always be shown on plan**. See item **Error: Reference source not found** above)
7. Service Valve in the vicinity
   (**NOTE:** Service Valve may be **"BURIED"**)
8. Pre-laid Service laid in Common Trench
9. Main Status: (See **WARNINGS** page 1)

   9a. AB = Abandoned Mains

   9b. PROP = Proposed Mains
10. Customer Connection: Does not indicate actual location of Meter Position

    D2 (D = Domestic & 2 = Number of Meters)

    C1 (C = Commercial & 1 = Number of Meters)
11. **Additional detail available and Must be obtained if within area of proposed works – see page 2 above.**
12. Depth of Cover (DOC) in metres.



IF UNSURE, PLEASE CONTACT ATCO ON **1300 926 755**

NBN Co (WA)

Referral
253972153

Member Phone
1800 687 626

Responses from this member

Response received Tue 22 Apr 2025 9.38am

File name	Page
Response Body	16
Disclaimer_253972153_20250422_013735590564.pdf	17
4678_NBN_Dial_Before_You_Dig_Poster_20170517.pdf	21
253972153_20250422_013735590564_1.pdf	23

Hi Connor Asphar,

Please find attached the response to your DBYD referral for the address mentioned in the subject line.
The location shown in our DBYD response is assumed based off the information you have provided. If the location shown is different to the location of the excavation then this response will consequently be rendered invalid.
Take the time to read the response carefully and note that this information is only valid for 28 days after the date of issue.
If you have any further enquiries, please do not hesitate to contact us.

Regards,
Network Services and Operations
NBN Co Limited
P: 1800626329
E: dbyd@nbnco.com.au
www.nbnco.com.au

Confidentiality and Privilege Notice
This e-mail is intended only to be read or used by the addressee. It is confidential and may contain legally privileged information. If you are not the addressee indicated in this message (or responsible for delivery of the message to such person), you may not copy or deliver this message to anyone, and you should destroy this message and kindly notify the sender by reply e-mail. Confidentiality and legal privilege are not waived or lost by reason of mistaken delivery to you. Any views expressed in this message are those of the individual sender, except where the sender specifically states them to be the views of NBN Co Limited

Please Do Not Reply To This Mail

To:	Connor Asphar
Phone:	Not Supplied
Fax:	Not Supplied
Email:	connor.asphar@ghd.com

Before You Dig Australia Job #:	50012474
Sequence #	253972153
Issue Date:	22/04/2025
Location:	70-72 Canning Beach Road , Applecross , WA , 6153

Information

The area of interest requested by you contains one or more assets.

nbn™ Assets	Search Results
Communications	Asset identified
Electricity	No assets

In this notice **nbn™ Facilities** means *underground fibre optic, telecommunications and/or power facilities, including but not limited to cables, owned and controlled by* ***nbn™***

Location of **nbn™** Underground Assets

We thank you for your enquiry. In relation to your enquiry at the above address:

- **nbn's** records indicate that there **ARE nbn™** Facilities in the vicinity of the location identified above ("Location").
- **nbn** indicative plan/s are attached with this notice ("Indicative Plans").
- The Indicative Plan/s show general depth and alignment information only and are not an exact, scale or accurate depiction of the location, depth and alignment of **nbn™** Facilities shown on the Plan/s.
- In particular, the fact that the Indicative Plans show that a facility is installed in a straight line, or at uniform depth along its length cannot be relied upon as evidence that the facility is, in fact, installed in a straight line or at uniform depth.
- You should read the Indicative Plans in conjunction with this notice and in particular, the notes below.
- You should note that, at the present time, the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables. As such, consistent with the notes below, particular care must be taken by you to make your own enquiries and investigations to precisely locate any power cables and manage the risk arising from such cables accordingly.
- The information contained in the Indicative Plan/s is valid for 28 days from the date of issue set out above.You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g BYDA Certified Locators, at your cost to locate **nbn™** Facilities during any activities you carry out on site).

We thank you for your enquiry and appreciate your continued use of the Before You Dig Australia Service. For any enquiries related to moving assets or Planning and Design activities, please visit the **nbn** Commercial Works website to complete the online application form. If you are planning to excavate and require further information, please email dbyd@nbnco.com.au or call 1800 626 329.

Notes:

1. You are now aware that there are **nbn™** Facilities in the vicinity of the above property that could be damaged as a result activities carried out (or proposed to be carried out) by you in the vicinity of the Location.
2. You should have regard to section 474.6 and 474.7 of the *Criminal Code Act 1995* (CoA) which deals with the consequences of interfering or tampering with a telecommunications facility. Only persons authorised by **nbn** can interact with **nbn's** network facilities.
3. Any information provided is valid only for **28 days** from the date of issue set out above.

Referral Conditions

The following are conditions on which **nbn** provides you with the Indicative Plans. By accepting the plans,you are agreeing to these conditions. These conditions are in addition, and not in replacement of, any duties and obligations you have under applicable law.

1. **nbn** does not accept any responsibility for any inaccuracies of its plans including the Indicative Plans. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g BYDA Certified Locators, at your cost to locate **nbn™** Facilities during any activities you carry out on site).
2. You acknowledge that **nbn** has specifically notified you above that the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables.
3. You should not assume that **nbn™** Facilities follow straight lines or are installed at uniformed depths

along their lengths, even if they are indicated on plans provided to you. Careful onsite investigations are essential to locate the exact position of cables.

4. In carrying out any works in the vicinity of **nbn™** Facilities, you must maintain the following minimum clearances:
   - 300mm when laying assets inline, horizontally or vertically.
   - 500mm when operating vibrating equipment, for example: jackhammers or vibrating plates.
   - 1000mm when operating mechanical excavators.
   - Adherence to clearances as directed by other asset owner's instructions and take into account any uncertainty for power cables.
5. You are aware that there are inherent risks and dangers associated with carrying out work in the vicinity of underground facilities (such as **nbn™** fibre optic,copper and coaxial cables,and power cable feed to **nbn™** assets).Damage to underground electric cables may result in:
   - Injury from electric shock or severe burns, with the possibility of death.
   - Interruption of the electricity supply to wide areas of the city.
   - Damage to your excavating plant.
   - Responsibility for the cost of repairs.
6. You must take all reasonable precautions to avoid damaging **nbn™** Facilities. These precautions may include but not limited to the following:
   - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likelihood of damage to the cable, for example: the blades of hand equipment should be aligned parallel to the line of the cable rather than digging across the cable.
   - If any undisclosed underground cables are located, notify **nbn** immediately.
   - All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
   - The safety of the public and other workers must be ensured.
   - All excavations must be undertaken in accordance with all relevant legislation and regulations.
7. You will be responsible for all damage to **nbn™** Facilities that are connected whether directly, or indirectly with work you carry out (or work that is carried out for you or on your behalf) at the Location. This will include, without limitation, all losses expenses incurred by **nbn** as a result of any such damage.
8. You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.
9. Except to the extent that liability may not be capable of lawful exclusion, **nbn** and its servants and agents and the related bodies corporate of **nbn** and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any plans(including Indicative Plans) attached hereto. Except as expressly provided to the contrary in this information sheet or the attached plans(including Indicative Plans), all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

All works undertaken shall be in accordance with all relevant legislations, acts and regulations applicable to the particular state or territory of the Location. The following table lists all relevant documents that shall be considered and adhered to.

State/Territory	Documents
National	Work Health and Safety Act 2011
	Work Health and Safety Regulations 2011
	Safe Work Australia - Working in the Vicinity of Overhead and Underground Electric Lines (Draft)

	Occupational Health and Safety Act 1991
NSW	Electricity Supply Act 1995
	Work Cover NSW - Work Near Underground Assets Guide
	Work Cover NSW - Excavation Work: Code of Practice
VIC	Electricity Safety Act 1998
	Electricity Safety (Network Asset) Regulations 1999
QLD	Electrical Safety Act 2002
	Code of Practice for Working Near Exposed Live Parts
SA	Electricity Act 1996
TAS	Tasmanian Electricity Supply Industry Act 1995
WA	Electricity Act 1945
	Electricity Regulations 1947
NT	Electricity Reform Act 2005
	Electricity Reform (Safety and Technical) Regulations 2005
ACT	Electricity Act 1971

Thank You,

nbn BYDA

Date: 22/04/2025

This document is provided for information purposes only. This document is subject to the information classification set out on this page. If no information classification has been included, this document must be treated as UNCLASSIFIED, SENSITIVE and must not be disclosed other than with the consent of nbn co. The recipient (including third parties) must make and rely on their own inquiries as to the currency, accuracy and completeness of the information contained herein and must not use this document other than with the consent of nbn co.

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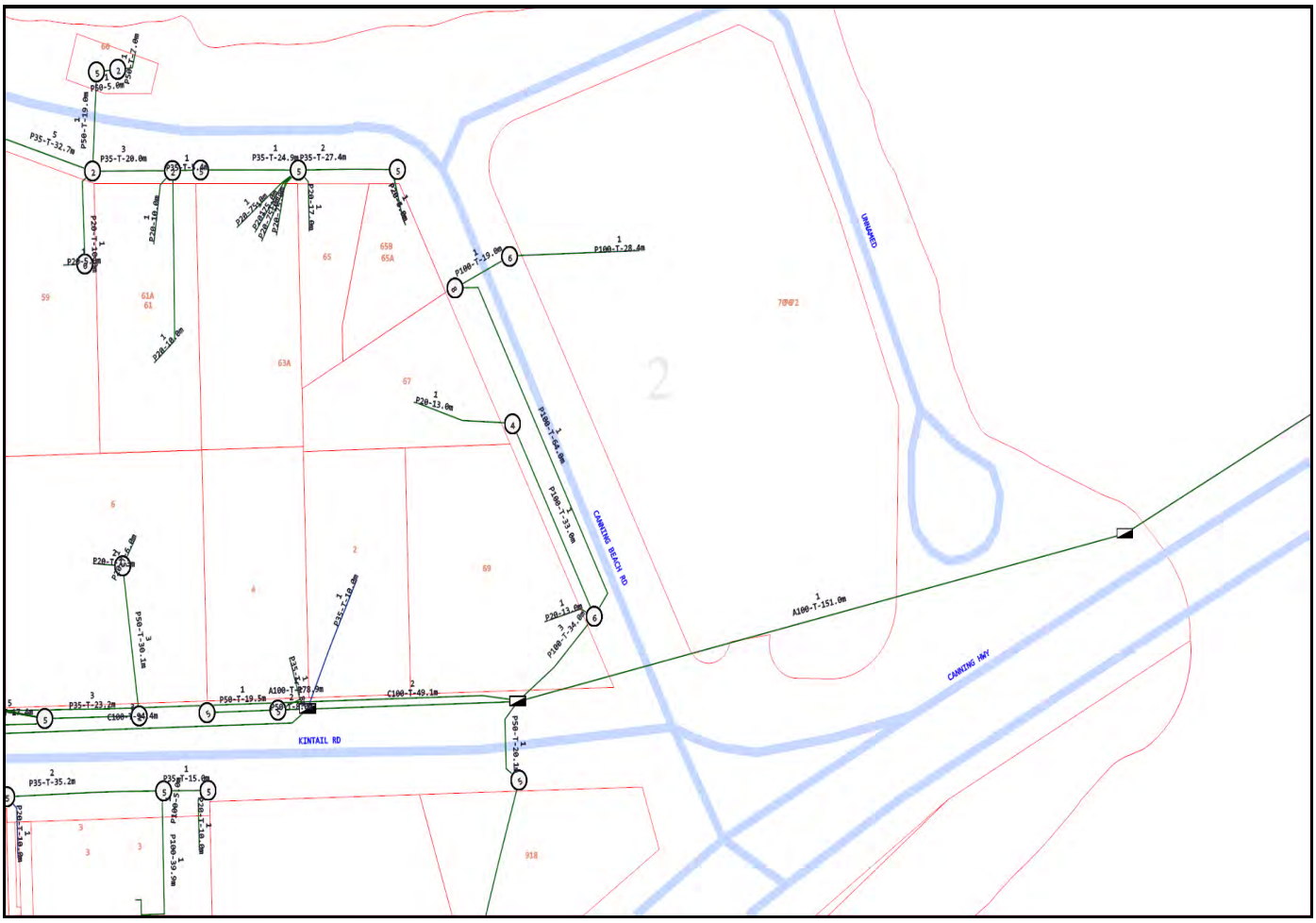
LEGEND

44	Parcel and the location
5	Pit with size "5"
2E	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
2 PO – T- 25.0m P40 – 20.0m 5 9	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
2 10.0m 5 9	2 Direct buried cables between pits of sizes ,"5" and "9" are 10.0m apart.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
5 9	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
BROADWAY ST	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m



Emergency Contacts

You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.

Nextgen (WA)

Referral
253972151

Member Phone
1800 262 663

Responses from this member

Response received Tue 22 Apr 2025 9.37am

File name	Page
Response Body	28
253972151 - Nextgen 3rd Party Duct Plan.pdf	29
253972151 - Nextgen Cable Plan.pdf	33
253972151 - Nextgen Letter.pdf	37

ATTENTION: Connor Asphar

Please DO NOT SEND A REPLY to this email as it has been automatically generated and replies are not monitored.

Thank you for your DBYD enquiry.

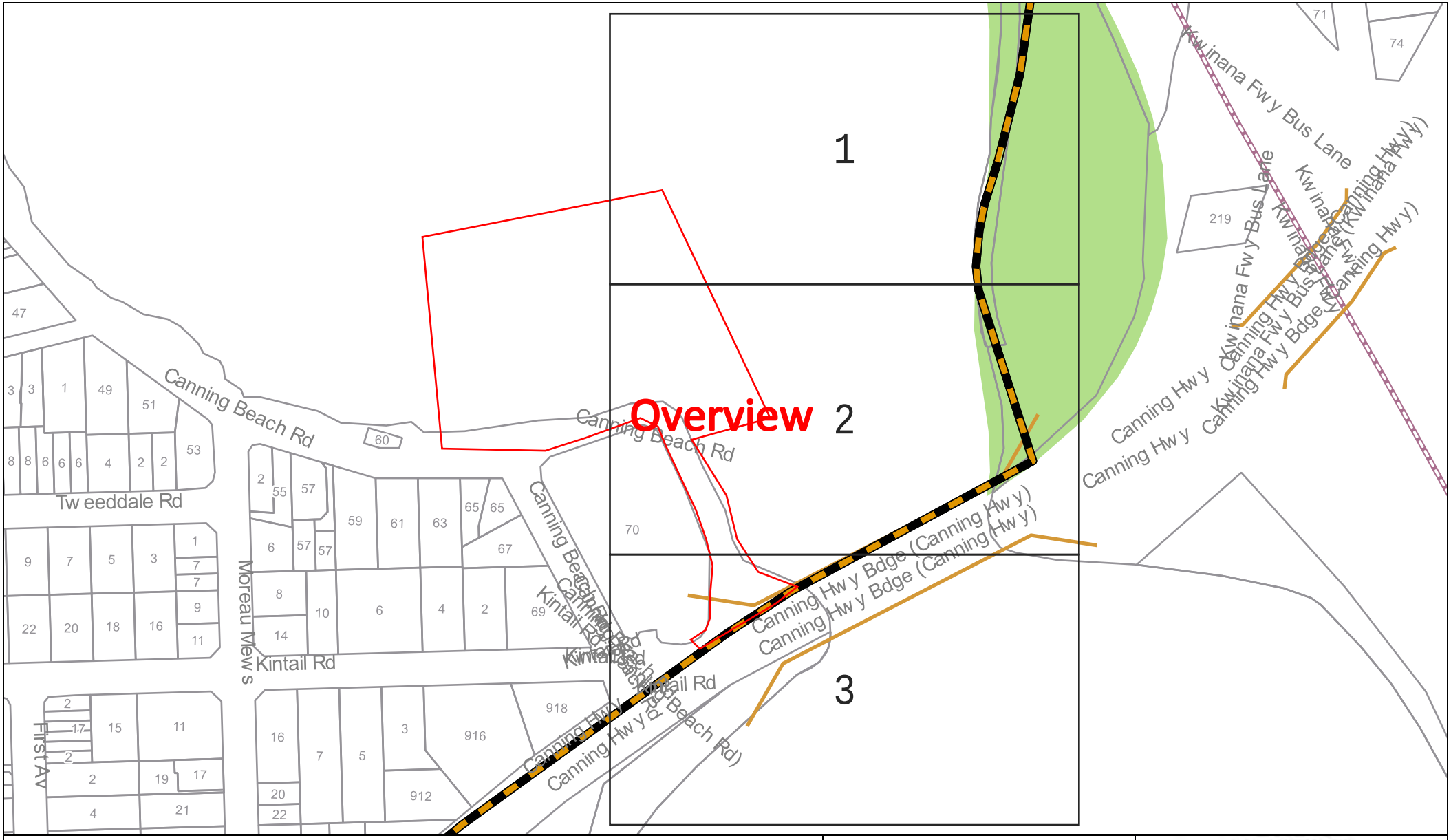
Job No: 50012474
Sequence No: 253972151
Enquiry location:
70-72 Canning Beach Road
Applecross
WA 6153

Attached are the files containing information relating to your recent DBYD request. Please read and understand all the attached documentation and contact Nextgen Networks on 1800 032 532 or dbyd@nextgengroup.com.au if you have any queries.

Note: If you have received this email in error, please advise us by calling 1800 032 532 and quote the Sequence Number listed above.

If you are unable to launch any of the files for viewing and printing, you may need to download and install free viewing and printing software such as:

Adobe Acrobat Reader (for PDF files) - http://get.adobe.com/reader



Sequence Number: 253972151

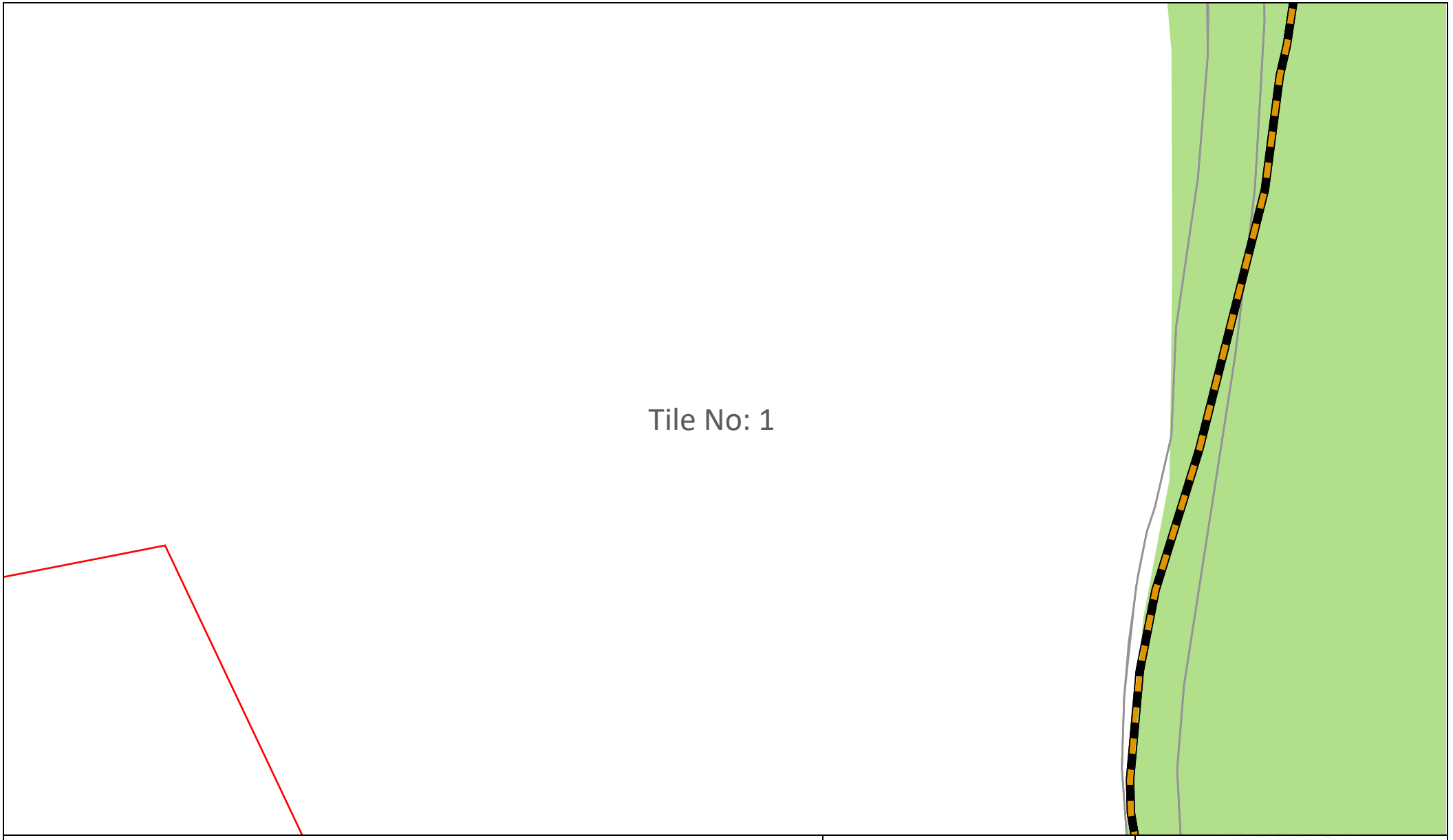
Date: 22/04/2025

DISCLAIMER: THIS DRAWING SHOULD NOT BE SCALED TO LOCATE CABLES. NO WARRANTY IS GIVEN THAT THE INFORMATION IS ACCURATE OR COMPLETE. IF YOU REQUIRE INFORMATION REGARDING LOCATING THE CABLE PLEASE CALL NEXTGEN. THIS DOCUMENT HAS BEEN PREPARED SOLELY FOR DIAL BEFORE YOU DIG USE. THIS PLAN CONTAINS COMMERCIALLY SENSITIVE INFORMATION AND IS TO BE TREATED ACCORDINGLY. NO SUCH INFORMATION IS TO BE PASSED ONTO OTHER PARTIES WITHOUT WRITTEN CONSENT FROM NEXTGEN PTY LTD.

nextgen GROUP

LEGEND

Digsite	Assets
Area	Cable
	3rd Party Duct
	Marker Post



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nextgen GROUP

LEGEND

Digsite

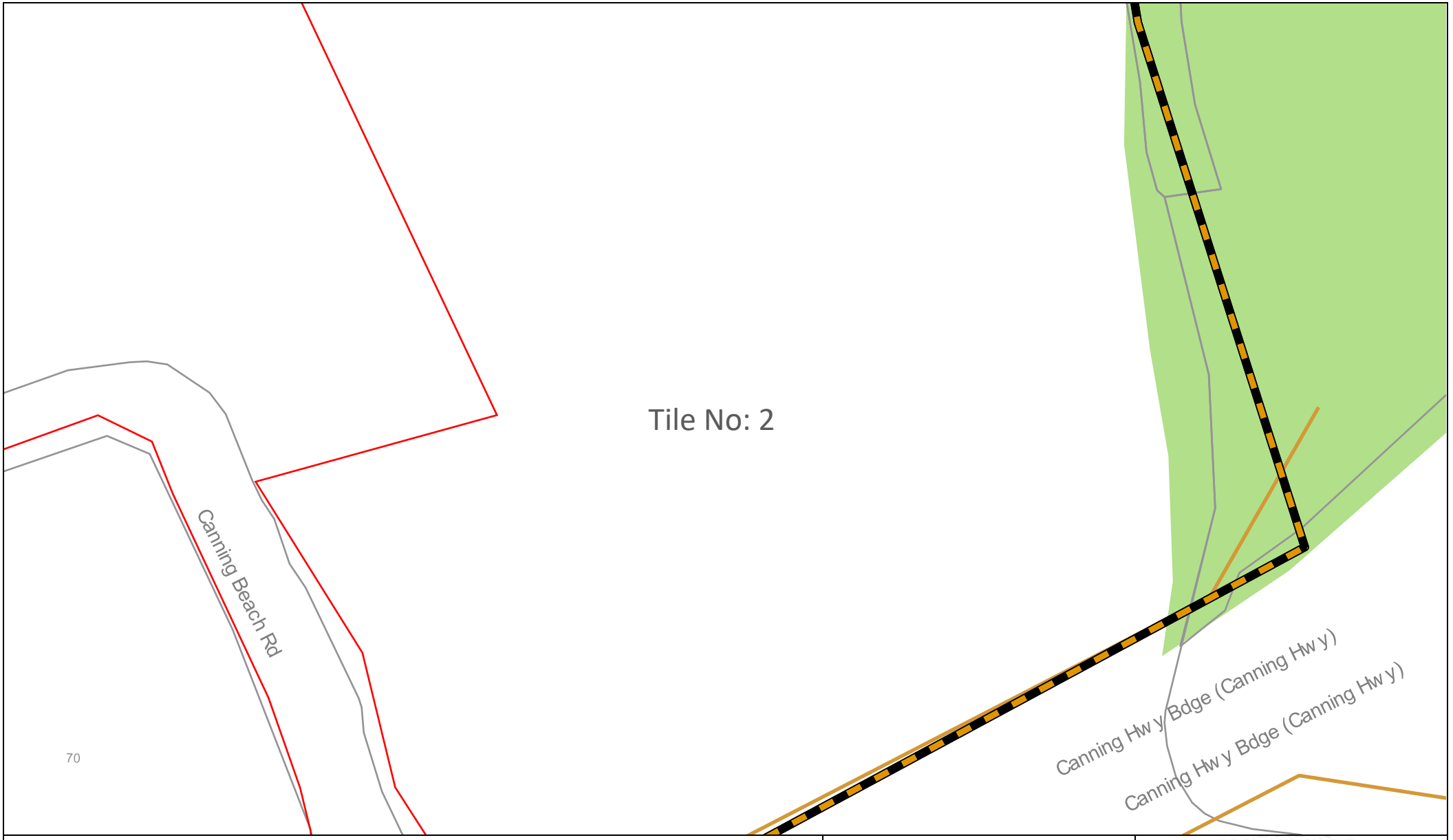
Area

Assets

Cable

3rd Party Duct

Marker Post



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nextgen GROUP

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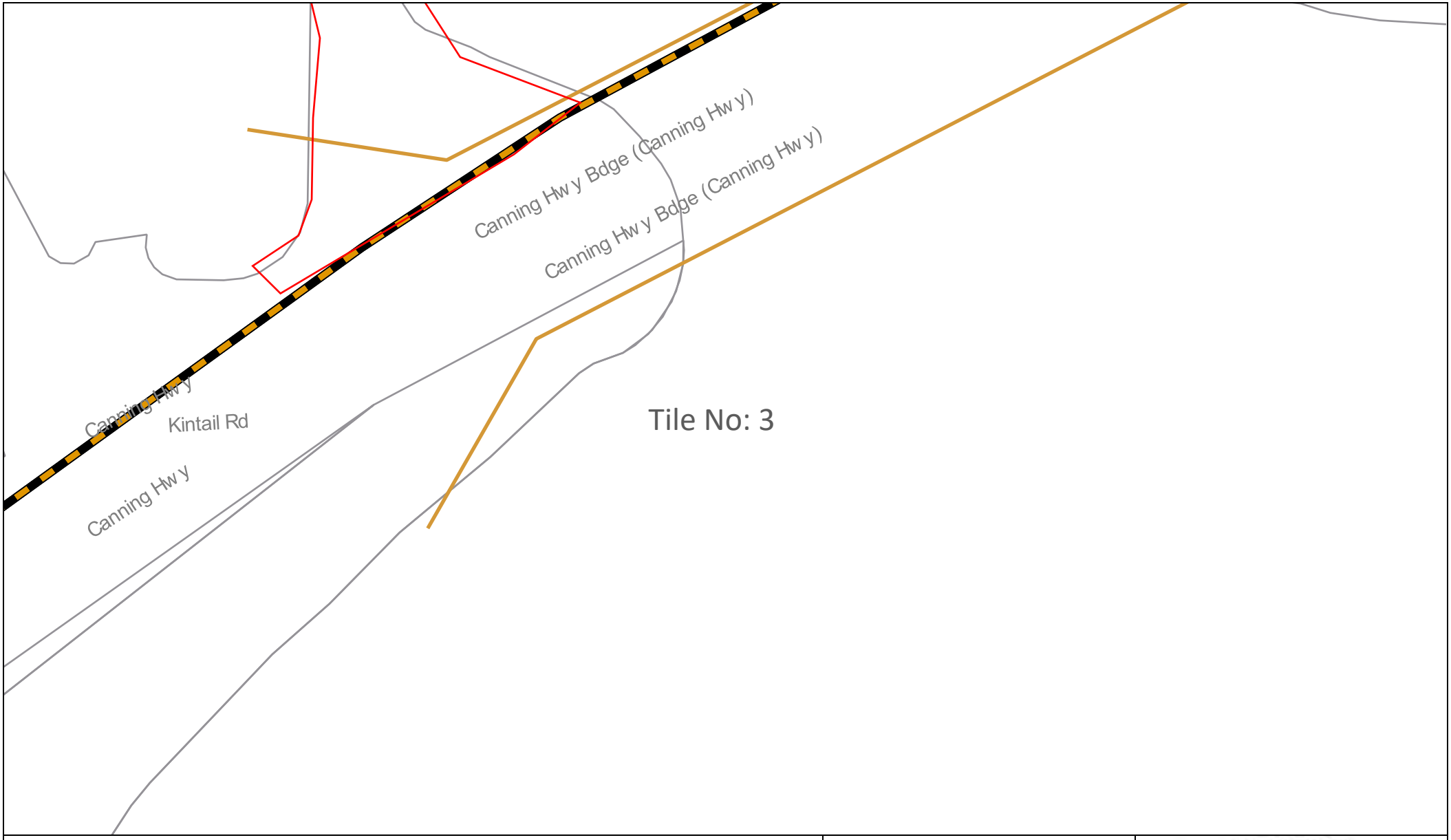

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nextgen GROUP

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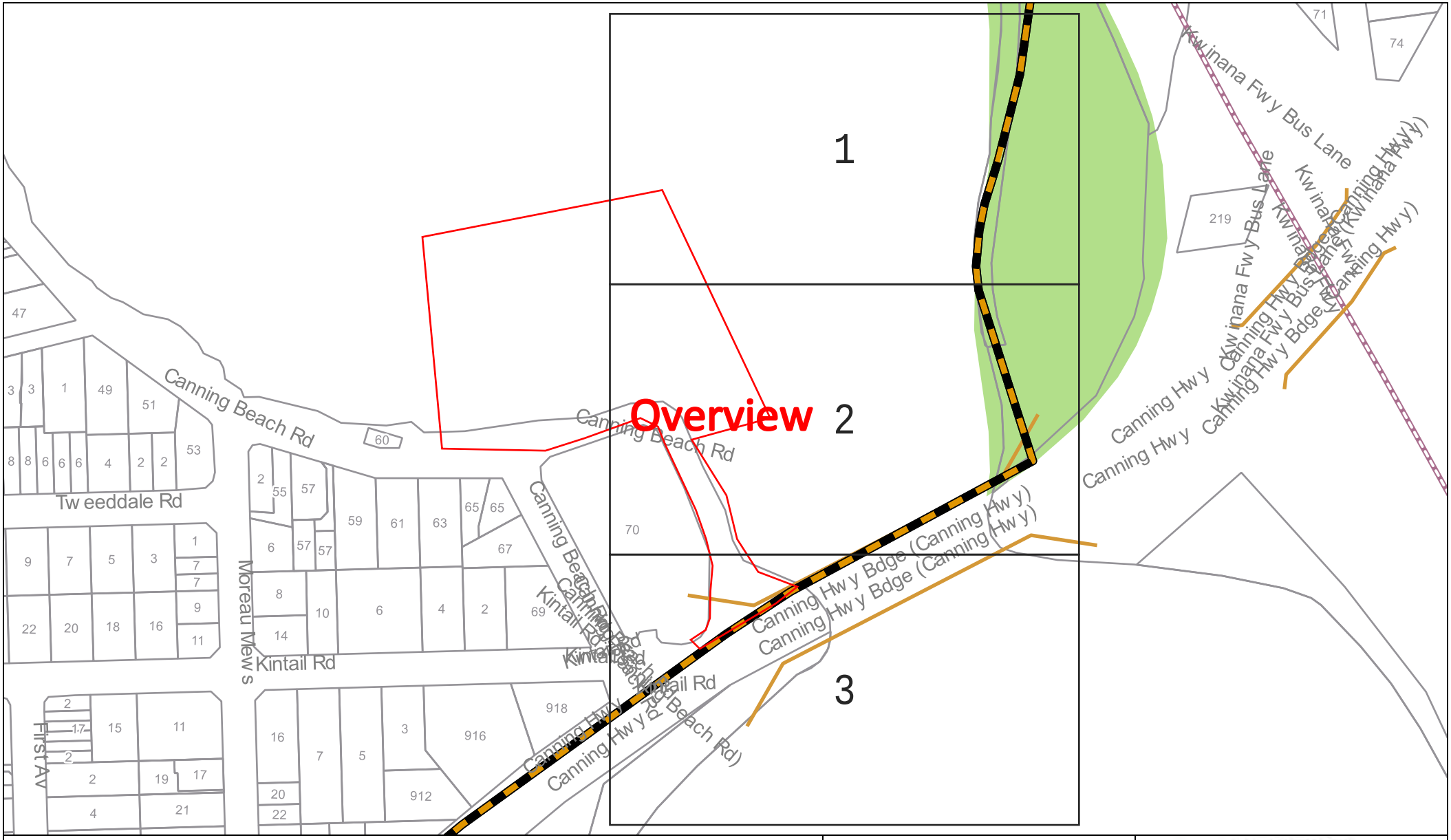

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nextgen GROUP

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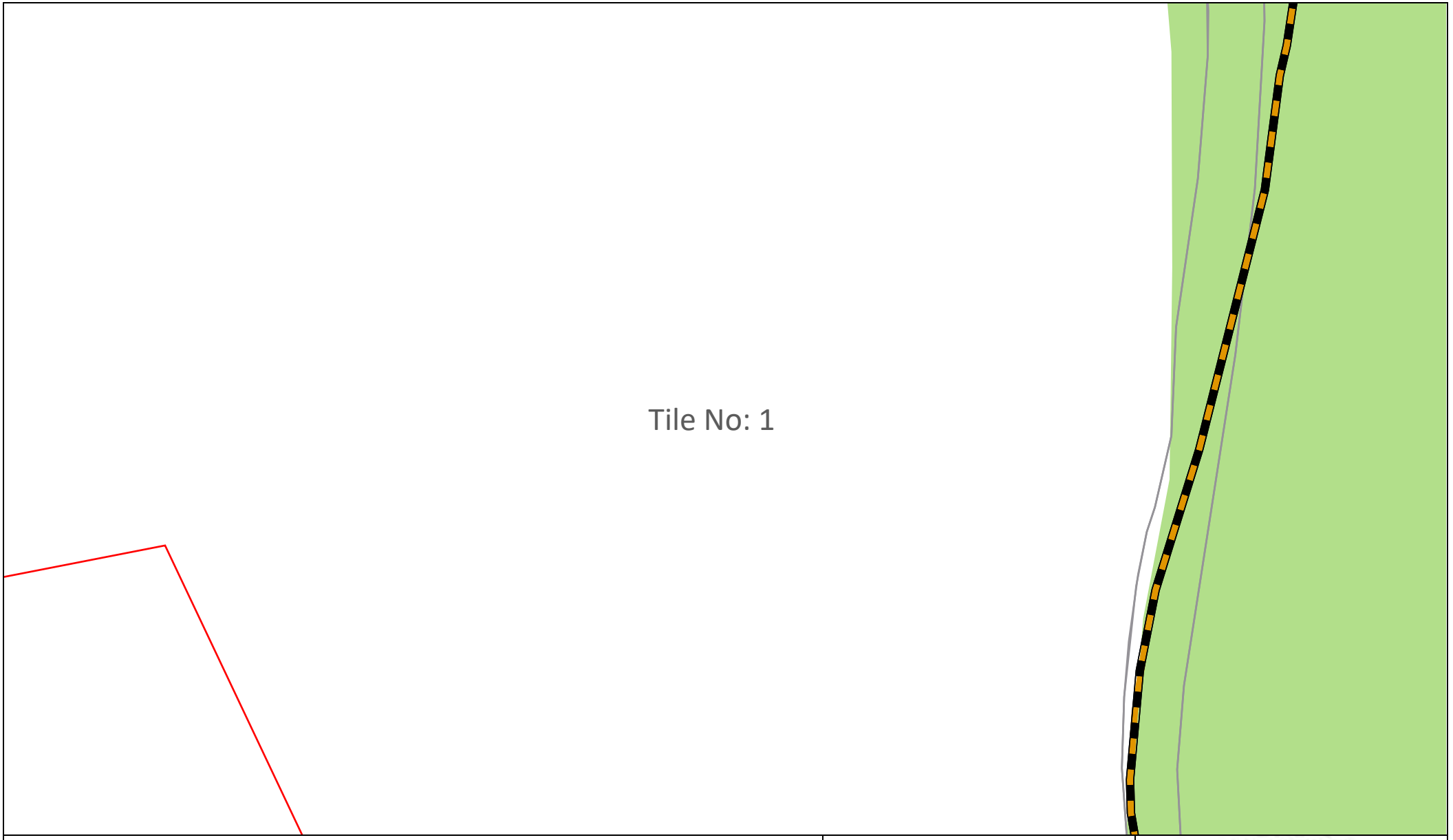

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nextgen GROUP

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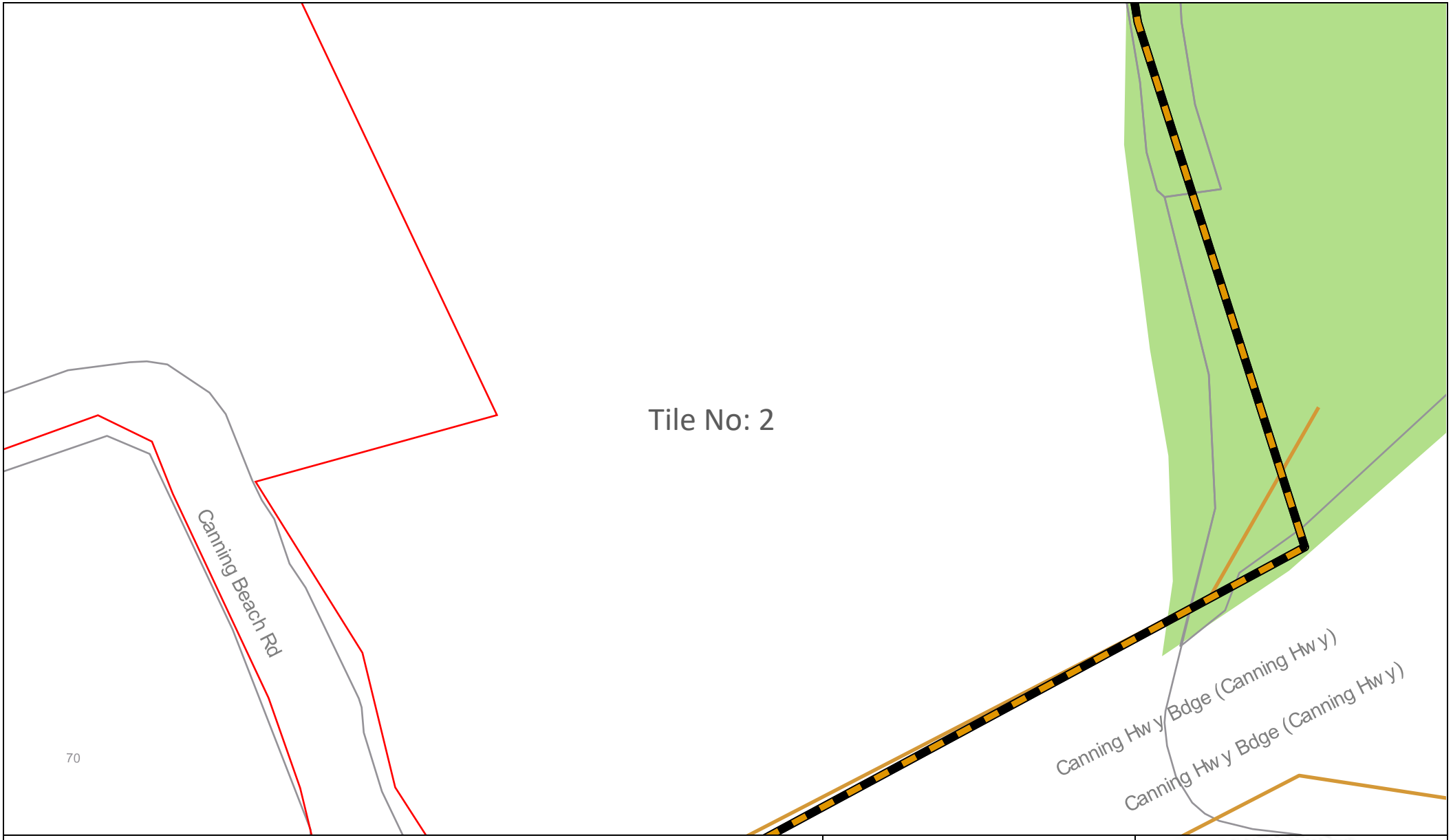

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nextgen GROUP

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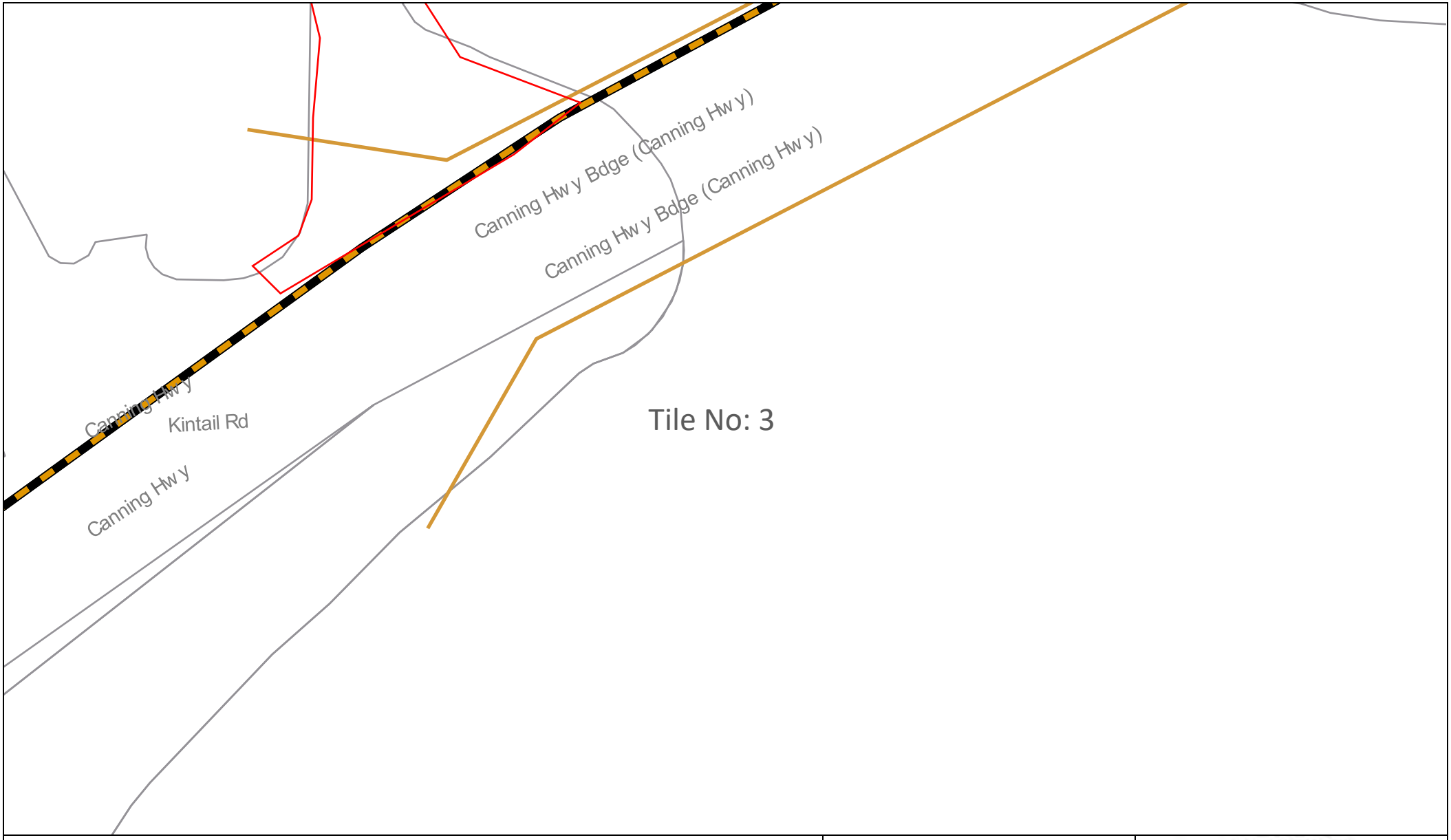

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nextgen GROUP

LEGEND

Digsite	Assets
Area	Cable
	3rd Party Duct
	Marker Post

Plant Location Details

22/04/2025

Connor Asphar
GHD
Level 10,999 Hay Street
Perth WA 6000
Phone: +61476786556

Nextgen Networks Pty Ltd
Level 6, 333 Collins Street
Melbourne VIC 3000
T 1800 032 532
E Damage.Relocations@vocus.com.au

Dear Connor Asphar

The following is a response to your Dial Before You Dig enquiry

Assets Affected: Nextgen Assets
Sequence No: 253972151
Location: 70-72 Canning Beach Road, Applecross WA 6153

IMPORTANT:

- Please read and understand all the information and disclaimers provided below
- Sketches and Plans provided by Nextgen Networks are circuit diagrams only and indicate the presence of telecommunications plant in the general vicinity of the geographical area shown; exact ground cover and alignments cannot be given with any certainty and cover may alter over time. Telecommunications plant seldom follow straight lines and careful on site investigation is essential to uncover and reveal its exact position
- The accuracy and/or completeness of the information in the plans can not be guaranteed often due to changes in the surrounding land subsequent to Nextgen's deployment and, accordingly the plans are intended to be indicative only

"DUTY OF CARE"
When working in the vicinity of telecommunications plant you have a legal "Duty of Care" that must be observed. The following points must be considered:

1. It is the responsibility of the owner and any consultant engaged by the owner, including an architect, consulting engineer, developer, and head contractor to design for minimal impact and protection of Nextgen Networks plant. Nextgen Networks will provide free plans and sketches showing the presence of its network to assist at this design stage.
2. It is the owner's (or constructor's) responsibility to:
   a) Request plans of Nextgen Networks plant for a particular location at a reasonable time before construction begins
   b) Visually locate Nextgen Networks plant by vacuum excavation (pot-holing) where construction activities may damage or interfere with Nextgen Networks plant (see "Essential Precautions and Approach Distances" section for more information)
   c) Contact Nextgen Networks Network (see below for details) if Nextgen Networks plant is wholly or partly located near planned construction activities

DAMAGE
ANY DAMAGE TO Nextgen Networks NETWORK MUST BE REPORTED TO 1800 032 532 IMMEDIATELY

- The owner is responsible for all plant damage when works commence prior to obtaining Nextgen Networks plans, or failure to follow agreed instructions
- Nextgen Networks reserves all rights to recover compensation for lose or damage to its cable network or other property including consequential losses

CONCERNING NEXTGEN NETWORK PLANS

- Phone 1100. Dial Before You Dig for free plans of Nextgen Networks plant locations. Please give at least 2 business days notice
- Nextgen Networks plans and information provided are valid for 30 days from the date of issue
- Nextgen Networks retains copyright in all plans and details provided in conjunction with your request. These plans and or details should be disposed of by shredding or any other secure disposal method after use
- Nextgen Networks plans or other details are provided for the use of the applicant, its servants, or agents, and shall not be used for any unauthorised purpose
- Please contact the Network Help Desk (see below for details) immediately should you locate Nextgen Networks assets not indicated on these plans
- Nextgen Networks, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Nextgen Networks against any claim or demand for any such loss or damage
- Please ensure Nextgen Networks plans and information provided remains on-site at all times throughout your construction phase

ESSENTIAL PRECAUTION AND APPROACH DISTANCE

NOTE: If the following clearances cannot be maintained, please contact the Nextgen Network Help Desk (see below for details) for advice on how best to resolve this situation

1. On receipt of plans and sketches and before commencing excavation work or similar activities near Nextgen Networks plant, carefully locate this plant first to avoid damage. Undertake prior exposure (vacuum excavation) such as potholing when intending to excavate or work closer to Nextgen Networks plant than the following approach distances:

- Where Nextgen Networks plant is in an area where road and footpaths are well defined by kerbs or other features a minimum clear distance of 600mm must be maintained from where it could be reasonably presumed that plant would reside
- In non established or unformed reserves and terrain, this approach distance must be at least 1.5 metres
- In country/rural areas which may have wider variations in reasonably presumed plant presence, the following minimum approach distances apply:
  d) Parallel to major plant: 10 metres (for optic fibre cable)
  e) Parallel to other plant: 5 metres

  Note: Even pot-holing needs to be undertaken with extreme care, common sense and employing techniques least likely to damage cables. For example - vacuum excavation.

- If construction work is parallel to Nextgen Networks plant, then careful pot-holing at least every 5m is required to establish the location of all plant, hence continuing nominal locations before work can commence

2. Maintain the following minimum clearance between construction activity and actual location of Nextgen Networks Plant.

Jackhammers/Pneumatic Breakers	*Not within 1.0m of actual locations*
Vibrating Plate or Wackers Packer Compactors	*Not within 0.5m of Nextgen Networks ducts 300mm compact clearance cover before compactor can be used across Nextgen Networks ducts, and 600mm clearance across Nextgen Networks cables in the solid*
Boring Equipment (in-line, horizontal and vertical)	*Not within 2.0m of actual location Constructor to check depth via vacuum excavation (pot-hole)*
Heavy Vehicle Traffic (over 3 tonnes)	*Not to be driven across Nextgen Networks ducts with less than 600mm cover. Not to be driven across Nextgen Networks fibre with less than 1.2m cover Constructor to vacuum excavate(pot-hole) and expose plant*
Mechanical Excavators, Boring and Tree Removal	*Not within 1.0m of actual location Constructor to vacuum excavate (pot-hole) and expose plant*

- All Nextgen Networks pits and manholes should be a minimum of 1.2m in from the back of kerb after the completion of your work
- All Nextgen Networks conduit should have the following minimum depth of cover after the completion of your work:

  Footway 450mm
  Roadway 450mm at drain invert and 600mm below the pavement subgrade level invert

- All Nextgen Networks fibre in the solid should have the following minimum depth of cover after the completion of your work:

  Footway 600mm
  Roadway 1200mm at drain invert and 1200mm below the pavement subgrade level invert

- For clearance distances relating to Nextgen Networks above ground infrastructure please contact the Network Help Desk (see below for details)

FURTHER ASSISTANCE

Over-the-phone assistance can be obtained by calling the Network Help Desk below.
Nextgen require 5 clear business days notice to conduct an on-site location. The initial on site location visit will not normally incur a charge, but at the discretion of Nextgen subsequent site visits may incur a charge to be applied at an hourly rate.
Where an on-site location is provided, the owner is responsible for all vacuum excavation work (pot-holing) to visually locate and expose Nextgen Networks plant.
If plant location plans or visual location of Nextgen Networks plant by vacuum excavation reveals that the location of Nextgen Networks plan is situated wholly or partly where the owner plans to work, then Nextgen Networks must be contacted through the Network Help Desk to discuss possible engineering solutions.
The contact number for the Network Help Desk is 1800 032 532.

NOTE:
If Nextgen Networks relocation or protection works are part of the agreed solution, then payment to Nextgen Networks for the cost of this work shall be the responsibility of the principal developer. The principal developer will be required to provide Nextgen Networks with the details of their proposed work showing how Nextgen Networks plant is to be accommodated and these details must be approved by the Nextgen National Operations Manager prior to the commencement of site works.

RURAL LANDOWNER - IMPORTANT INFORMATION

Where Nextgen Networks owned cable crosses agricultural land Nextgen Networks will provide a one off free-on-site electronic cable location. Please note that the exact location of cables can only be verified by visual proving by pot holing, which is not covered by this service. The Network Integrity HelpDesk Officer will provide assistance in determining whether a free-on-site location is required. Please ring the Nextgen Network Help Desk as listed above.

PRIVACY NOTE

Your information has been provided to Nextgen Networks by DBYD to enable Nextgen Networks to respond to your DBYD request. Nextgen Networks keeps your information in accordance with its privacy statement entitled 'Protecting Your Privacy' which can be obtained from Nextgen Networks either by calling 1800 032 532 or visiting our website www.nextgengroup.com.au

Warning: Nextgen Networks plans show only the presence of cables and plant. They only show their position relative to road boundaries, property fences etc, at the time of installation and Nextgen Networks does not warrant or hold out that such plans are accurate thereafter due to changes that may occur over time.
DO NOT ASSUME DEPTH OR ALIGNMENT of cables or plant as these vary significantly.
The customer has A DUTY OF CARE when excavating near Nextgen Networks cables and plant. Before using machine excavators NEXTGEN PLANT MUST FIRST BE PHYSICALLY EXPOSED BY VACUUM EXCAVATION (potholing) to identify its location.
Nextgen Networks will seek compensation for damages caused to its property and losses caused to Nextgen Networks and its customers.

EXPERIENCED PLANT LOCATORS (for your area)

On-site assistance should be sought from an Experienced Plant Locater if the telecommunications plant cannot be located within 2.5 metres of the locations indicated on the drawings provided. On-site advice should be obtained from a suitably qualified contractor highly skilled in locating Nextgen Networks plant. If there is any doubt whatsoever about the actual location of the telecommunications plant, the best method for locating the telecommunications plant or the correct interpretation of the drawings provided. In the case where Nextgen Networks plant is outside a recognised road reserve Nextgen Networks recommends that the Network Help Desk is contacted for assistance prior to engaging an Experienced Plant Locater.

For the assistance of customers Nextgen Networks has established strict criteria to assess the skill of contractors that may be engaged by owners requiring Nextgen Networks plant locating services to perform any of the following activities if requested to do so by the owner:

- Review Nextgen Networks plans to assess the approximate location of Nextgen Networks plant
- Advise owners of the approximate location of Nextgen Networks plant according to the plans
- Advise the owners of the best method for locating Nextgen Networks plant
- Advise owners of the hazard of unqualified persons attempting to find the exact location of Nextgen Networks plant and working in the vicinity of Nextgen Networks plant without first locating its exact position
- Perform trial hole explorations by vacuum excavation (pot-holing) to expose Nextgen Networks plant with a high degree of skill, competence and efficiency and utilising all necessary safety equipment

Nextgen Networks does not accept any liability or responsibility for the performance of or advice given by any Plant Locater engaged by you but we will, if requested, recommend suitably qualified plant locators.

GENERAL DISCLAIMER

While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Nexgen or PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

Optus (WA)

Referral
253972150

Member Phone
1800 505 777

Responses from this member

Response received Tue 22 Apr 2025 9.39am

File name	Page
Response Body	42
253972150 - Optus Response Letter.pdf	43
253972150 - Optus Plan.pdf	54

Optus - Before You Dig Australia - REFERRAL NOTIFICATION

This referral has been successfully processed by Optus and the results are contained in the attached files.

Notice: Please DO NOT REPLY TO THIS EMAIL as it has been automatically generated and replies are not monitored.

If you have any queries or attachments missing please contact:
Network Operations Centre
1 Lyonpark Road,
Macquarie Park, NSW 2113
Ph: 1800 505 777
Fax: 1300 307 035

You will require Adobe Reader to view attachments.
http://www.adobe.com/downloads/

We thank you for your enquiry and appreciate your continued use of the “Before You Dig Australia Service” Asset Analysis Service. If you require further information in relation to Optus and/or Uemcomm cables please contact Optus on above.

This reply relates only to the location indicated above and is valid for 30 days from the sent date. Where additional works are planned that have not been specified within this reply, Optus require that an additional enquiry be submitted to Before You Dig Australia enquiry Service: http://www.byda.com.au

In the case of no additional location request being submitted, Optus will hold the relevant party responsible for any damage to Optus and/or Uecomm plant and all expenses incurred by Optus as a result of asset damage.

This e-mail may contain confidential information. If you are not the intended recipient, please notify Network Operations Centre immediately and delete this e-mail from your system. You must not disclose this e-mail to anyone without express permission from the sender. The contents of all e-mails sent to and received from Optus may be scanned, stored, or disclosed to others at Optus’ discretion.

OPTUS

BEFORE YOU DIG www.byda.com.au

Optus Contract Management Team
Unit 9, 677 Springvale Road
Mulgrave, Victoria, 3178

Date: 22 Apr 2025
To: Connor Asphar
Company: GHD
Address: Level 10,999 Hay Street
Perth, WA 6000

ENQUIRY DETAILS
Location: 70-72 Canning Beach Road, Applecross, WA 6153
Sequence No.: 253972150
BYDA Reference: 50012474

In relation to your enquiry concerning the above location, Optus advises as follows:

Optus records indicate that there ARE underground Optus FIBRE OPTIC TELECOMMUNICATIONS ASSETS in the vicinity of the above location as per the attached drawing(s).

PLEASE NOTE that any interference with these assets may be considered an offence under the Criminal Code Act 1995 (Cth). Optus reserves the right to seek compensation for loss or damage to its assets including consequential loss.

This reply is valid for a period of 30 days from the date above.

IMPORTANT INFORMATION
Asset location drawings provided by Optus are reference diagrams and are provided as a guide only. The completeness of the information in these drawings cannot be guaranteed. Exact ground cover and alignments cannot be provided with any certainty as these may have altered over time. Depths of telecommunications assets vary considerably as do alignments. It is essential to identify the location of any Optus assets in the vicinity prior to engaging in any works.

All Optus assets in the vicinity of any planned works will need to be electronically located to ascertain their general location. Depending on the scope of planned works in the vicinity, the assets may also need to be physically located.

YOU MUST ENGAGE THE SERVICES OF ONE OF THE OPTUS ASSET ACCREDITED LOCATORS TO CARRY OUT ASSET LOCATION (REFER LIST OF ACCREDITED LOCATORS AT THE END OF THIS OPTUS RESPONSE).

Unless otherwise agreed with Optus, where an on-site asset location is required, the requestor is responsible for all costs associated with the locating service including (where required) physically exposing the Optus asset.

DUTY OF CARE
When working in the vicinity of telecommunications assets you have a legal "Duty of Care" and non-interference that must be observed.

It is your responsibility as the requesting party (as a landowner or any other party involved in the planned works) to design for minimal impact to any existing Optus asset. Optus can assist at the design stage through consultation.

It is also your, as the requesting party (or your representative's), responsibility to:

a) Obtain location drawings (through the Before You Dig Australia process) of any existing Optus assets at a reasonable time before any planned works begin;

b) Have an Optus Accredited Asset Locator identify the general location of the Optus asset and physically locate the asset where planned works may encroach on its alignment; and

c) Contact Optus for further advice where requested to do so by this letter.

DAMAGE TO ANY OPTUS ASSET MUST BE REPORTED TO 1800 505 777 IMMEDIATELY

You, your head contractor, and any relevant subcontractor are all responsible for any Optus asset damage as a result of planned activities in the vicinity of Optus assets.

This applies where works commence prior to obtaining Optus drawings, where there is failure to follow instructions or during any construction activities.

Optus reserves the right to recover compensation for loss or damage to its assets including consequential loss. Also, you, your head contractor and any relevant subcontractor may also be liable for prosecution under the Criminal Code Act 1995 (Cth).

ASSET RELOCATIONS

You are not permitted by law to relocate, alter or interfere with any Optus asset under any circumstance. Any unauthorised interference with an Optus asset may lead to prosecution under the Criminal Code Act 1995 (Cth). Enquiries relating to the relocation of Optus assets must be referred to the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

APPROACH DISTANCES

On receipt of Optus asset location drawings and prior to commencing any planned works near an Optus asset, engage an Optus Accredited Locator to undertake a general location of the Optus asset.

Physical location of the Optus asset by an Optus Accredited Locator will also be required where planned works are within the following approach distances of the general location of the Optus asset:

a) In built up metropolitan areas where road and footpaths are well defined by kerbs or other features a minimum clear distance of 1 meter must be maintained from the general location of the Optus asset.

b) In non-established or unformed metropolitan areas, a minimum clear distance of 3 meters must be maintained from the general location of the Optus asset.

c) In country or rural areas where wider variations may exist between the general and actual location of an Optus asset may exist, then a minimum clear distance of 5 meters must be maintained from the general location of the Optus asset.

If planned works are parallel to the Optus asset, then the Optus asset must be physically located by an Optus Accredited Locator at a minimum of 5 meter intervals along the length of the parallel works prior to work commencing.

Under no circumstances is crossing of any Optus asset permitted without physical location of the asset being carried out by an Optus Accredited Locator. Depending on the asset involved an Optus representative may be required onsite.

The minimum clearances to the physical location of Optus assets for the following specific types of works must be maintained at all times.

Note: Where the clearances in the following table cannot be maintained or where the type of work differs from those listed then advice must be sought from the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

Type of Works	**Clearance to Physical Location of Optus Asset**
Jackhammers / Pneumatic Breakers	Not within 1 meter.
Light duty Vibrating Plate or Wacker Packer type compactors (not heavy road construction vibrating rollers etc.)	500mm compact clearance cover before a light duty compactor can be used over any Optus conduit. No compaction permitted over Optus direct buried cable without prior approval from Optus.
Boring Equipment (in-line, horizontal and vertical)	Not within 5 meters parallel of the Optus asset location without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite. Not to cross the Optus asset without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite.

Type of Works	Clearance to Physical Location of Optus Asset
Heavy vehicle Traffic (over 3 tonnes)	Not to be driven across Optus conduits with less than 600mm of cover. Not to be driven across Optus direct buried cable with less than 1.2 meters of cover. Once off crossings permitted, multiple crossing (e.g. road construction or logging) will require Optus approval. Accredited Optus Asset Locator to physically expose the Optus asset to verify actual depth.
Mechanical Excavators, Farm Ploughing, Vertical Hole installation for water bore or fencing etc.	Not within 1 meter. Accredited Optus Asset Locator to physically expose the Optus asset to verify actual location.

ASSET CLEARANCES AFTER COMPLETION OF WORKS

All Optus pits and manholes must be a minimum of 1 meter from the back of any kerb, 3.5 meters of the road surface without a kerb or not within 15 meters of street intersection.

In urban areas Optus conduit must have the following minimum depth of cover:

- Footway 600mm;
- Roadway 1 meter at drain invert and at road centre crown.

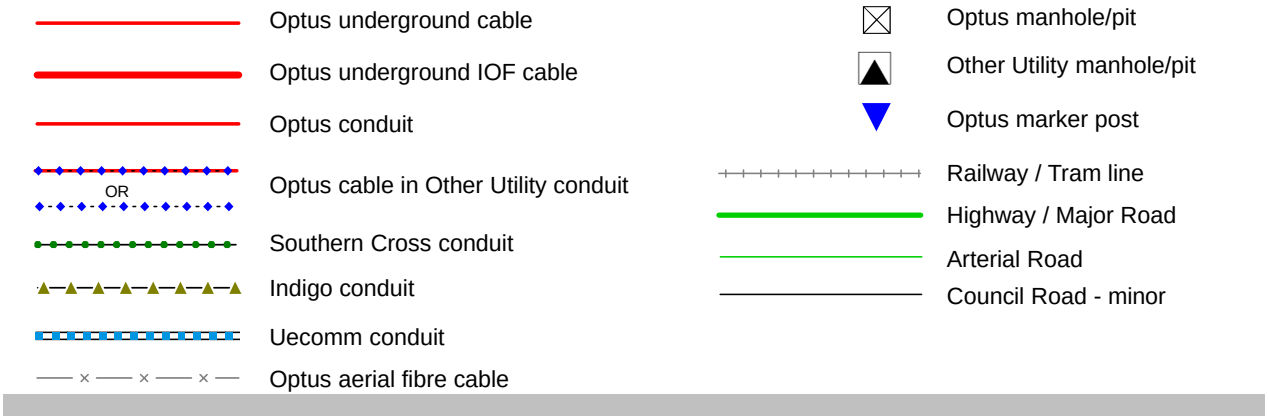
In rural areas Optus conduit must have a minimum depth of cover of 1 meter and direct buried cable 1.2 meters.

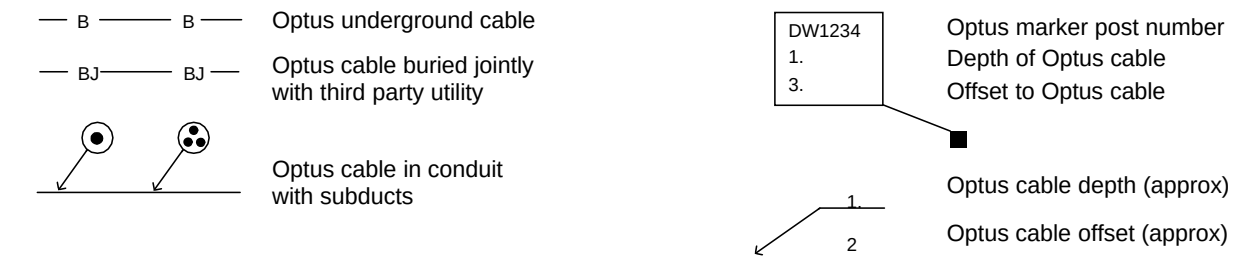
In cases where it is considered that the above clearances cannot be maintained at the completion of works, advice must be sought from the relevant Optus Damages and Relocations Team (refer "Further Assistance").

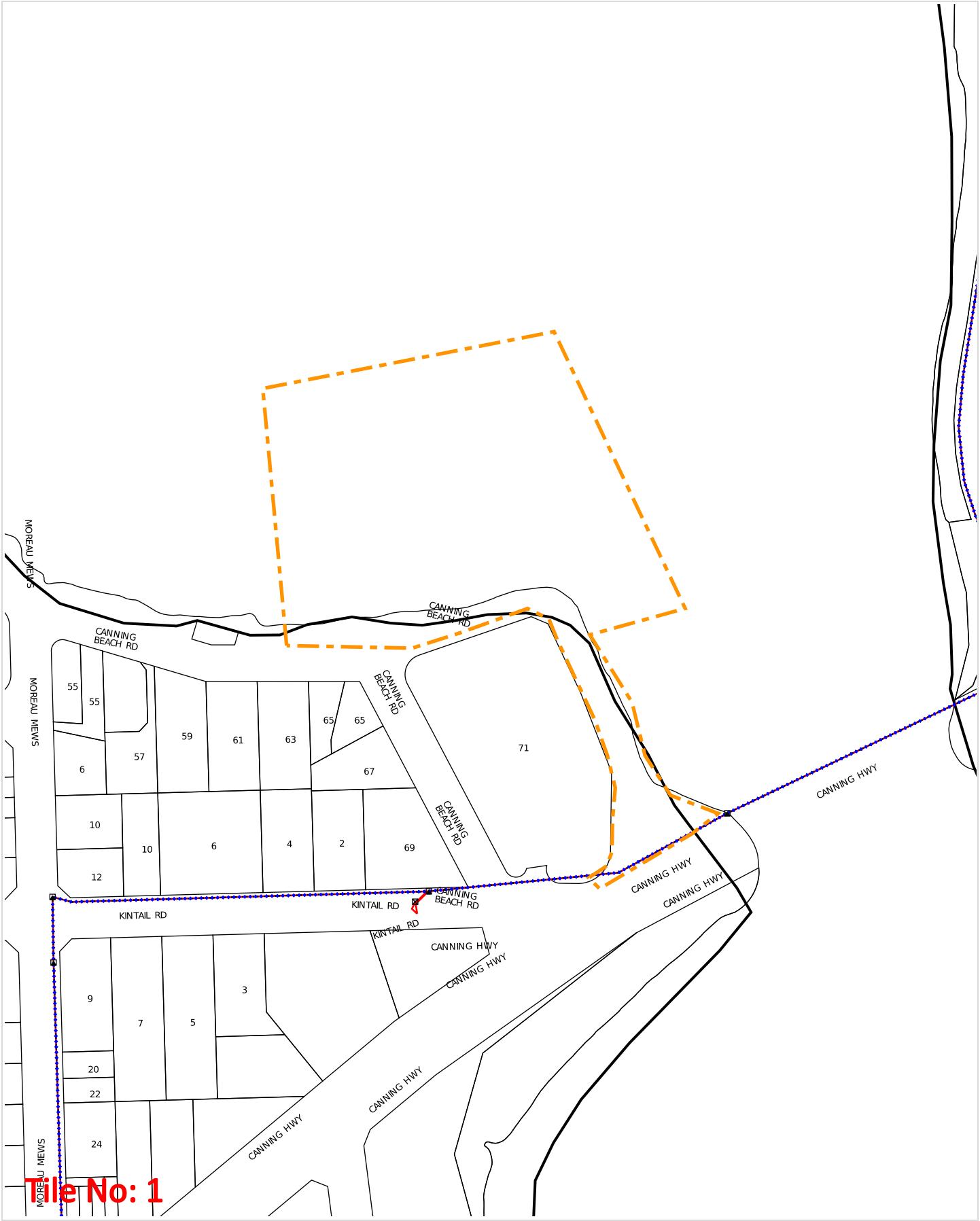
FURTHER ASSISTANCE

Further assistance on asset clearances, protection works, or relocation requirements can be obtained by contacting the relevant Optus Damages and Relocations Team on the following email address:
NFODamages&RelocationsDropbox@optus.com.au
Further assistance relating to asset location drawings etc. can be obtained by contacting the Optus Network Operations Asset Analysis Team on 1800 505 777.

OPTUS ENGINEERING DRAWING SYMBOLS







WARNING: This document is confidential and may also be privileged. Confidentiality nor privilege is not waived or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohibited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsibility is assumed for any error or omission. Optus Plans and information supplied are valid for 30 days from the date of issue. If this timeline has elapsed, please raise a new enquiry.

Sequence Number: 253972150

Date Generated: 22 Apr 2025

For all Optus DBYD plan enquiries –
Email: Fibre.Locations@optus.net.au
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208

Telstra (WA)

Referral
253972154

Member Phone
1800 653 935

Responses from this member

Response received Tue 22 Apr 2025 9.41am

File name	Page
Response Body	56
Telstra Duty of Care v32.0c.pdf	58
253972154.pdf	60
AccreditedPlantLocators 2025-01-08a.pdf	62
Telstra Map Legend 4.0b.pdf	63

Attention: Connor Asphar

Site Location: 70-72 Canning Beach Road, Applecross, WA 6153

Your Job Reference: PTA Ferry PSI Applecross Site Rev A

Please do not reply to this email, this is an automated message -

Thank you for requesting Telstra information via Before You Dig Australia (BYDA).

This response contains Telstra information relating to your recent BYDA request.

Please refer to all enclosed attachments for more information.
Information for opening Telstra Asset Plans as well as some other useful contact information is noted in the attached documents.

Report Damage to Telstra Equipment: Report damages to Telstra equipment - Telstra

Please note:
When working in the vicinity of telecommunications plant you have a 'Duty of Care' that must be observed.
Ensure you read all documents (attached) - they contain important information.
Please also refer to the **Before you Dig Australia - BEST PRACTISE GUIDES and The five Ps of safe excavation** https://www.byda.com.au/before-you-dig/best-practice-guides/, The essential steps that must be undertaken prior to commencing construction activities.

WARNING - MAJOR CABLES and/or OPTIC FIBRE IN THE AREA.
Phone 1800 653 935 for further assistance.

Note: In some areas Telstra fibre routes may be marked as "Amcom", as Telstra has purchased much of this infrastructure. If in doubt, please contact Telstra Plan services on the number above. Telstra plans and information are only valid for 60 days from the date of issue.

WARNING:
Telstra plans and location information conform to Quality Level 'D' of the Australian Standard AS 5488 - Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing them. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy. Further on site investigation is required to validate the exact location of Telstra assets prior to commencing work. A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the assets are protected during construction works. See the **Before You Dig Australia - BEST PRACTISE GUIDES and The five Ps of safe excavation** https://www.byda.com.au/before-you-dig/best-practice-guides/.

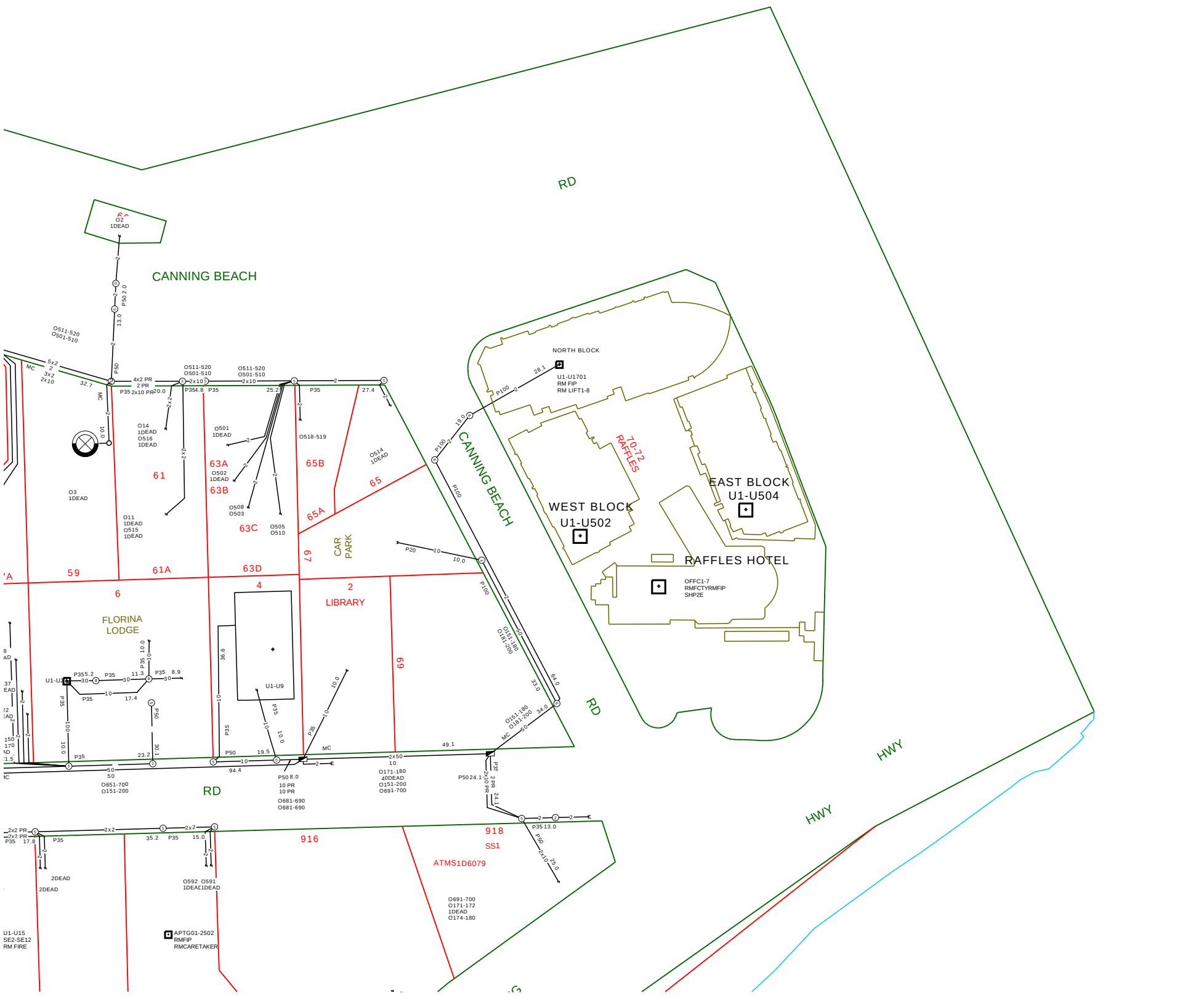
Please note that:
- it is a criminal offence under the *Criminal Code Act* 1995 (Cth) to tamper or interfere with telecommunications infrastructure.
- Telstra will take action to recover compensation for damage caused to property and assets, and for interference with the operation of Telstra's networks and customers' services.

Telstra's plans contain Telstra's confidential information and are provided on the basis that they are used solely for identifying the location or vicinity of Telstra's infrastructure to avoid damage to this infrastructure occurring as part of any digging or other excavation activity. You must not use Telstra's plans for any other purpose or in a way that will cause Telstra loss or damage and you must comply with any other terms of access to the data that have been provided to you by Telstra (including Conditions of Use or Access).

(See attached file: Telstra Duty of Care v32.0c.pdf)

(See attached file: Telstra Map Legend 4.0b.pdf)

Cable Plan



Report Damage:https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-(
Ph - 13 22 03
Email - Telstra.Plans@team.telstra.com
Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries

TELSTRA LIMITED A.C.N. 086 174 781

Generated On 22/04/2025 11:39:14

Sequence Number: 253972154

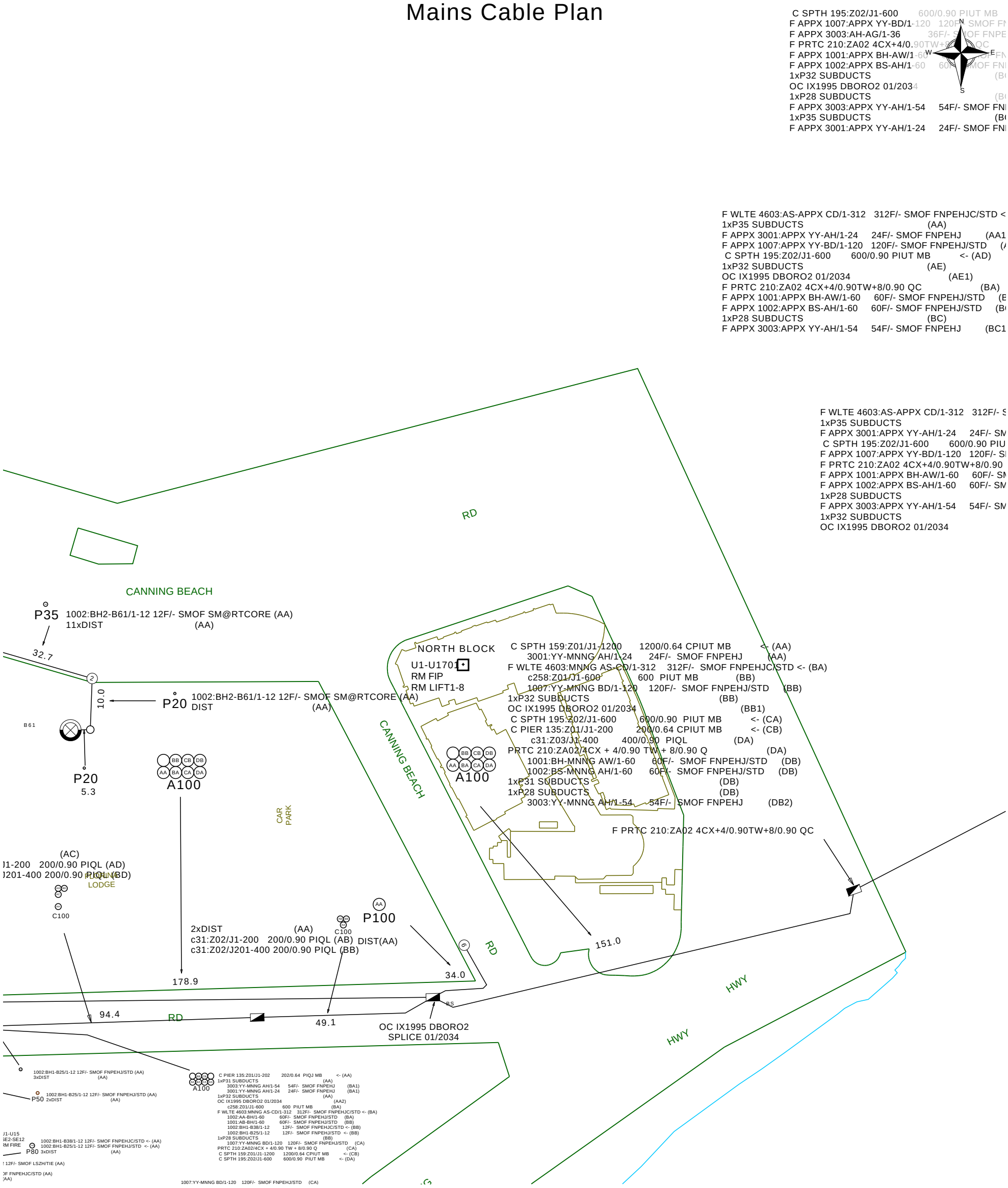
CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

WARNING
Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information.
As such,Telstra supplied location information is indicative only.Spatial accuracy is not applicable to Quality Level D.
Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it.
Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy.
Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work.
A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

See the Steps- Telstra Duty of Care that was provided in the email response.

Mains Cable Plan



Report Damage:https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-
Ph - 13 22 03
Email - Telstra.Plans@team.telstra.com
Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries

Sequence Number: 253972154

TELSTRA LIMITED A.C.N. 086 174 781

Generated On 22/04/2025 11:39:17

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

WARNING
Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information.
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A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

See the Steps- Telstra Duty of Care that was provided in the email response.

General Information

Before you Dig Australia – BEST PRACTISE GUIDES

The five Ps of safe excavation
https://www.byda.com.au/before-you-dig/best-practice-guides/

OPENING ELECTRONIC MAP ATTACHMENTS –

Telstra Cable Plans are generated automatically in either PDF or DWF file types.
Dependent on the site address and the size of area selected.
You may need to download and install free viewing software from the internet e.g.

DWF Map Files (all sizes over A3)
Autodesk Viewer (Internet Browser) https://viewer.autodesk.com/ or
Autodesk Design Review http://usa.autodesk.com/design-review/ for DWF files. (Windows PC)

PDF Map Files (max size A3)
Adobe Acrobat Reader http://get.adobe.com/reader/

Telstra BYDA map related enquiries email Telstra.Plans@team.telstra.com
1800 653 935 (AEST Business Hours only)

REPORT ANY DAMAGE TO THE TELSTRA NETWORK IMMEDIATELY
Report online - https://www.telstra.com.au/forms/report-damage-to-telstra-equipment
Ph: 13 22 03
If you receive a message asking for a phone or account number say:
"I don't have one" then say "Report Damage" then press 1 to speak to an operator.

Telstra New Connections / Disconnections
13 22 00

Telstra asset relocation enquiries: 1800 810 443 (AEST business hours only).
NetworkIntegrity@team.telstra.com
https://www.telstra.com.au/consumer-advice/digging-construction

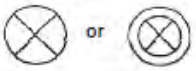
Telstra Aerial Assets Group (overhead network)
1800 047 909

CERTLOC Certified Locating Organisation (CLO)
certloc.com.au/locators/
Only Telstra authorised personnel and CERTLOC Locators can access Telstra's Pit and Pipe Network.

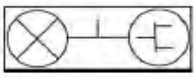
LEGEND

Exchange
(Major Cable Present)

Footway Access Chamber
(can vary from 1-lid to 12-lid)



Pillar / Cabinet
(above ground / free standing)



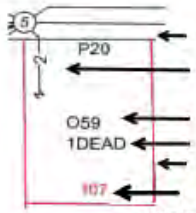
Above ground complex equipment housing (eg RIM)
Please Note: This equipment is powered by 240V Electricity

OC — Other Carrier Telecommunications Cable/Asset

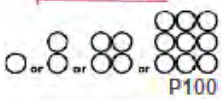
Dist — Distribution cables in Main Cable ducts

MC — Main Cable ducts on a Distribution plan

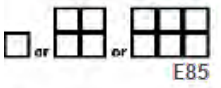
▲ — Blocked or damaged duct.



Roadside / Front Boundary
2 pair lead-in to property from pit in street 1
pair working (pair ID 059)
1 pair dead (i.e. spare, not connected)
Side / Rear Property Boundary
Property Number



Single to multiple round conduit
Configurations 1,2,4,9 respectively
(attached text denotes conduit type and size)



Multiple square conduit
Configurations 2, 4, 6 respectively
(attached text denotes conduit type and size)

Cable Jointing Pit
(number / Letter indicating Pit Type)

Elevated Joint
(above ground joint on buried cable)

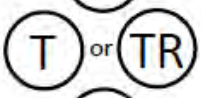
Telstra Plant in shared Utility trench

Aerial Cable

Aerial Cable
(attached to joint Use Pole eg. Power)

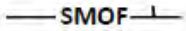
Direct Buried Cable

Marker Post Installed



Buried Transponder

Marker Post, Transponder

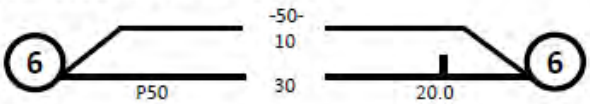


Optical Fibre cable direct buried

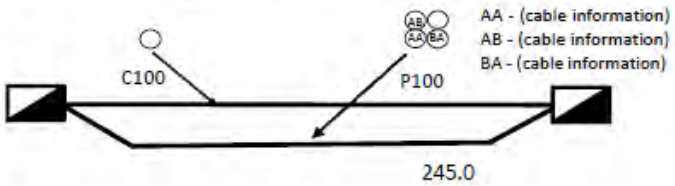
Some examples of conduit type and size:

A - Asbestos cement, P - PVC / Plastic, C - Concrete,
GI - Galanised iron, E - Earthenware
Conduit sizes *nominally* range from 20mm to 100mm
P50 50mm PVC conduit
P100 100mm PVC conduit
A100 100mm asbestos cement conduit

Some Examples of how to read Telstra Plans



One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits. approximately 20.0m apart, with a direct buried 30-pair cable along the same route



Two separate conduit runs between two footway access chambers (manholes) approximately 245m apart A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100) along

Protect our Network:

by maintaining the following distances from our assets:

- 1.0m Mechanical Excavators, Farm Ploughing, Tree Removal
- 500mmVibrating Plate or Wacker Packer Compactor
- 600mm Heavy Vehicle Traffic (over 3 tonnes) not to be driven across Telstra ducts or plant.
- 1.0mJackhammers/Pneumatic Breakers
- 2.0m Boring Equipment (in-line, horizontal and vertical)

For more info contact a CERTLOC Certified Locating Organisation (CLO) or Telstra Location Intelligence Team 1800 653 935

Vocus (WA)

Referral
253972152

Member Phone
1800 262 663

Responses from this member

Response received Tue 22 Apr 2025 9.36am

File name	Page
Response Body	65
253972152 - Vocus Response Plan.pdf	66
253972152 - Vocus Group Response letter.pdf	69

Dear Connor Asphar

Thank you for your request regarding the location of telecommunication services. You requested the information for the below area:

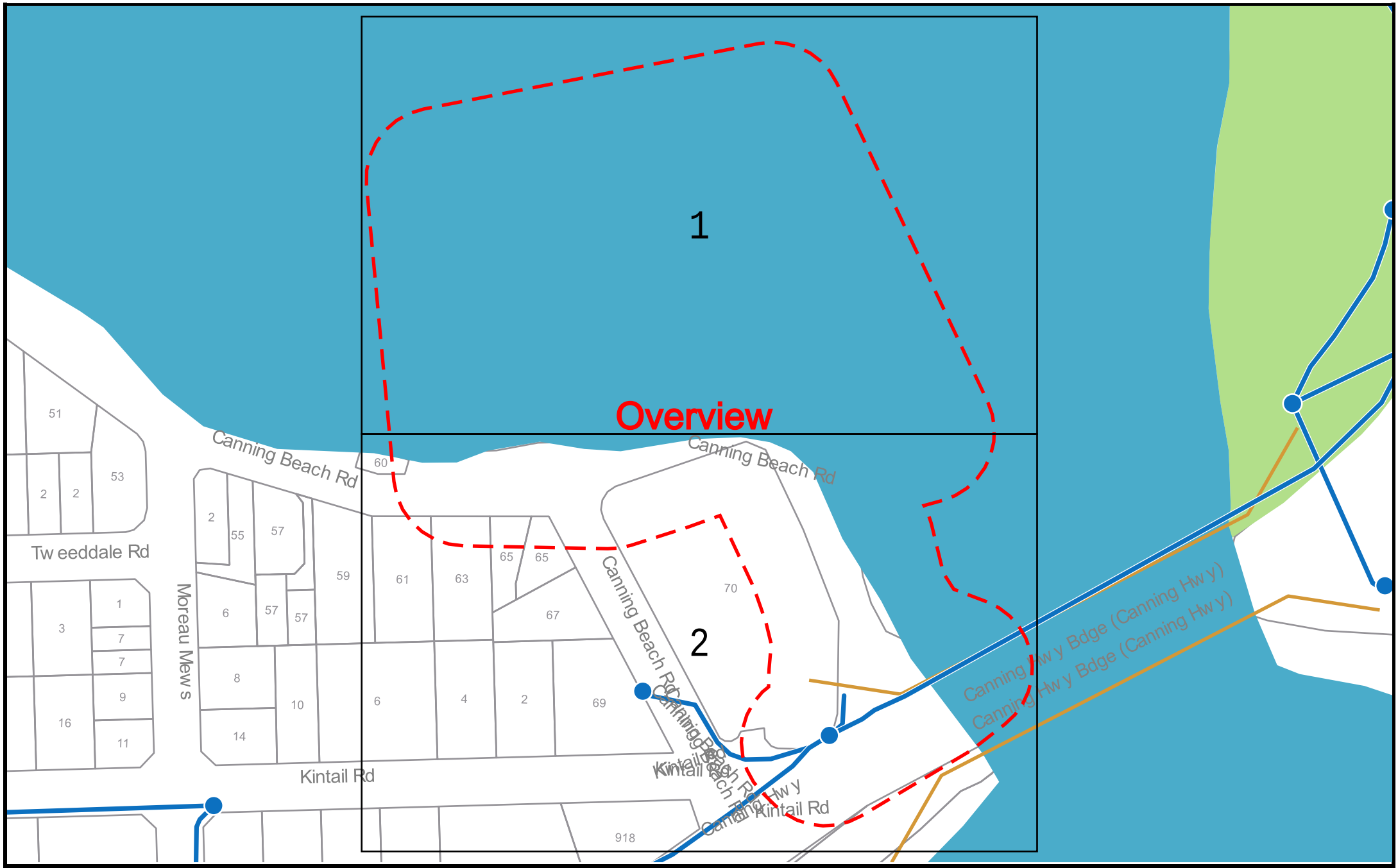
Before You Dig Australia Job No: 50012474
Sequence No: 253972152

Enquiry Date: 22/04/2025
Address: 70-72 Canning Beach Road
Suburb: Applecross
State: WA

Please find attached a copy of the services plan for the location of the works. Please note that these plans have a life of 30 days from the date you requested (above), as future works may affect your enquiry.

Kind regards,

Vocus Group BYDA Team
Level 12, 60 Miller Street
North Sydney NSW 2060
Australia



VOCUS communications

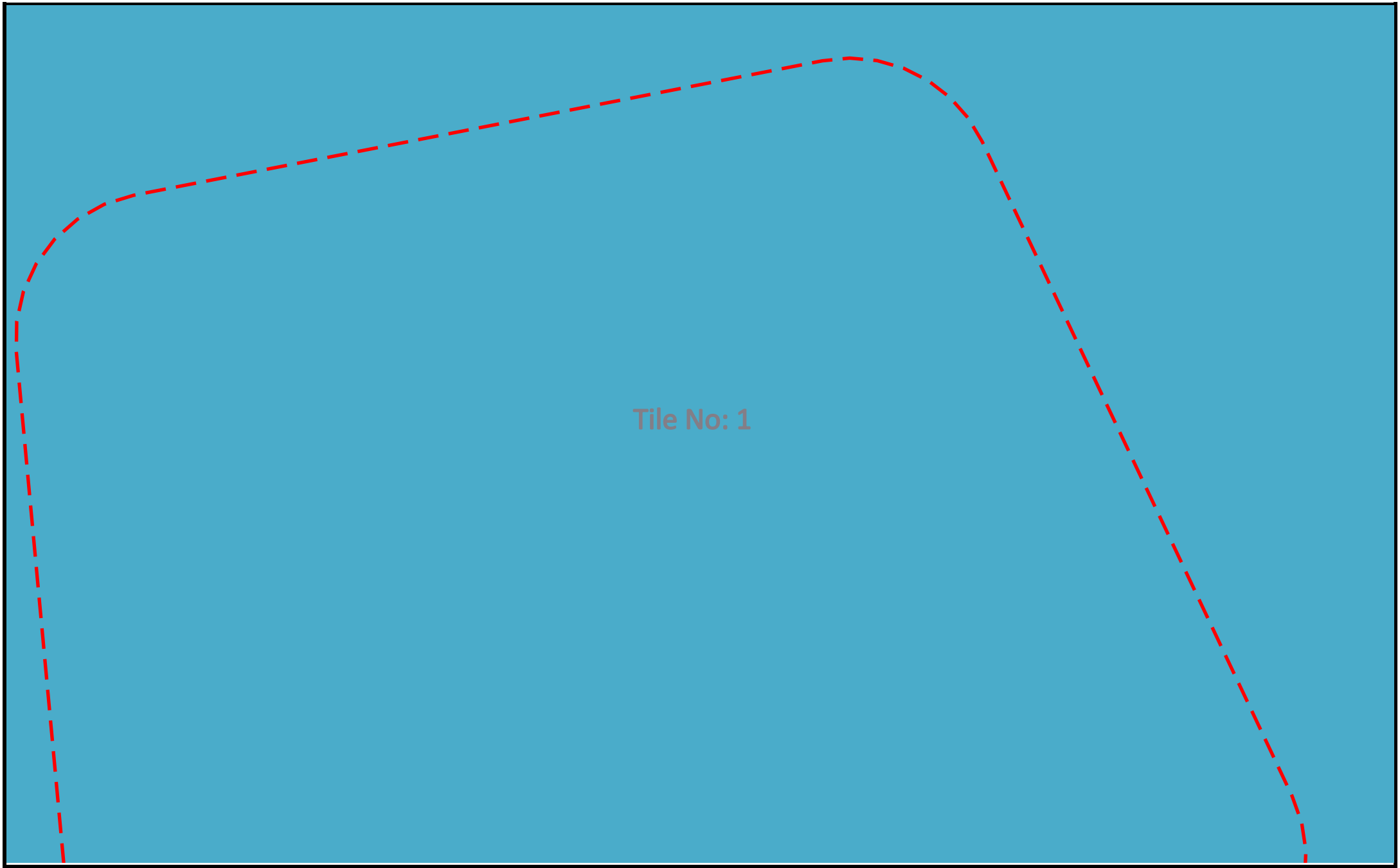
N W E S

SEQUENCE NUMBER: 253972152
JOB NUMBER: 50012474
ADDRESS: 70-72 Canning Beach Road, Applecross, WA 6153

LEGEND
Vocus Group Pit
Vocus Group Conduit

SCALE: 1:2050

The Vocus Group includes related bodies corporate of Vocus Communications Limited ACN 084 115 499.



VOCUS communications

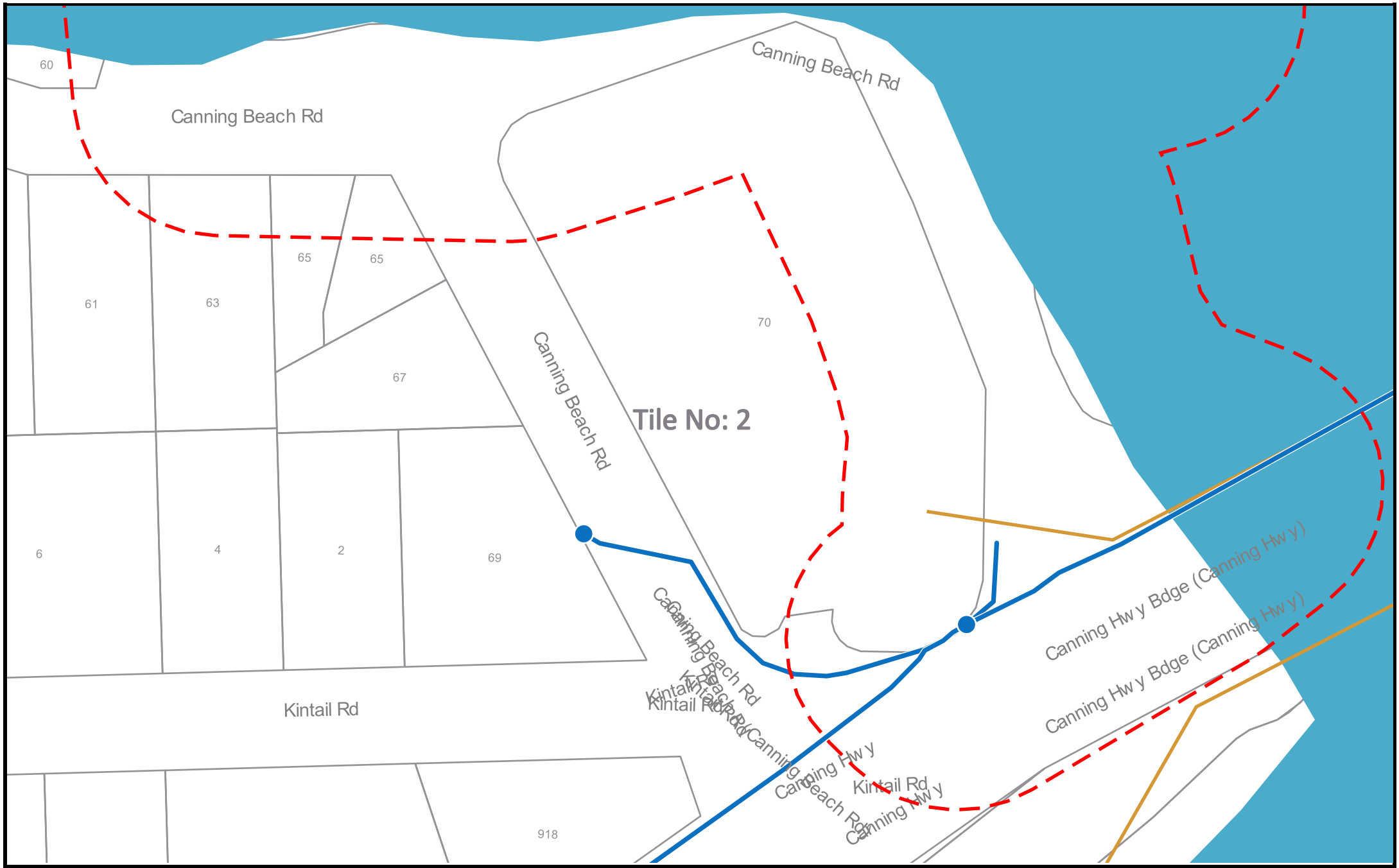
N
W E
S

SEQUENCE NUMBER: 253972152
JOB NUMBER: 50012474
ADDRESS: 70-72 Canning Beach Road, Applecross, WA 6153

LEGEND
Vocus Group Pit
Vocus Group Conduit

SCALE: 1:1000

The Vocus Group includes related bodies corporate of Vocus Communications Limited ACN 084 115 499.



VOCUS communications

N W E S

SEQUENCE NUMBER: 253972152
JOB NUMBER: 50012474
ADDRESS: 70-72 Canning Beach Road, Applecross, WA 6153

LEGEND
Vocus Group Pit
Vocus Group Conduit

SCALE: 1:1000

The Vocus Group includes related bodies corporate of Vocus Communications Limited ACN 084 115 499.

22/04/2025

Connor Asphar
GHD
Level 10,999 Hay Street
Perth WA 6000

Dear Connor Asphar

BEFORE YOU DIG AUSTRALIA - JOB: 50012474 SEQ: 253972152

Thank you for your enquiry regarding the below mentioned area.

Enquiry Date:	22/04/2025
Address:	70-72 Canning Beach Road
Suburb:	Applecross
State:	WA, 6153

Additional Information:

YES – We can confirm, the Vocus Group has Fibre Optic Services within the vicinity.

Please find attached a copy of the services plan for the location you have specified. These plans are valid for 30 days from the date requested.

IMPORTANT INFORMATION

Drawings and plans provided by the Vocus Group are reference diagrams which were correct at the time the asset was built. Exact ground cover and alignments cannot be provided with any certainty, as these may alter over time. Depth of the Telecommunications asset can vary considerably as can alignments. The plans provided are to be used as a guide only.

Identifying the Vocus Group asset visually is critical. Information on how this can be arranged is provided in this document.

Please email Damage.Relocations@vocus.com.au for general enquiries about the information provided within this response.

Yours sincerely,
Vocus Group

EMERGENCY CONTACT: 1800 262 663

DUTY OF CARE

The Constructor has a legal "Duty of Care" that must be observed when working in the vicinity of any Vocus Group asset.

It is the responsibility of the Constructor to design their works with no impact to the Vocus Group asset.
The Constructor must;

a. Obtain and review plans for a specified area through Before You Dig Australia within a reasonable timeframe before construction begins.
b. Visually locate the Vocus Group asset, using a Vocus Group Accredited Locator who will vacuum excavate (potholing) where construction activities may damage or interfere with the Vocus Group asset. Refer to ***"Clearances for Work in the Vicinity of the Vocus Group Asset"*** section below for more information.
c. Contact the Vocus Group if the Vocus Group asset is wholly or partly located near planned construction activities.

NOTE: Plans are provided free of charge from BYDA. Request for plans of a larger area may incur a cost.

DAMAGE

The Constructor will be held responsible for all asset damage when work commences prior to obtaining the Vocus Group plans, or failure to follow instructions.

ANY DAMAGE TO THE VOCUS GROUP ASSET
MUST BE REPORTED TO 1800 262 663 IMMEDIATELY

The Vocus Group reserves all rights to recover compensation for loss or damage to its cable network or other property including consequential losses.

ASSET RELOCATIONS

The Constructor is not permitted to relocate or alter any Vocus Group asset or network under any circumstance.
For all enquiries relating to the relocation of a Vocus Group asset please email Damage.Relocations@vocus.com.au

RESOLUTION OF POINTS OF CONFLICT

Should asset location and potholing reveal points of conflict between the Constructors planned works and the existing Vocus Group asset, the Constructor should contact the Vocus Group for advice and to discuss possible solutions.

Please contact the Fibre Assurance Team
Phone: 1800 262 663
Email: Damage.Relocations@vocus.com.au

ASSESSMENT OF RISK AND PROTECTIVE ACTIONS

Where "Protective works" are required around existing the Vocus Group asset, a solution will be confirmed on a case by case basis. The cost of the Protective works are the responsibility of the Constructor and the works will be carried out by a Vocus Group Accredited Contractor.

Where "Relocation works" of the Vocus Group asset is part of an agreed solution, a Project Manager will be assigned to work with the Constructor. The cost of the Relocation works are the responsibility of the Constructor and the works will be carried out by a Vocus Group Accredited Contractor.

Region	Onsite Locations Contact	Phone	Mobile	Fax	After Hours
Sydney, NSW	QC Communications	(02) 9620 2407		(08) 9620 1701	
Alice Springs, NT	Chambers Engineering	(08) 8955 5022	0418 837 833 0427 971 931	(08) 8955 5322	
Darwin, NT	Anywair Electrics		0418 890 071		0418 890 071
Darwin, NT	Northern Comm.'s		0407 904 319		0407 904 319
Brisbane, QLD	Optilinx	(07) 3901 7353	A/Hours or Emergency 0404 010 658	(07) 3901 7352	
Adelaide, SA	TPC	(08) 8376 5911		(08) 8376 5944	
Melbourne, VIC	Linktech	(03) 8805 0300			
Perth, WA	Abaxa	1300 369 642	A/Hours or Emergency 0411 746 657	(08) 9256 2922	

If any of the above numbers are uncontactable and your call is urgent, please call the Vocus National Service Desk on 1800 262 663

The Vocus Group accepts no liability for the information provided to the Constructor by the Locators listed above.

Further to this, the Constructor acknowledges that the Locator is the agent of the Constructor and that the Vocus Group takes no responsibility for the Locators' acts or omissions.

- For all work within 2.5 metres of nominal location, the Constructor is required to prove the actual location of the asset by potholing and exposing before commencing work.
- Potholing to expose and locate the Vocus Group asset is required before work commences and every 3 metres where the Constructors works are parallel to the Vocus Group asset.
- The Constructor is responsible for all asset damages when works commence without the Vocus Group plans or by failure to follow advice and/or instructions from the Vocus Group.

NOTE: No machinery shall be used within 1 metre of the Vocus Group asset until the actual location has been determined by potholing using hand tools.

NOTE: No heavy earth working machinery shall be used within 5 metres of the Vocus Group asset until the actual location has been determined by potholing using hand tools.

CLEARANCES FOR WORK IN THE VICINITY OF THE VOCUS GROUP ASSET

These figures represent the minimum clearance cover to be maintained over the Vocus Group asset. Please note that the actual cover over existing asset may be greater or less than recommended figures. Exact alignment and depths cannot be given with certainty as such levels can change over time.

Footpath and Verge Areas	450mm
Roadways	600mm

These figures represent the minimum clearance between construction and actual location of the Vocus Group asset.

Jackhammers / Pneumatic Breakers	Not within 2.5 metres of actual location
Vibrating Plate or Wacker Packer Compactors	Not within 500mm of actual location
Heavy Vehicle Traffic	Not to be driven across the Vocus Group asset with less than 600mm cover. The Constructor is to check the depth by potholing using hand tools.
Mechanical Excavators	Not within 1 metre of actual location. The Constructor is to pothole and expose the asset using hand tools.
Boring Equipment (in-line, horizontal and vertical)	Not within 2.5 metres of actual location. The Constructor is to pothole and expose the asset.

Access to the Vocus Group pits must remain accessible and at ground level at all times.

Any information provided is valid for 30 days only from the date of issue of this document. If the works extend beyond this period, or if the designs are altered in any way, you are requested to re-submit your proposal for re-assessment by contacting Before You Dig Australia.

Phone 1100 or check the website for more details http://www.1100.com.au

Schedule The Criminal Code
Chapter 10 National infrastructure
Part 10.6 Telecommunications Services
Division 474 Telecommunications offences

474.6 Interference with facilities

(1) A person is guilty of an offence if the person tampers with, or interferes with, a facility owned or operated by:

(a) a carrier; or
(b) a carriage service provider; or
(c) a nominated carrier.

Penalty: Imprisonment for 1 year.

(2) For the purposes of an offence against subsection (1), absolute liability applies to the physical element of circumstance of the offence, that the facility is owned or operated by a carrier, a carriage service provider or a nominated carrier.

(3) A person is guilty of an offence if:

(a) the person tampers with, or interferes with, a facility owned or operated by:

(i) a carrier; or
(ii) a carriage service provider; or
(iii) a nominated carrier; and

(b) this conduct results in hindering the normal operation of a carriage service supplied by a carriage service provider.

Penalty: Imprisonment for 2 years.

(4) For the purposes of an offence against subsection (3), absolute liability applies to the following physical elements of circumstance of the offence:

(a) that the facility is owned or operated by a carrier, a carriage service provider or a nominated carrier;

(b) that the carriage service is supplied by a carriage service provider.

(5) A person is guilty of an offence if:

(a) the person uses or operates any apparatus or device (whether or not it is comprised in, connected to or used in connection with a telecommunications network); and

(b) this conduct results in hindering the normal operation of a carriage service supplied by a carriage service provider.

Penalty: Imprisonment for 2 years.

Water Corporation

Referral
253972155

Member Phone
13 13 95

Responses from this member

Response received Tue 22 Apr 2025 9.37am

File name	Page
Response Body	75
Information Brochure - Damage Prevention.pdf	76
253972155 - Water Corp - Critical Water Assets Plan.pdf	83
Information Brochure - Legend.pdf	86
253972155 - Water Corp Cover letter.pdf	88
253972155 - Water Corp - Critical Sewer Assets Plan.pdf	89

ATTENTION: Connor Asphar

PLEASE DO NOT SEND A REPLY TO THIS EMAIL AS IT HAS BEEN AUTOMATICALLY GENERATED AND REPLIES ARE NOT MONITORED.

Thank you for your BYDA enquiry.

BYDA Job no.: 50012474
Sequence no.: 253972155

Requested Location Address:
70-72 Canning Beach Road
Applecross WA 6153

Attached are the files containing information relating to your recent BYDA request. Please read and understand all the attached documentation and contact Water Corporation on (08) 9424 8115 if you have any queries.

Note: Plans are now supplied as seperate attachments - please ensure that you review all attached documents

If you have received this email in error, please advise us by calling (08) 9424 8115 and quote the Sequence Number listed above.

If you are unable to launch any of the files for viewing and printing, you may need to download and install free viewing and printing software such as Adobe Acrobat Reader (for PDF files)

PelicanCorp Compiled with **TicketAccess** by PelicanCorp BEFORE YOU DIG

Protecting Buried Pipelines Information Brochure

Important information for any work near Water Corporation Pipelines

Working on or near Water Corporation pipelines can be dangerous. At all times the safety of the general public and your employees for your works remains your responsibility.

The information contained in this brochure is for asset protection advice only. For advice concerning personnel safety, please refer to the Annex attached

Pipeline damage can be expensive, hazardous and highly disruptive to the community. If you are a planner, constructor, supervisor, excavator or work in a similar role this brochure has important information to help you plan your site work and ensure that Water Corporation pipelines are not damaged.

All buried pipes must be visually identified before using powered machinery.

About Water Corporation Pipelines

The Water Corporation operates vast water, sewerage and drainage pipe networks throughout WA. At any given location there may be multiple pipes in the ground of different sizes, depths, alignments and materials.

Many pipes operate at high pressures and flow rates. The sudden release of large volumes of water under pressure may be dangerous to people in the vicinity and could lead to significant damage and community disruption.

Water reticulation mains are present in most streets with individual property services connected to these mains. These property services may be located by finding the property water meter. Property services are not marked on plans, however their presence should be anticipated.

Sewer Gravity Mains, Sewer Property Services and Drainage Gravity Mains are present in many streets and are often within property boundaries. Gravity mains may be located by the presence of an access chamber or manhole along the line of the sewer. Sewer property services are not marked on plans however their presence should be anticipated. See “Private Property” below for more information.

Other assets associated with pipes are: anchor and thrust blocks, sampling points, valves, valve pits, cathodic protection systems, underground tanks, manholes, and flow measuring equipment.

Interfering with or damaging these assets can be hazardous. Some pipes operate at high pressures and volumes, and hazardous gases may be present.

BEFORE YOU DIG
www.byda.com.au

WATER CORPORATION

How pipelines can be damaged

Pipes may be damaged by common construction activities such as excavating, drilling, boring, compaction, pile driving, movement of heavy loads, and operating cranes and vehicles.

Any damaged must be reported on **13 13 75** (24 hrs).

How to avoid damage

Damage can be avoided by carefully planning and conducting the work. Apply the 4-Ps: Plan - Pothole - Protect – Proceed.

Will the work possibly…?	Examples
a) cause **direct contact** in any way with a pipeline (including any minor contact with the protective coating)	Scraping with an excavator bucket or directional drilling head.
b) **involve digging near** to pipe or otherwise disturbing pipe foundations, bedding or other support	A crossing over or under a pipe.
c) cause **subsidence** of a pipeline, supporting material or structures	Excavating long or deep close to a pipe.
d) cause **high loads** to be applied to a pipeline or soil cover	Heavy vehicles and material stockpiles.
e) result in **high impacts, shock or vibration** near to or directly on a pipeline	Heavy vibratory compaction, pile driving, blasting & dropping heavy loads
f) **limit access** for future works or maintenance	Installing facilities too close to pipelines.
g) cause **electrical currents** to be applied to induced in a pipeline	Trenchless underground power installation.
h) interfere with **cathodic protection systems**	Direct damage to cables or affecting voltage potentials

1 - Plan

Before starting site work, request plans from the free **Before You Dig Australia** service. Plans usuallywill be provided within 2 days. (Mailed responses may take longer.)

Read and fully understand the plans and any other information provided.

Assess the risks and plan your work to avoid damage and other interference. Use the table above as a guide:

Remember plans (including the location of pipes and other assets) are approximate only. You must use safe and proper procedures to locate the exact location of Water Corporation assets including potholing (see 2 below).

The Water Corporation must be notified prior to starting work in some instances – see below.

2 - Prepare

Prepare by looking for onsite asset and infrastructure clues such as pit lids, marker posts and meters. Engagement of a BYDA Certified Locator is strongly recommended, which includes undertaking an electronic location survey prior to potholing.

3 - Pothole

Pothole by hand and visually confirm pipe location and depth before excavating with powered machinery. Pipes are not always at the exact location shown on plans and may not follow straight lines or constant depths.

4 – Protect

Use the appropriate measures to prevent pipe damage such as:

- Conducting a detailed utilities survey
- Choosing an alternative excavation or drilling site
- Marking the assets using flags, markings, barricades, signs, or bunting
- Choosing appropriate equipment and ensuring it will be used with care
- Choosing site specific work methods such as excavation planning, supervision, use of spotters, hand digging and shoring.
- Engaging the Water Corporation for site assistance if necessary (charges apply).
- Ensuring site workers are aware of pipes and protection requirements.

5 - Proceed

After you have completed the planning and preparation and have established the steps to prevent damage you can proceed – carefully.

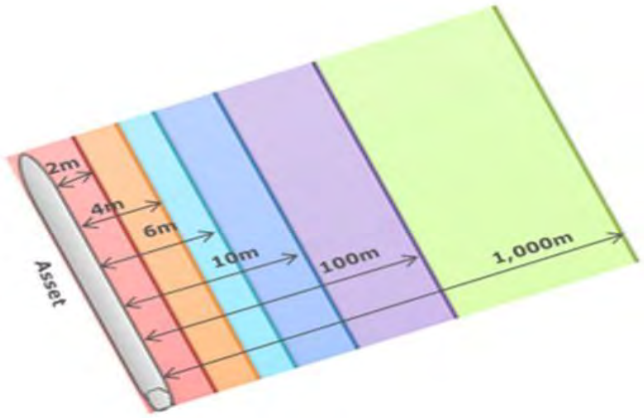
Continue to monitor work for changes.

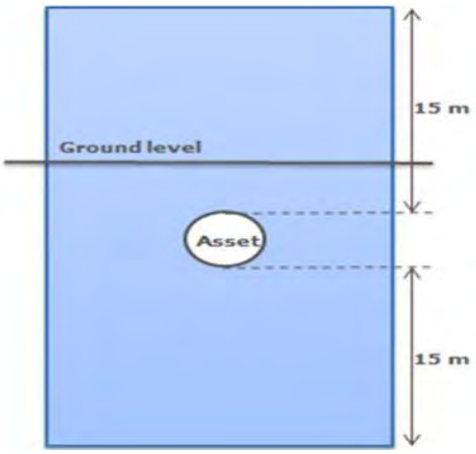
Notification of intention to work near Water Corporation pipelines

Whether you are a property owner, contractor or developer, and you intend to **excavate** or doother **ground disturbing work** near Water Corporation pipelines as listed below you may require approval before working near our assets. It is **strongly recommended** that you notify the Water Corporation. Contact **13 13 75** at least **5 working days** prior to commencing work to discuss plans with a technical advisor. The technical advisor may require a damage risk assessment. This will usually be conducted in a face-to-face meeting at one of our offices. In straight forward cases the assessment may be conducted over the phone. This risk assessment will enable you to be better prepared to undertake the work without causing damage.

Under Section 90 of the *Water Services Act 2012*, we require you to request approval if your proposed works are in, on, over, under or within the Prescribed Proximities to our assets. The Prescribed Proximities are summarised in the table below

Type of works	Asset type	Asset size	Prescribed Proximity (distance from the asset)
Ground disturbing works Including movement of heavy vehicles, ground compaction, dewatering, earthworks, open and trenchless excavations	Sewer pipelines	All	2 m
	Main drains	All	
	Water supply pipelines	< 300 mm diameter	4 m
	Water supply pipelines	≥ 300 mm diameter	6 m
	Sewer pressure mains	All	
	Drainage pressure mains	All	
Buildings, structures and other obstructions Including residential/commercial/industrial buildings, pools, sheds, carports, transport infrastructure, services, equipment installed on our assets, stockpiles, ground anchors, large trees	All assets	All	10 m both sides of the asset 15 m above & below the asset
Pile driving	All pipelines	All	100 m
Blasting	All pipelines	All	1,000 m





Work that does not require approval
• Light weight structures, fences and walls than can be readily removed • Planting and removing trees that have a mature height of less than 5 m **Note that requirements still apply to these types of works – refer to Water Corporation Technical Guidelines**

In accordance with the Act:

A person must not:

- *Erect, construct, install, place or demolish any building, plant, wall, fence or other obstruction in, on, over or under, or within the prescribed proximity to water service works of a licensee, except in accordance with the approval of the licensee.*
- *Drill, bore, excavate or use impact equipment within the prescribed proximity to water service works, of a prescribed kind, of a licensee, or engage in any other activity within the prescribed proximity that may damage those works, except in accordance with the approval of thelicensee.*

*Penalty for an individual: a fine of up to **$10,000***

The Prescribed Proximities have been established to protect our assets and your work from damage, as well as to ensure that you avoid costs and inconvenience associated with ceasing, demolishing, removing or altering your work as necessary to protect our assets.

In most instances work conducted outside of the Prescribed Proximities will have no impact on our assets, however in all situations you must still assess the risk of potential damage associated with your work. If you have any doubts about the potential for your work to cause damage email us at POS_enquiries@watercorporation.com.au.

For **assistance with information** on Water Corporation assets supplied through Before You Dig Australia call **13 13 95** between 8 am and 5 pm weekdays.

On-site locations - If you cannot locate a Water Corporation asset on-site call **13 13 75** (all hours) to request an on-site location which may be arranged where possible. Charges apply. See also Underground Service Locaters in the Yellow Pages®.

Private Property - For additional information about private services contact **13 13 95** between 8 am and 5 pm weekdays.

Plans of private property sewers may be available at cost from any Water Corporation Business Office or the Master Plumbers Association.

Building approval is required from Water Corporation for new buildings, building improvements,parapet walls, retaining walls and swimming pools.

The service pipe between the water meter and the house or external tap is the owner's responsibility. It is recommended that this pipe be located by hand digging.

Further information

- Before You Dig Australia: www.1100.com.au

- Guidelines for Working Near Water Corporation Pipelines. Available from www.watercorporation.com.au. (Look under *Your business - Working near pipelines*.)
- Utility Providers Code of Practice for Western Australia. Available from: www.mainroads.wa.gov.au/UsingRoads/RoadTrafficInformation/Pages/WorksOnMainRoads.aspx

Safety - Your Responsibility

At all times the safety of the general public and your employees for your works remains your responsibility.

- You therefore have to determine how to best conduct your work near our asset while ensuring that you maintain a safe system of work at all times.
- You have a duty or care to ensure that your works do no damage or interfere with our assets or cause hazards to any party.

Potential Hazards

Potential hazards associated with Water Corporation assets include, but are not limited to:

- Large forces associated with the release of water or wastewater under high pressure
- Rapid release of large volumes of water which may lead to drowning or traffic hazards
- Biohazards associated with contact with wastewater
- Exposure to asbestos (asbestos cement pipe and asbestos in some pipe wrapping)
- Exposure to toxic gasses in the wastewater system
- Exposure to hazardous wastes discharged by various industries to the wastewater system
- Ignition of combustible gasses in the wastewater system
- Fall hazards associated with accessing access chambers or high structures
- Electric shock hazards arising from Electrical infrastructure in the vicinity of pipelines, electrical faults or lightning
- Secondary hazards arising from damage or disruption to other structures or services due to damaged pipelines

Occasionally our assets also fail for reasons that are unrelated to third party works (such as from aging, corrosion or mechanical failures) which can also have hazardous impacts**.**

Authorised Access Only

Unauthorised interference with Water Corporation sewers and other assets (including uncovering, opening or repairing) is prohibited and may result in prosecution under the *Water Services Act 2012* (WA).

Responsibility

Parties are also responsible for all **OSH and public safety requirements** associated with their works. All works must be carried out in accordance with the relevant acts, regulations standards and codes of practice, as well as arranging any approvals, clearances etc. required by other agencies

Liability

Under Section 90 of the Water Service Act: *A person must not drill, bore, excavate or use impact equipment within the prescribed proximity to water service works, of a prescribed kind, of a licensee, or engage in any other activity within the prescribed proximity that may damage those works, except in accordance with the approval of the licensee.*

Penalty: a fine of $10 000

Disclaimer

Any plans or other information provided by Water Corporation must be used as a guide only. Plans (including the location of pipes and other assets) are approximate only and it is your responsibility to locate the exact location of Water Corporation assets before commencing work. Water Corporation does not warrant or make any representation as to the accuracy, completeness, reliability, currency, quality or fitness for purpose of any plans or other information (including, but not limited to, the accuracy of the scale of, or the location of, anything shown on any plan or diagram).

Overview

WATER CORPORATION

Scale:	1:1923
Job No.:	50012474
Sequence No.:	253972155
Print Date:	22 Apr 2025

N

Water

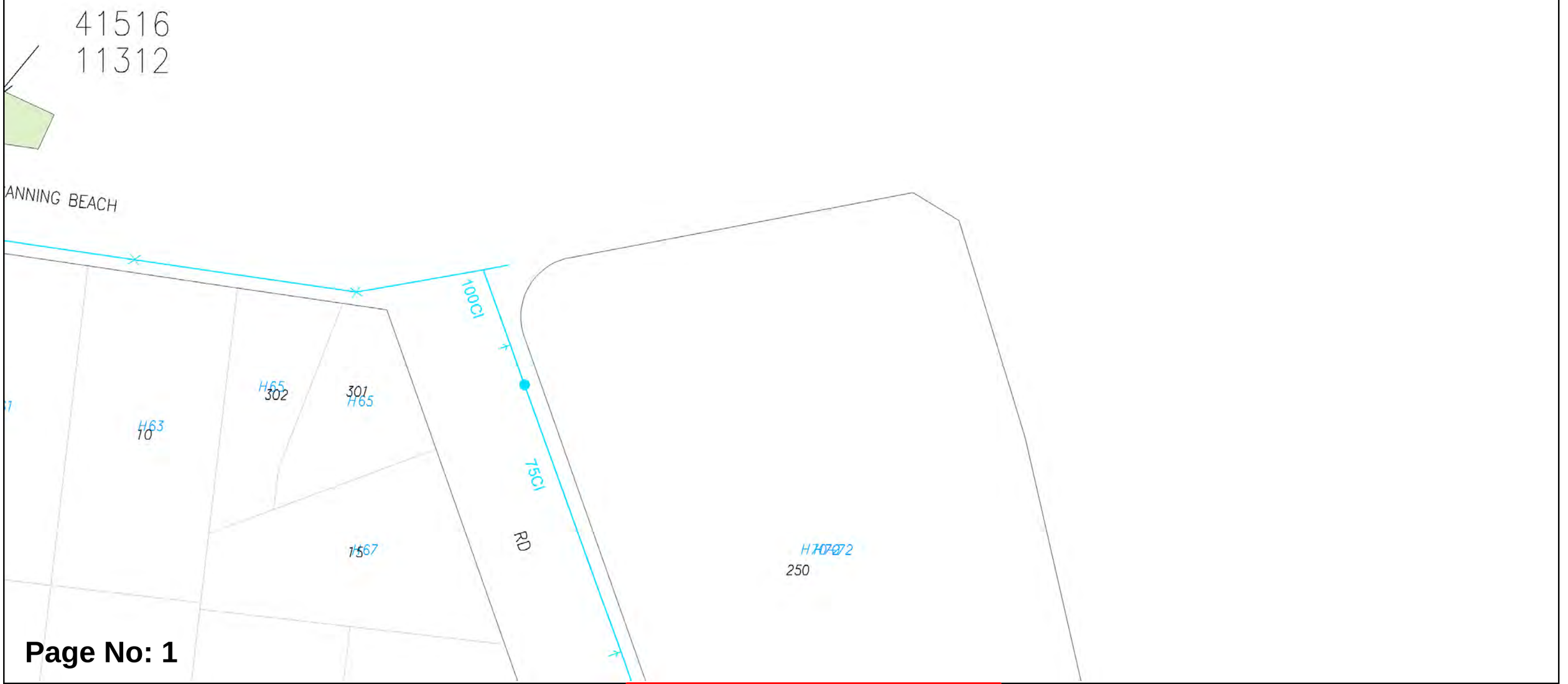
WARNING ASSET PROTECTION APPROVAL MAY BE REQUIRED

Apply for approval to work near our assets at:

Working near assets (watercorporation.com.au)

Unauthorised work within prescribed proximities of Water Corporation Assets is prohibited.

The Water Corporation has taken due care in the preparation of this map but accepts no responsibility for any inaccuracies or inappropriate use. This plan may be reproduced in its entirety for the purpose of site work planning but shall not otherwise be altered or published in any form without the permission of the Water Corporation. The Water Corporation may need to be advised of any planned ground disturbing activities near facilities on this map. Refer to Brochure - "Protecting Buried Pipelines". Please report any inaccuracies to Asset Registration Team by email to asset.registration@watercorporation.com.au.



Page No: 1

WATER CORPORATION

Scale:	1:750
Job No.:	50012474
Sequence No.:	253972155
Print Date:	22 Apr 2025

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Water

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WATER CORPORATION

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Water

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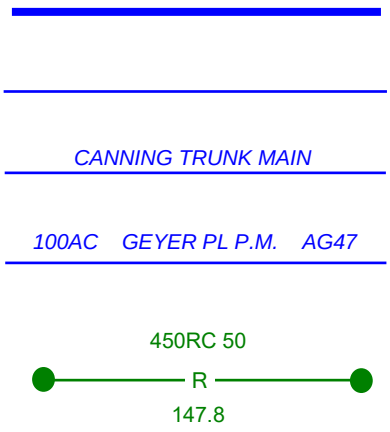
Plan Legend (summary)
INFORMATION BROCHURE

This legend is provided to Dial Before You Dig users to assist with interpreting Water Corporation plans. A more detailed colour version can be downloaded from www.watercorporation.com.au. (Your business > Working near pipelines > Downloads)

WARNING - Plans may not show all pipes or associated equipment at a site, or their accurate location. Pothole by hand to verify asset location before using powered machinery.



WATER, SEWERAGE AND DRAINAGE PIPELINES

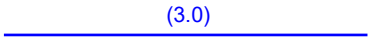
CRITICAL PIPELINE (thick line) EXTRA CAUTION REQUIRED
A risk assessment may be required if working near this pipe. Refer to your Dial Before You Dig information or call 131375.

Pipes are not always labelled on plans as shown here – assume all pipes are significant and pothole to prove location and depth.

P.M.	pressure main
M.S.	main sewer
R	rising main (i.e. drainage pressure main)

Common material abbreviations:

AC	asbestos cement e.g. 100AC NOTE: AC is brittle and is easily damaged.
CI	cast iron
GRP	glass reinforced plastic
P	PVC - class follows pipe material (e.g.100P-12)
RC	reinforced concrete
S	steel
VC	vitrified clay

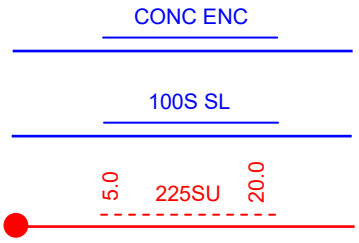


NON-STANDARD ALIGNMENT

Pipes are not always located on standard alignments due to local conditions. (i.e. Other than 2.1 m for reticulation mains and 4.5 m for distribution mains.)

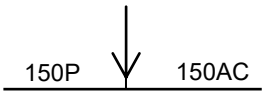
OTHER PIPE SYMBOLS

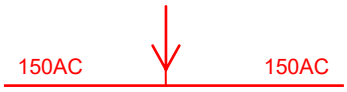
Other numbers or codes shown on pipes are not physical attributes. These are Water Corporation use only.



CONCRETE ENCASEMENT, SLEEVING AND TUNNELS

May be in different forms: steel, poured concrete, box sections, slabs.



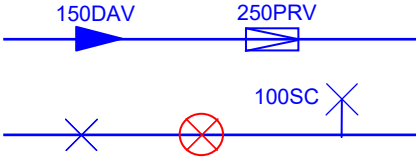


CHANGE INDICATOR ARROW

Indicates a change in pipe type or size. e.g. 150mm diameter PVC to 150mm diameter asbestos cement (AC).

PIPE OVERPASS

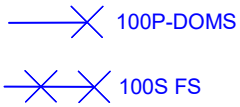
The overpass symbol indicates the shallower of the two pipes.



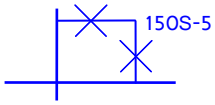
VALVES

Many different valve types are in use. Valve may be in a pit or have a visible valve cover. There may be no surface indication.

Valves may be shallower than the main or offset from it. e.g. A scour valve (SC) may have a pipe coming away from main pipeline on the opposite side to that indicated on the plan.



FIRE SERVICES
100 mm polythene domestic (DOMS) service
FS Fire service
FHS Fire hydrant service
Hydrant may be visible external to the building. Even if not visible a substantial fire service may still be present.



PIPE BYPASS
Bypass will not be on the same alignment as the main pipeline.

CATHODIC PROTECTION (CP)
Buried CP equipment may be located some distance from the pipeline being protected interconnected by buried cable. All CP fittings may not be visible.
A buried anode – various sizes and configurations
TP test point - may be visible on a post or in-ground
TR transformer rectifier

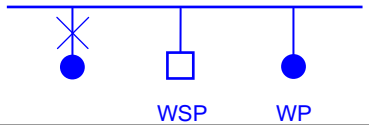
ACCESS TEE OR MANHOLE OR SERVICE ACCESS PIT
NOTE: Opening any manhole or pit is dangerous and is prohibited.
Below ground. May not be any visible signs at ground level or may be located in a pit.

WASTEWATER ACCESS CHAMBERS (MANHOLES)
-- Manhole (shown not labelled)
-- Tee or maintenance shaft (shown not labelled)
MS maintenance shaft (labelled)
WARNING: Opening any manhole or pit is dangerous and is prohibited.

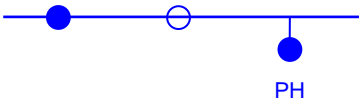
WASTEWATER MANHOLE INFORMATION BOXES
Square non-trafficable Do not drive vehicles over or place loads.
Round trafficable
In general if not located in the road treat as if non-trafficable.

HAZARDOUS MANHOLE
Indicates a potential health hazard from risk of exposure to toxic waste.
WARNING: Opening any manhole is dangerous and is prohibited.

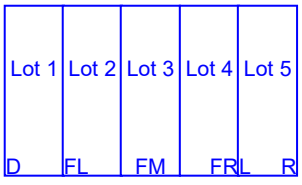
FLOWMETER
Various types of flow meters located in a pit. May be labelled with identifier. (e.g. 50 MFM, 50MM)



STANDPIPE, WATER SAMPLING POINT (WSP), WATER SUPPLY POINT (WP)
May be located adjacent to mains. Usually there will be some visible indication.



Hydrant May not be visible.
Hydrant Tee May not be visible.
Pillar hydrant Visible

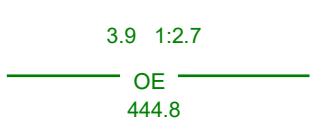


PRE-LAID SERVICES
D Deferred
FL Fully Prelaid Left
FM Fully Prelaid Front Middle
FR Fully Prelaid Right
L Left
R Right

Code indicates on which side of a lot the water service is located:

May be no visible indication at site.

SEWER OR DRAINAGE PUMP STATION
Several pipes and a pressurised main will be in the vicinity.



OPEN CHANNEL
OA Landscaped
OE Normal Open Earth
OF Open channel with flood levee
OH Half Pipe
OL Lined Channel
OS Swale-Shallow Depression
OW Natural Water Course

Drainage structures, even if dry, must be kept clear of any obstruction such as sand stockpiles.

629 Newcastle Street
Leederville WA 6007

PO Box 100
Leederville WA 6902

T: 13 13 85

WATER CORPORATION
UNDERGROUND ASSET DETAILS

Requestor details:

Connor Asphar
GHD
Level 10,999 Hay Street
Perth WA 6000
Phone: +61476786556

Sequence No: 253972155
BYDA Job No: 50012474
Enquiry Date: 22 Apr 2025
Issue Date: 22 Apr 2025

Requested location details:

Address: 70-72 Canning Beach Road, Applecross WA 6153

Note: The response for this enquiry has been interpreted from details in the picture location only.

Water Corporation asset impact:

WARNING - CRITICAL PIPELINES FOUND
The area you requested contains a critical pipeline. You may need to contact us with regard to this request prior to digging – see attached documents.

Important:

1. Plans show approximate location only – verify location by potholing before using powered machinery.
2. Please read all information and attachments.
3. All documents must be kept together and retained on site by the work team.
4. This information is valid for 30 days from date of issue.

Overview

WATER CORPORATION

Scale:	1:1923
Job No.:	50012474
Sequence No.:	253972155
Print Date:	22 Apr 2025

N

Sewer

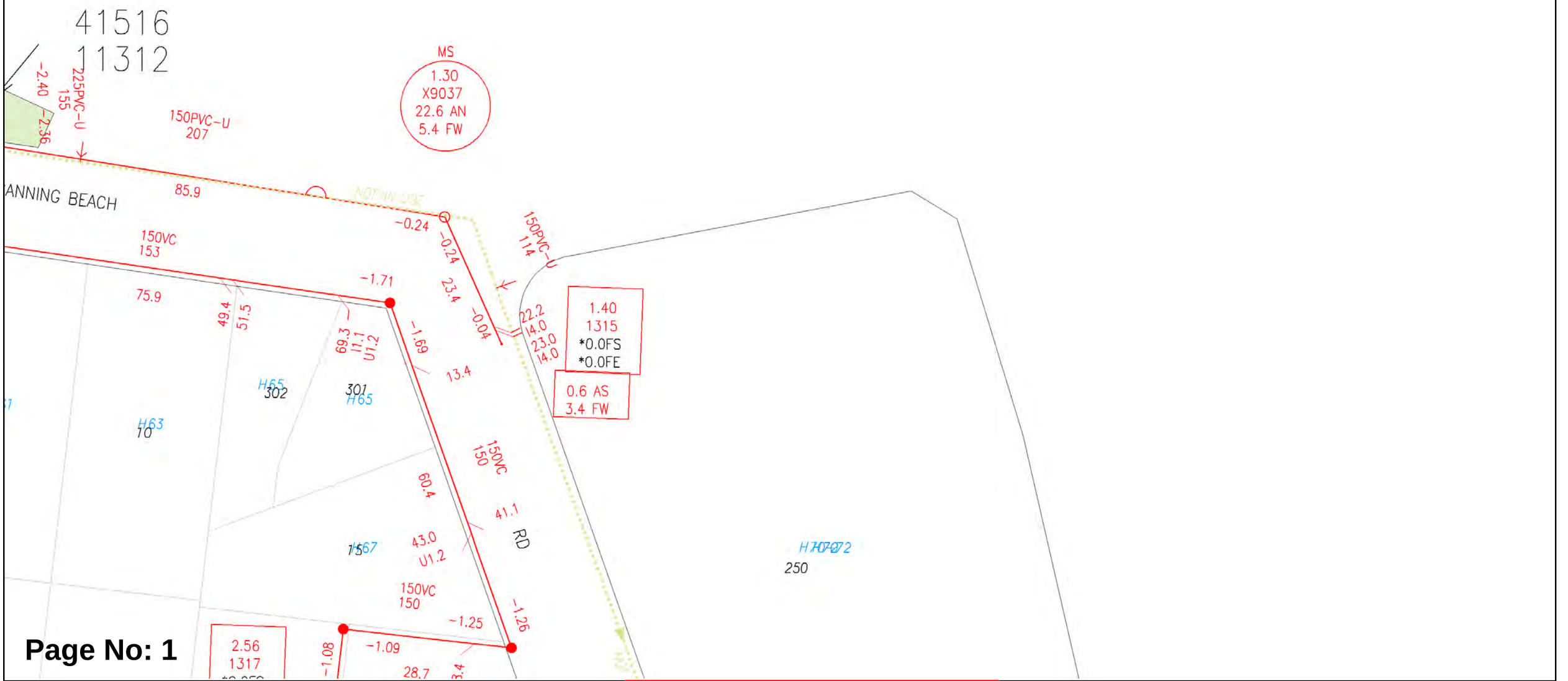
WARNING ASSET PROTECTION APPROVAL MAY BE REQUIRED

Apply for approval to work near our assets at:

Working near assets (watercorporation.com.au)

Unauthorised work within prescribed proximities of Water Corporation Assets is prohibited.

The Water Corporation has taken due care in the preparation of this map but accepts no responsibility for any inaccuracies or inappropriate use. This plan may be reproduced in its entirety for the purpose of site work planning but shall not otherwise be altered or published in any form without the permission of the Water Corporation. The Water Corporation may need to be advised of any planned ground disturbing activities near facilities on this map. Refer to Brochure - "Protecting Buried Pipelines". Please report any inaccuracies to Asset Registration Team by email to asset.registration@watercorporation.com.au.



Page No: 1

WATER CORPORATION

Scale:	1:750
Job No.:	50012474
Sequence No.:	253972155
Print Date:	22 Apr 2025

Sewer

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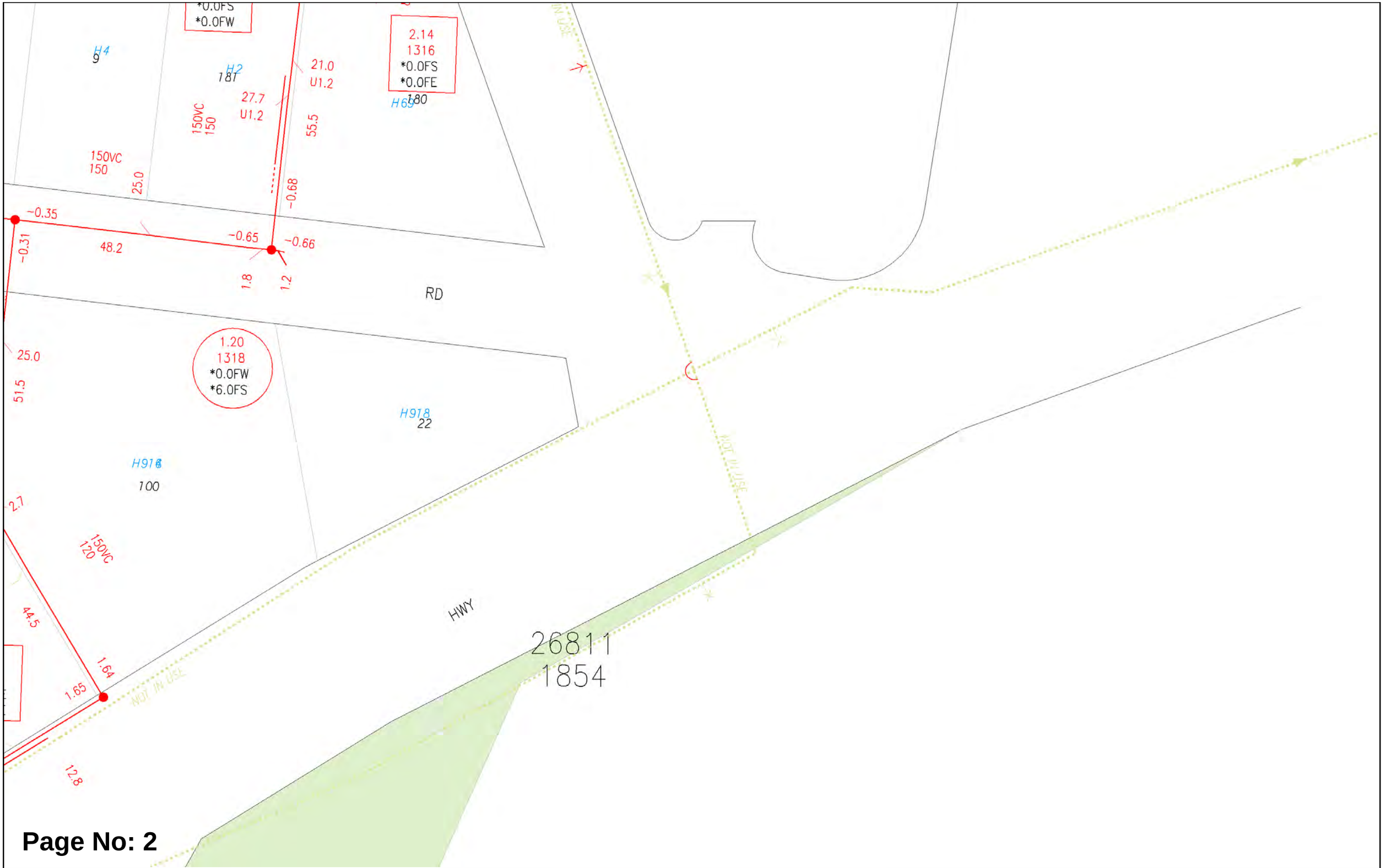

Page No: 2

WATER CORPORATION

Scale:	1:750
Job No.:	50012474
Sequence No.:	253972155
Print Date:	22 Apr 2025

N

Sewer

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Western Power

Referral
253972156

Member Phone
13 10 87

Responses from this member

Response received Tue 22 Apr 2025 9.38am

File name	Page
Response Body	93
253972156 - Western Power - Overhead Plan.pdf	94
253972156 - Western Power - HV-LV Plan.pdf	97
253972156 - Western Power - Communication Plan.pdf	100
253972156 - Western Power Response letter.pdf	102
Western Power - Safety Brochure.pdf	107

ATTENTION: Connor Asphar

PLEASE DO NOT SEND A REPLY TO THIS EMAIL AS IT HAS BEEN AUTOMATICALLY GENERATED AND REPLIES ARE NOT MONITORED.

Thank you for your BYDA enquiry.

BYDA Job no.: 50012474
Sequence no.: 253972156

Dig site location:
70-72 Canning Beach Road
Applecross WA 6153

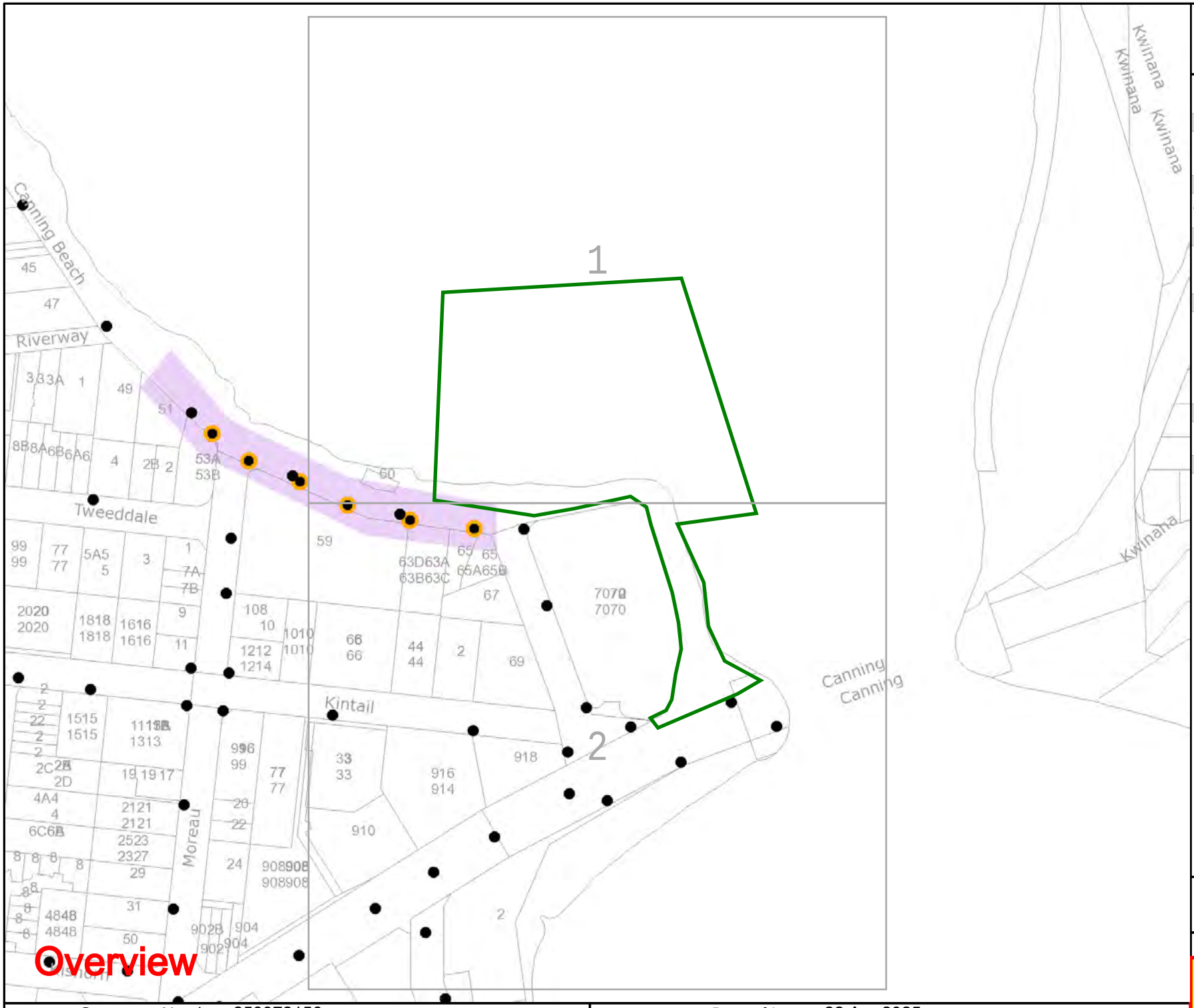
Attached are the files containing Western Power information relating to your recent BYDA request. Please read and understand all the attached documentation provided and call 13 10 87 if you have any queries.

Note: Plans are now supplied as seperate attachments - please ensure that you review all attached documents

If you have received this email in error, please advise us by calling 13 10 87 and quote the Sequence Number listed above.

If you are unable to launch any of the files for viewing and printing, you may need to download and install free viewing and printing software such as Adobe Acrobat Reader (for PDF files)

PelicanCorp Compiled with **TicketAccess** by PelicanCorp BEFORE YOU DIG



Overview

westernpower

OVERHEAD LEGEND

Structures

- Power Pole
- Transmission Poles

Transmission Overhead Powerline

- Transmission (33kV - 330kV)

Distribution Overhead Powerline

- High Voltage (1kV - 33kV)
- Low Voltage (< 1kV)

Proposed Construction Assets

- Design Area *
- High Voltage Overhead Powerline
- Low Voltage Overhead Powerline
- Power Pole

Communications Assets

- Overhead Pilot Cable

Feature

- Area of Interest

*** Please refer to coversheet**

Privately owned cables NOT SHOWN (including house services)

This map is INDICATIVE ONLY. Check that you have enough clearance from the DANGER ZONES near overhead powerlines.

Telephone Support: 1300 769 345
Mon to Fri - 08:00 to 16:30

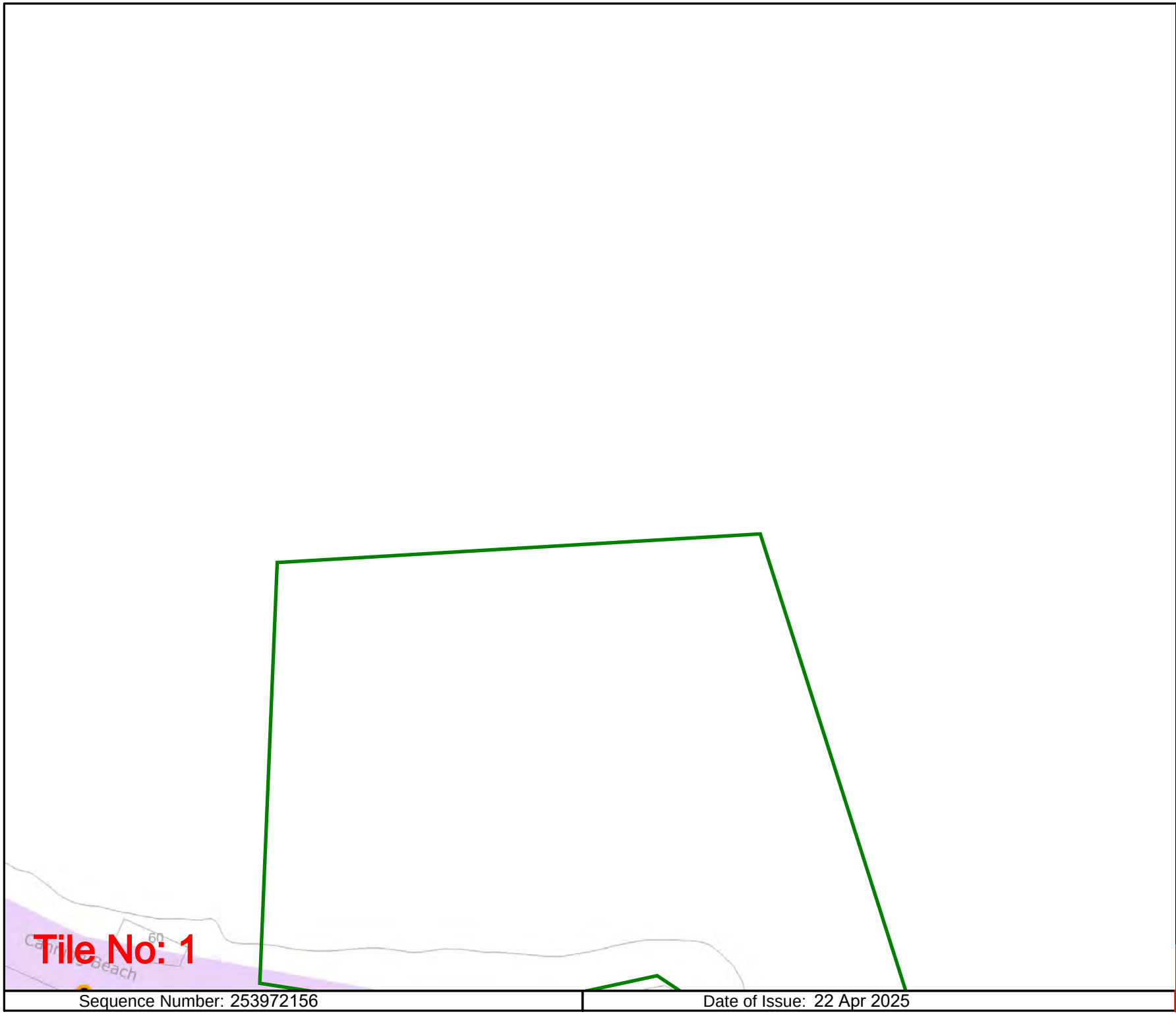
Information valid for 30 days from date of issue

A4	Scale : 1:3075

WARNING! Look out for overhead power lines

Sequence Number: 253972156

Date of Issue: 22 Apr 2025



westernpower

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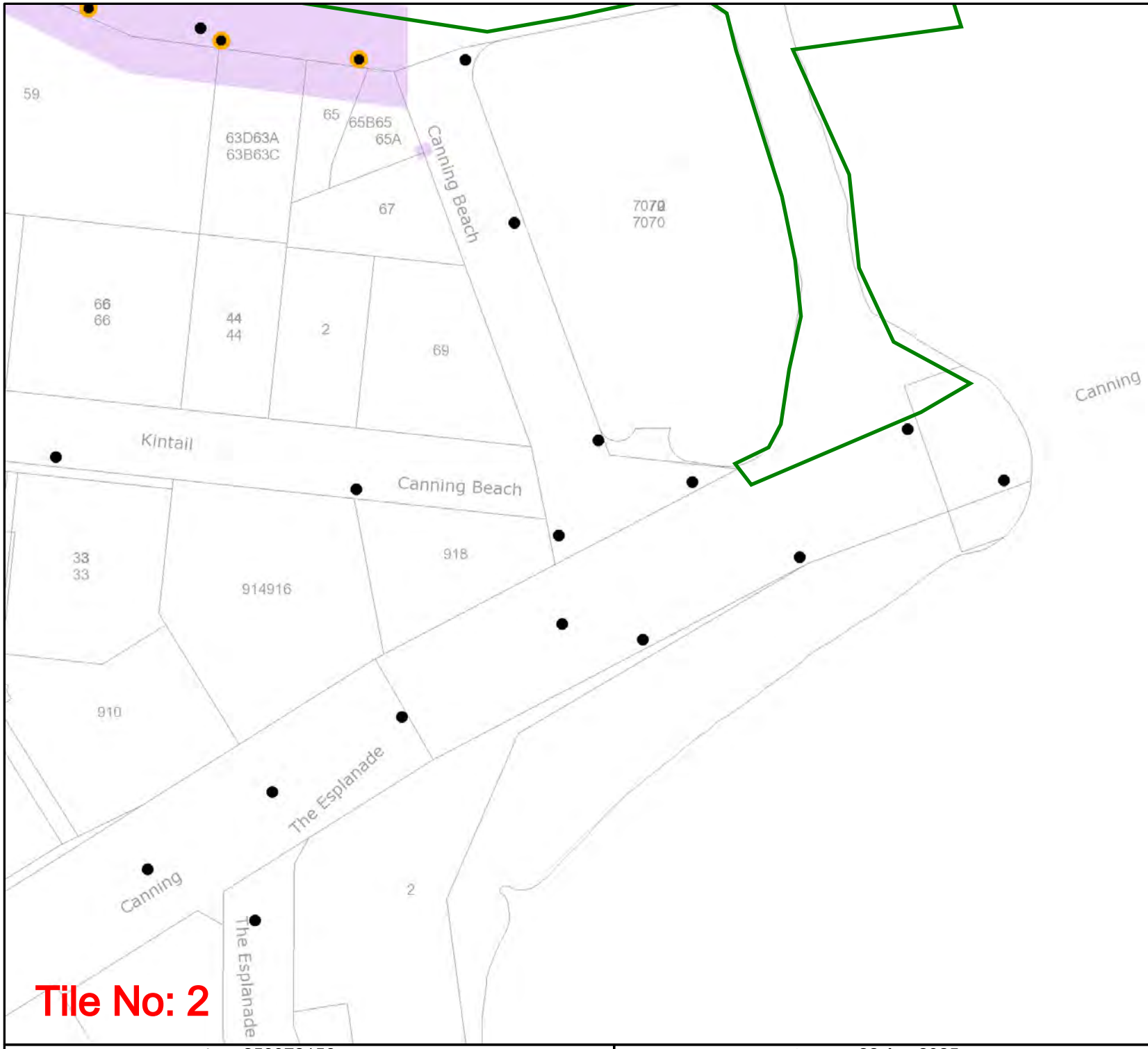

Tile No: 2

westernpower

OVERHEAD LEGEND

Structures

- Power Pole
- Transmission Poles

Transmission Overhead Powerline

- Transmission (33kV - 330kV)

Distribution Overhead Powerline

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- Low Voltage (< 1kV)

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Feature

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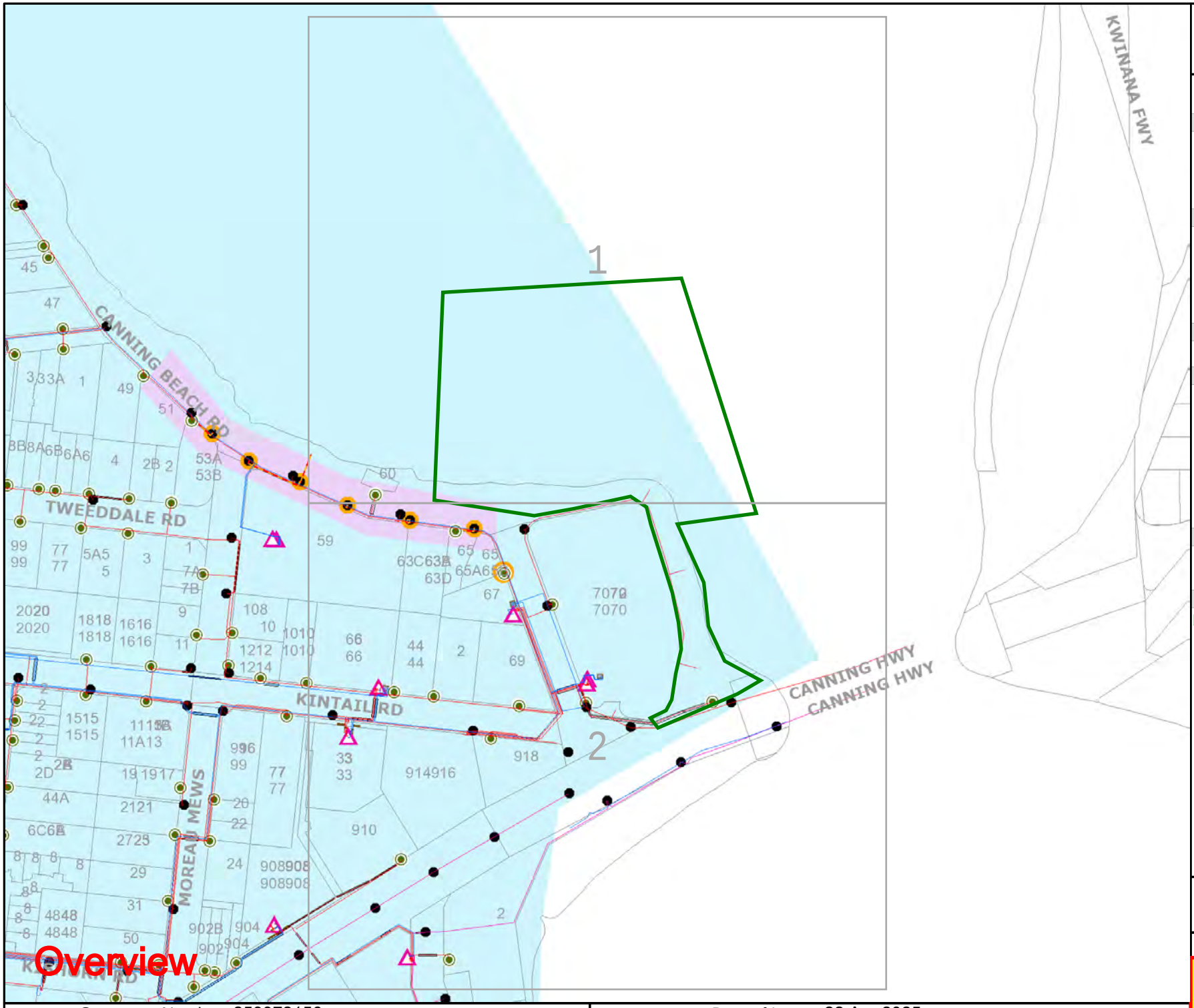

Overview

westernpower

UNDERGROUND LEGEND

Structures

- Pillar
- Metal Pole
- Transformer Site
- UG Crossing *
- Ring Main Unit
- LV Distribution Frame

Distribution Cables

- High Voltage Cable (1kV - 33kV)
- Low Voltage Cable (< 1kV)
- Street Light Circuit (< 1kV)
- Street Light Pilot (< 1kV)
- Earth Wire

Cable Pole Terminations

- HV Termination
- LV Termination

Proposed Construction Assets

- Design Area *
- High Voltage Underground Cable
- Low Voltage Underground Cable
- Metal Pole
- Pillar
- Transformer site
- HV Termination
- LV Termination

State Underground Power Project

- CURRENT Work Area *
- COMPLETED Area *

Feature

- Area of Interest

*** Please refer to coversheet**

Privately owned cables NOT SHOWN (including house services)

This map is INDICATIVE ONLY. Hand exposure via pothole method is MANDATORY.

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Mon to Fri - 08:00 to 16:30

Information valid for 30 days from date of issue

A4	Scale : 1:3075

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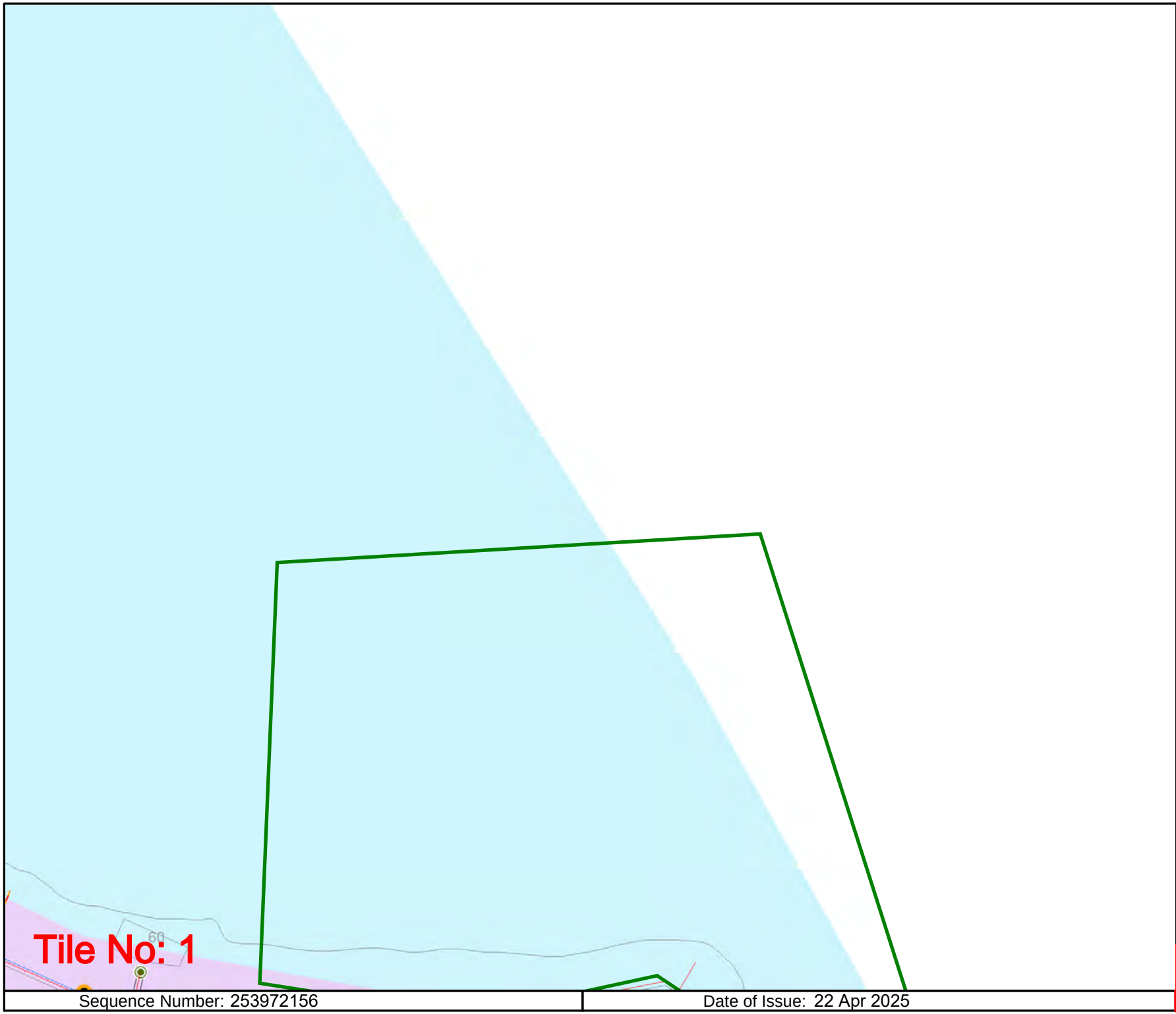

westernpower

UNDERGROUND LEGEND

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Feature

- Area of Interest

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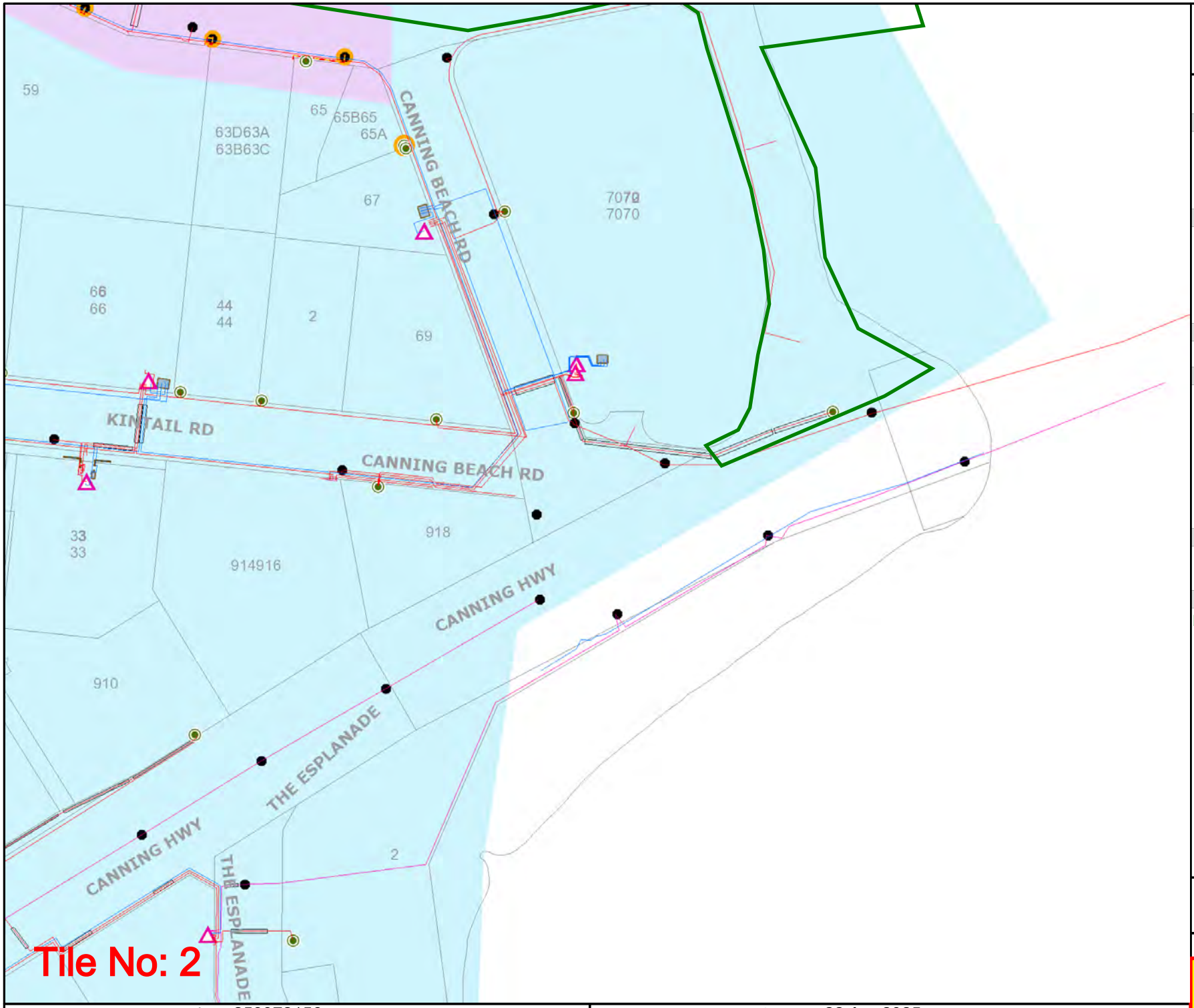

westernpower

UNDERGROUND LEGEND

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- Metal Pole
- Transformer Site
- UG Crossing *
- Ring Main Unit
- LV Distribution Frame

Distribution Cables

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- Low Voltage Cable (< 1kV)
- Street Light Circuit (< 1kV)
- Street Light Pilot (< 1kV)
- Earth Wire

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- LV Termination

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- HV Termination
- LV Termination

State Underground Power Project

- CURRENT Work Area *
- COMPLETED Area *

Feature

- Area of Interest

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Privately owned cables NOT SHOWN (including house services)

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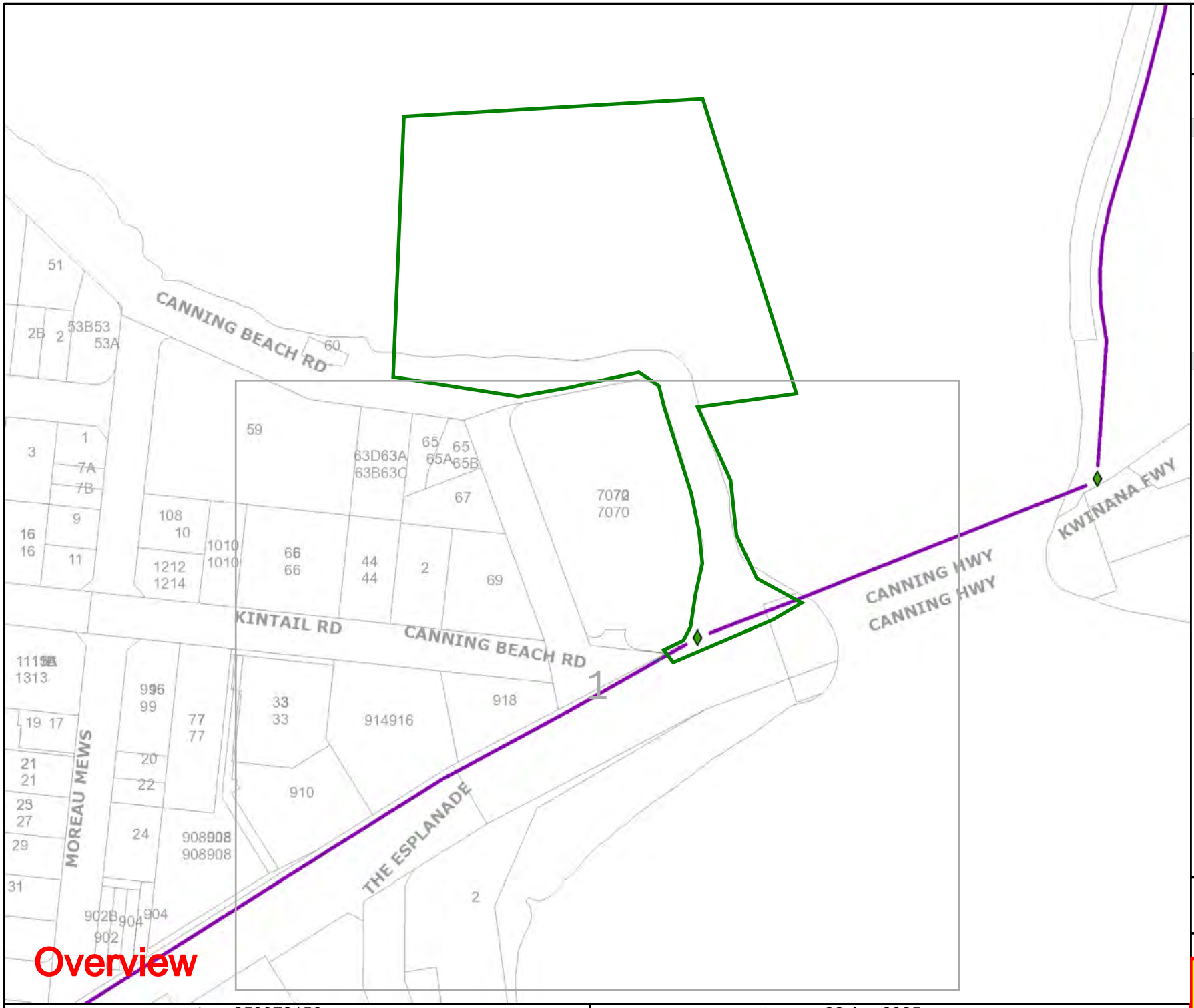


westernpower

FIBRE NETWORK LEGEND

Communications Assets

- Fibre Network Pits
- 32mm Conduit
- 50mm Conduit
- 63mm Conduit
- 80mm Conduit
- 90mm Conduit
- 100mm Conduit
- 110mm Conduit
- Direct Buried (Bare Cables)
- Cable in Unused Gas Main

Feature

- Area of Interest

*** Please refer to coversheet**

Privately owned cables NOT SHOWN (including house services)

This map is INDICATIVE ONLY. Hand exposure via pothole method is MANDATORY.

Network Management Centre
Telephone: 1800 752 075
Mon to Fri - 08:00 to 16:30

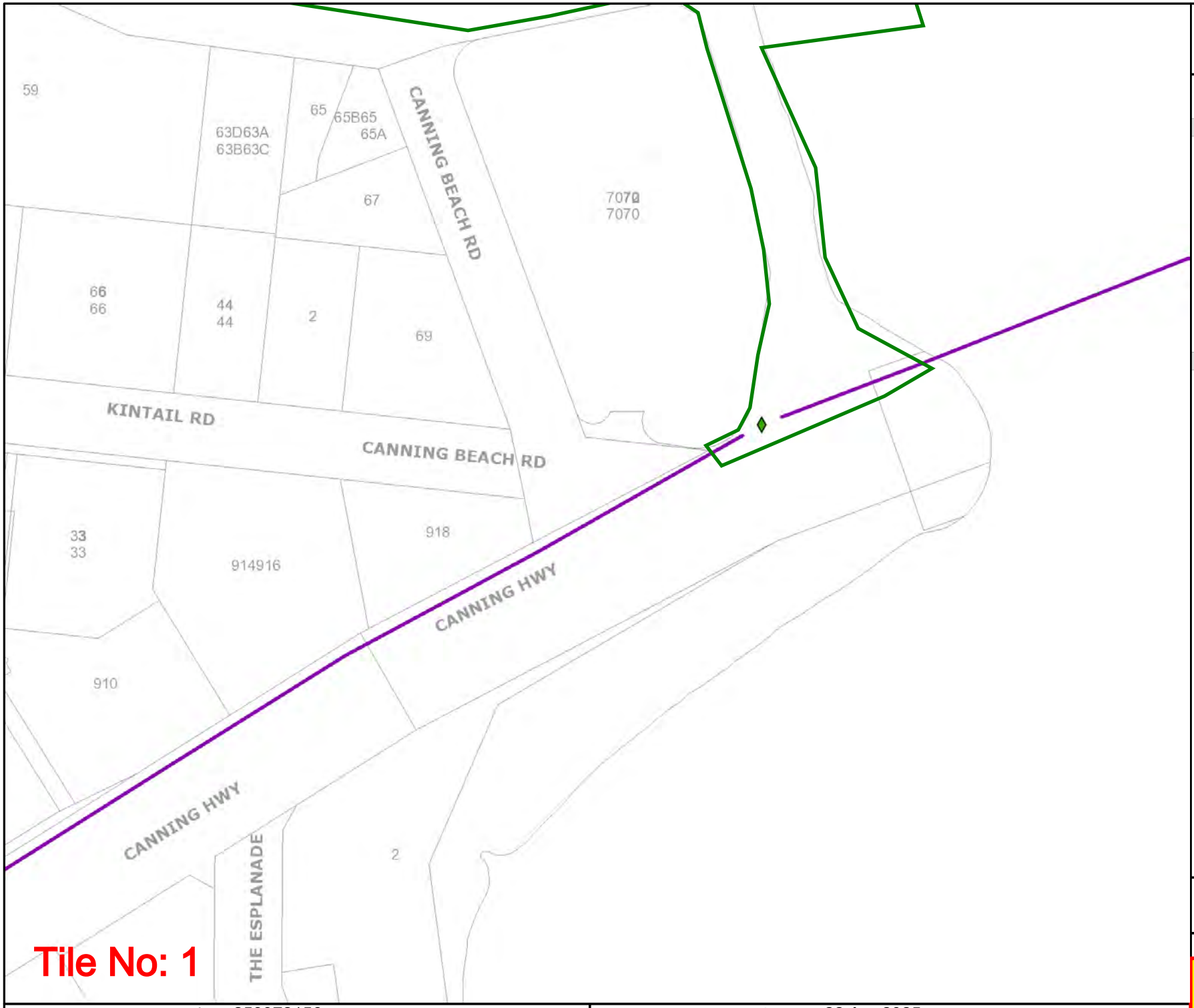
Information valid for 30 days from date of issue

A4	Scale : 1:2456

WARNING! Look out for overhead power lines

Sequence Number: 253972156

Date of Issue: 22 Apr 2025



Tile No: 1

westernpower

FIBRE NETWORK LEGEND

Communications Assets

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A4 | Scale : 1:1500

WARNING! Look out for overhead power lines

Sequence Number: 253972156

Date of Issue: 22 Apr 2025

Date 22 Apr 2025

To: Connor Asphar
Company: GHD
Phone Details: +61476786556
Email Address: auhar6ga8j42ul.i7ikk5lzozi3qj@smarterwx-mail.byda.com.au

Sequence Number: 253972156
Job Number: 50012474
Dig Site Location: Applecross, WA 6153

Before You Dig Australia information sheet

This information related to both underground and overhead network assets and is valid for **30 days from the date of issue. You must refer to current plans at all times.**

- **The *Energy Operators (Powers) Act 1979* makes it an offence to damage Western Power's network.**
- **The *Work Health and Safety (General) Regulations* establish restrictions for working safely around the Western Power network.**
- **Western Power's *Network Policy and Standards* along with applicable easement conditions establish restrictions for development around the Western Power network.**

It is the duty of care of persons planning to work or develop around Western Power's network to comply with the requirements of these statutory obligations and any other legislation, standard or guidance relevant.

Western Power's network assets are classified below:

Network Asset	Classification
Transmission	66kV or greater
Distribution	33kV or less (including low voltage)
Communication and other cables	communications, pilot cables, fibre optics, earths

General information

- Any information provided is a guide only and is subject to conditions of use
- Not all underground assets may be shown. If you discover a cable NOT shown on your map or you wish to clarify the construction status of assets in Design Areas, contact Western Power on **13 10 87**.
- You must make use of safe non-destructive methods (including, but not limited to, the 5 Ps) before carrying out any excavation work. It is mandatory for the customer/excavator/contractor to physically locate all services before excavating.

- Never assume the depth and alignment of cables. It may vary over time, depending on ground condition, age of the cable, road resurfacing, landscaping, etc.
- If you are unsure, you should stop work and refer to a qualified service locator.
- You can refer to the Utility Providers Code of Practice for Western Australia for further information regarding street works in public road reserves

Danger zones and minimum approach distances

A person conducting a business or undertaking or a person with management of control of a workplace is required under the *Work Health and Safety (General) Regulations 2022* to ensure that a worker (or plant or material of the worker) does not come within an unsafe distance of an underground powerline or within the danger zone for an overhead powerline. A danger zone represents an area of high risk when working and developing around the Western Power overhead network. It is a requirement to work and develop outside of these areas.

Minimum approach distances for underground cables

You should only commence digging once you have visually identified the location of underground services. We require you to meet the following minimum approach distances:

Nominal voltage	Minimum approach distance	
	Power tool or plant	**Non-powered hand tool/non-destructive digging**
Up to and including 1,000V (low voltage)	30cm	Approach with care, avoid contact
1,000V up to and including 33kV (high voltage)	50cm	
Greater than 33kV up to and including 330kV (transmission)	3m (Western Power must assess any works within 3m of cables 33kV and above)	

Danger zones for overhead powerlines:

Nominal voltage	Minimum approach distance
Low voltage (0 – 1000 volts)	1m
High voltage (>1000 to 33,000 volts)	3m
Transmission (>33,000 to 330,000 volts)	6m

If you propose to work/develop within or close to these areas, contact our Customer Service Centre on 13 10 87. Please allow adequate time before you commence work to discuss your options.

Easements

Works within a Western Power easement area are required to comply with applicable restrictions under Western Power's standard easement conditions. These conditions are established under the relevant easement document on the Certificate of Title which can be obtained from Landgate at your own cost (additional fees may apply).

If there is no easement, you must still follow Western Power's Network Policy and Standards (available at https://www.westernpower.com.au/industry/manuals-guides-standards/or by calling **13 10 87**).

Map legend information

Label	Meaning
Proposed Construction Assets	Overhead/underground assets may possibly be found in the Design Area shaded on the plan.
Design Area	Fieldworks are possibly in progress or just completed and the plans supplied may differ from the current state in the ground or overhead.
UG Crossing	There could be multiple underground ducts at that location.

Not depicted on Western Power Before You Dig Australia plans

Label	Meaning
Cables within a private property	For example, from pillar (green dome) to your electric meter. A cable-locating company will have to be contacted for on-site locations in the private property.

State Underground Power Program (SUPP) in progress or completed

Retrospective large-scale undergrounding of power and/or communications assets has been identified in the vicinity of your enquiry.

Please refer to the attached plan(s), for instructions or additional information.

Large Scale Undergrounding in Progress

Not all underground assets shown, there may be uncommissioned underground assets installed. Attached plan does not depict all Western Power underground activity.

Conditions on the use of information

The following are conditions on which Electricity Networks Corporation (**Western Power**) provides this Information Sheet and accompanying or related plans, diagrams, drawings and data (**Information**) to you (**the User**). These conditions are in addition to any obligations the User may have under law. You must immediately report any damage to Western Power's assets by calling Western Power on 13 13 51.

These conditions do not purport to limit or otherwise exclude the application of any term, warranty or condition that cannot be excluded by law, including but not limited to those contained in Schedule 2 of the *Competition and Consumer Act 2010* (Cth) and corresponding provisions.

By taking the Information Sheet and/or making any use of the Information, the User (and their servants and agents) acknowledge and accept:

1. There are risks associated with works near powerlines which may lead to service disruptions, property damage, serious injury or death;
2. While working in the vicinity of Western Power's assets, the User has a duty of care to Western Power to avoid loss or damage to Western Power's assets;
3. The Information is a guide only and may not correspond with the precise location of Western Power's assets;
4. The Information is valid for 30 days only from the date of issue and must be replaced if required after the 30 days.
5. The User relies upon the Information at their own risk;
6. The User must use safe and non-destructive methods to confirm the location of Western Power's assets (including safe work practices such as the 5 Ps and engaging qualified service locators at the User's cost) ;
7. The User must comply with the obligations referred to in this Information Sheet and in the Information in addition to any obligations imposed by law; and
8. The User must make enquiries with other utilities or property owners that may have cables or services in the area (including any that do not participate in the Before You Dig Australia program).

Western Power and each of its servants or agents:

1. Do not make or give any representation or warranty, express or implied, as to the accuracy, reliability, currency, timeliness or completeness of the Information;
2. Disclaim to the fullest extent the law permits and will not be liable or responsible for, any liability, loss or damage, whether direct or indirect (and whether or not arising out of negligence, breach of duty or statutory duty, or lack of care, of Western Power and its servants or agents or of any of them) arising out of, or in connection with, any use or reliance on the Information; and
3. Are under no obligation to correct, update or revise the Information.

Western Power's assets are lawfully placed in accordance with the *Energy Operators (Powers) Act 1979* (WA) and it is an offence under the Act for an unauthorised person to interfere with Western Power's network assets. Western Power reserves its rights to:

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2. refer any unauthorised person for prosecution under the *Energy Operators (Powers) Act 1979* (WA).

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Appendix C

Site inspection photolog and notes

Project Number: 12658388	**Client:** PTA	**Date:** 1/5/25.
Project Name: PTA Ferry PSI		
Project Manager: Louise	**Field Representative/s:** ZL + CA.	

Home/office departure time: ~ 7:15	Site arrival time: 7:45	Site departure time:	Home/office arrival time:

Weather conditions (please circle)	Hot	(Fine)	Overcast	Light rain	Heavy rain	Windy
	Other: —					
Subcontractors Y/N	Details: —					
Client onsite Y/N	Details: —					
Equipment used and condition	Details: Hand auger + pick.					
Planned field activities (please circle)	(Site inspection)	Drilling	Test pitting	(Hand augering)	Sediment/soil sampling	
	Stockpile sampling	Surface water sampling	Groundwater sampling	Vapour sampling	Landfill gas sampling	
	Other:					

Site log/diary

Onsite client/PM conversations, subbie arrival/breaks, equipment issues, weather changes, instructions received, when you arrived at each sampling location etc...

Electrical station ~ 40 m west of site (northside)
+ Water corp WWPS. (anchor point). discharge to beach.
construction under way at hotels.
Grass + garden beds healthy. Retic in gardens.
Drains to beach (north) appear dry. Pipes under raffels stained.
Dripping on soil/basineds (length of north side of building). Can see water dripping during inspection most likely from garden beds. Includes soils.
PVC pipe from garden beds to swan near pier. ~ every 5 m. Larger metal pipe ~ 4 m. pipes at sink. 3 metal pipes observed.
Some mussels on pontoon. HA

HA1 moved north of path to avoid WP low voltage cable
* Moved HA02 from garden bed to grass next to raffels. due to frequent refusal. HA03 encountered conduit at 0.5 m bgl. Moved 1.5 m east augured. to 1 m before refusal. Plog not keeping coordinates so collected info in Avenza.

FB + RB taken at 13:10 at Ellam St, RB from HA

~~Drain~~ Ellam St –

Drain flush + drain curb in NW corner of site

locked cage with above ground valve

Telstra underground service hatches

Flushmount drain in area SE of ~~DBSEB~~ DWER building

checkerplate service hatch near Flushmount drain

Curb drains along ellam st up to ~~DBSEB~~ DWER gate

Amcom Telecom box at front gate of ~~DBSEB~~

Site Layout/other details PERTH Garden show was on site not accessible

- Storage shed with Hydrocarbons + maritime chemicals (eastern storage shed)
- labs underconference room with some potential chemicals (has been recently relocated)
- possible Asbestos ~~drain~~ service hatch infront of regional office
- 3 aircon units on East side of lab building and 1x pump
- Electrical oabc hatch South side of lab/heavy machinery building
- Electrical conduit/ PVC piping running into ground on west side heavy machine building, Drain/gutter downpipes as well
- APAC Heat pumps on Nwest boundary fence line (x2)
- Boat launching area on Nth side heavy machinery building
- SW corner of area - Electrical box (above ground), hatch with PVC pipe, FLYGT cement hatch, Electrical box below ground
- Bitumen carpark inside fenceline, minor cracks throughout
- ~~Electrical~~ Inspection/service hatch Sth of reception
- AC unit Sth of reception x 4 on centre building + gas heater
- SE corner of site - marine waste, fuels + oils from broken equip containers
- - 3x AC unit on riverpark unit building
- Eastern shed - chemical storage, danger signs; authorised only
- ~~double~~ drains, slightly moist, 2x downpips w side
- Behind shed - small ali + wooden boats/tenders
- old sleeper planks
- west of shed - curb drain + Electrical services hatch
- reception building east side → x2 AC + 2x flush mount drain one in garden bed, one on road
- BBQ area 1x drain
- Nth of centre building - 5 x drain/downpipes, 2x drains
- Sth of centre building - Electrical services into ground
- Nth of DWER on boundary - Hazardous voltage telephone cables
- water fountains in park East of DWER building ≈ 300m
- 3x drains Nth side of park (some foam) Taylor st
- Irrigation control valve x1
- 2x drains flushmount at Nth end Taylor st
- Distribution box on west site Taylor st after Garland st
- Toilet block facilities west side of Taylor st after Garland
- 2x flush drains just after Garland st on Taylor st

QA blank sample register

Date/time	QA blank sample ID	Type (please circle)	Notes Rinsate taken off, field blank location, trip blank lab ID	Containers
25/05/01 1315	RB1	(RB) FB TB	Rinsate taken off Hand auger	4 3x glass 1x P
25/05/01 1312	FB1	RB (FB) TB	Taken at ellam St	4 3x glass 1x P
		RB FB (TB)		
		RB FB TB		
		RB FB TB		
		RB FB TB		
		RB FB TB		
		RB FB TB		
		RB FB TB		
		RB FB TB		
		RB FB TB		
		RB FB TB		
		RB FB TB		
		RB FB TB		
		RB FB TB		
		RB FB TB		

QC duplicate sample register

Date/time	Primary sample ID	Blind Duplicate Sample ID	Split Duplicate Sample ID	Containers
2025/05/01	GHD_Ellam_ST_HA02_0.1	Dup 1	Split 1	1x glass soil containers each
1/5/25	GHD-Ellam_ST HA03_0.1	DUP1	SPLIT1	1x glass container each

Site Notes Cont —

- ~~North~~ South side of Garland st - class D sealed watercorp hatches @ Taylor et
- McCallum park SW entry covered in woodchips extends to centre of park ≈ 7m wide path
- Tree area spanning Est + West McCallum park, woodchips, ≈ 10m wide
- Relic value service box (covered by grass) Sth of playground
- light post in centre of McCallum park inline with tree area running E to W
- Playground + gym equipment NE side of Mccallum Park
- Small floating pontoon area Nth of McCallum park
- 2nd lightpost in centre of park
- Tap with security valve in SW Quadrant of park
- Service locating poles in SW Quadrant of park (blue flag) (white posts no colour)
  - ↳ 6 x 1 inch pvc
  - ↳ 2 x 2 inch pvc
- water fountian South side of MCCallum park, near Garland st
- Public toilets + storage shed → 3 x dicon pipes
- water fountian East ≈ 50m of toilets
- Irrigation valve box between water fountian and toilets
- Water corp maintenance hatches inline with water fountain (Nth orientation)
- Construction works in SE corner of McCallum park (excavations)
- watercorp hatch centre of park on East side (services running N - S)
- Irrigation control valve Nth of water corp hatch
- electrical distribution box next to BBQ are on East side of park
- BBQ area has flourescent light bars x 2
- McCallum Park active area development
- ~~Begin~~ Sea container SE corner of Mccallum park, Puc pipes going into ground xy

Site Inspection Checklist

Client: DTA		**Job No:** 12658388	
Job Name: PTA & Ferry PSI		**Date of Site Visit:** 11/5/23	
Site Address: Raffels		**Site Area (approx.):**	
GHD Representative:	ZL + CA	**Arrival Time:** 7:45	**Departure Time:** 12:40
Weather Conditions:	(Please circle) Fine Overcast Light Rain Heavy Rain Other_____		
Works Being Undertaken:	Site inspection +		

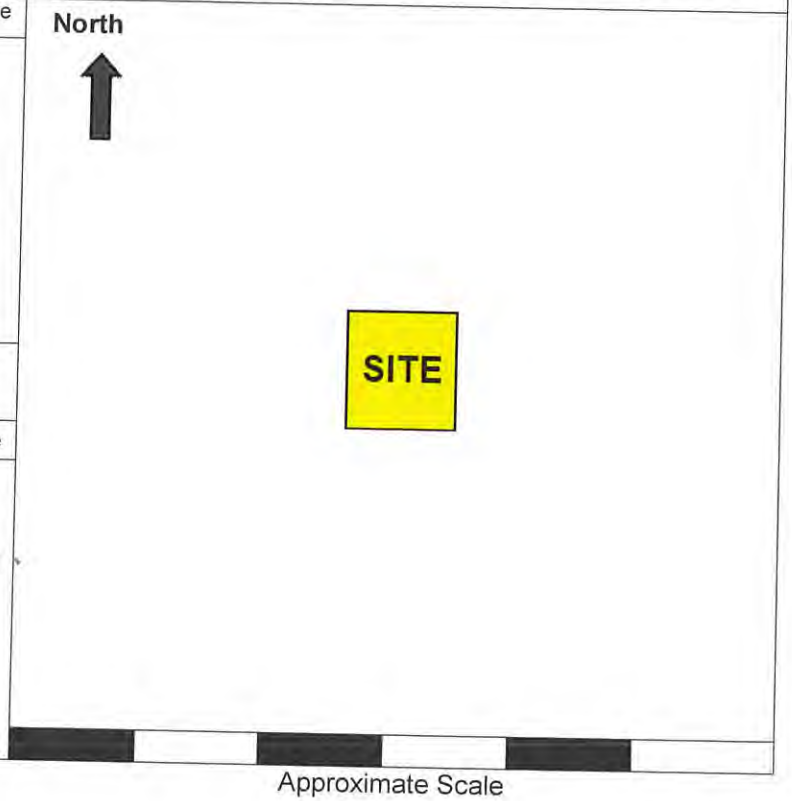
Potentially Sensitive Receptors near Site
(e.g. Schools, Hospitals, Surface Water Bodies, etc.)

Type	Direction	Distance
Swan	O	N/E
Raffels apartments	O	W/S

Potential Contamination Sources near Site
(eg Petrol Stations, Chemical Plants, Landfills, etc)

Type	Direction	Distance
Raffels apartments.	W/S	0
WC WWPS	W	50m.
Canning bridge		

Use Sketch Map to indicate significant features adjacent to the site
Include Land Use, Buildings, Ground Cover, Water Courses, Wet Lands, Drainage Ditches etc.



Approximate Scale

No	Item	Comment	Photo ID
1	Is a site locality plan attached? ☐ Yes ☑ No Describe surrounding land uses:		
2	Is a site layout plan attached? ☐ Yes ☑ No Brief site description:		

Site Inspection Checklist

No	Item	Comment	Photo ID
3	Infrastructure (overhead and evidence of underground services):	Yes. In foot path + roads.	
4	Is there a septic tank? ☐ Yes ☑ No		
5	Topography and slope (approximate gradient, direction of runoff or spills).	Relatively flat. Lower towards swan, g	
6	Are there any drains, sumps etc.? ☑ Yes ☐ No Are they open/covered, general condition, discharge points?	Drains on jetty side rock wall metal and PVC. Discharge pipes along north beach.	
7	Paving, floor or site surface type(s) and conditions (e.g. concrete, bitumen, grassed, soil, etc. including % cover, for hard areas indicate if cracked):	All cover in good condition. ~60% grass, ~40% path, bitumen.	
8	Is any visible staining present? ☑ Yes ☐ No	On Raffels garden walls (raised beds) from leaking water. Also Raffels internal pipes.	
9	Is site built on? ☑ Yes ☐ No Abandoned buildings ☐ Yes ☑ No Demolished buildings ☐ Yes ☑ No		
10	Is there presence of surface water on or near site? ☑ Yes ☐ No Name closest water course and provide distance and direction to site:	Swan N/E 0 m.	

Site Inspection Checklist

No	Item	Comment	Photo ID
11	Is there presence of vegetation? ☑ Yes ☐ No Describe condition and location:	Grass + garden beds. Good conditions.	
12	Is there evidence of any odour? ☐ Yes ☑ No		
13	Is there any litter, illegal dumping? ☐ Yes ☑ No Describe location and what it is:		
14	Is there any waste or chemical drums? ☐ Yes ☑ No Describe type of materials stored, condition of containers, spills stains, bunds, location etc.		
15	Is there lead paint flakes or potential lead paint? ☐ Yes ☑ No		
16	Is there any kind of workshop? ☐ Yes ☑ No	Not onsite. Maybe basement of Raffels.	
17	Is there any kind of service bay? ☐ Yes ☑ No		
18	Is there any kind of wash bay? ☐ Yes ☑ No		
19	Is there any evidence of saw cuts in concrete, unusual drainage systems or oil/water separators? ☑ Yes ☐ No	Cuts in foot path + service locator marking sprayed on footpaths.	
20	Is there any evidence of USTs		

Site Inspection Checklist

No	Item	Comment	Photo ID
	on site? ☐ Yes ☑ No Bowser ☐ Yes ☑ No Dip points ☐ Yes ☑ No Fill points ☐ Yes ☑ No Vents ☐ Yes ☑ No Describe number, in use, condition, leaks:		
21	Is there any evidence of furnaces/incinerators/burning, scorched soils ☐ Yes ☑ No Describe condition, surrounding soil condition, use and contents of fire box (e.g. ash, paper, wire, etc.):		
22	Is there any evidence of filling on site? ☑ Yes ☐ No Describe surface soils/fill appearance or disturbance:	For grassed areas. Rubble and built up beds along east side	
23	Is there any evidence of stockpiling on site? ☐ Yes ☑ No Describe surface soils/stockpiling appearance or disturbance:		
24	Is there evidence of asbestos in soil? ☐ Yes ☑ No		
25	Is there evidence of asbestos in building (cement sheet or fibrous		

Site Inspection Checklist

No	Item	Comment	Photo ID
	insulation)? ☐ Yes ☑ No		
26	Is there evidence of SMF in buildings? ☐ Yes ☑ No		
27	Is there any evidence of PCB containing electrical equipment (transformer, old fluorescent lights etc.)? ☐ Yes ☑ No		
28	Is there any evidence of ASTs on site? ☐ Yes ☑ No Bowser ☐ Yes ☑ No Describe number, in use, condition, leaks:		
29	Describe previous land use if known:	Beach (less developed).	
30	Is there a substation, capacitor banks or transformer? ☐ Yes ☑ No Describe condition, whether ground or pole mounted, indicate soil conditions and splash marks, etc.	~50 m west there were large switch boards.	
31	Is the site fenced? ☐ Yes ☑ No If No, is the site secure from illegal dumping?		

Site Inspection Checklist

No	Item	Comment	Photo ID
	☐ Yes ☑ No		
32	Further comments or Anecdotal evidence:	Mussels on jetty.	

Completed by:		Additional Remarks/Comment: Connor Asphalt (Include details of other personnel on-site)
Name:	Zaks Caughtrey	
Signature:		
Date:	1/5/25.	
Reviewed by:		
Name:		
Signature:		
Date:		

Applecross – Site photolog	

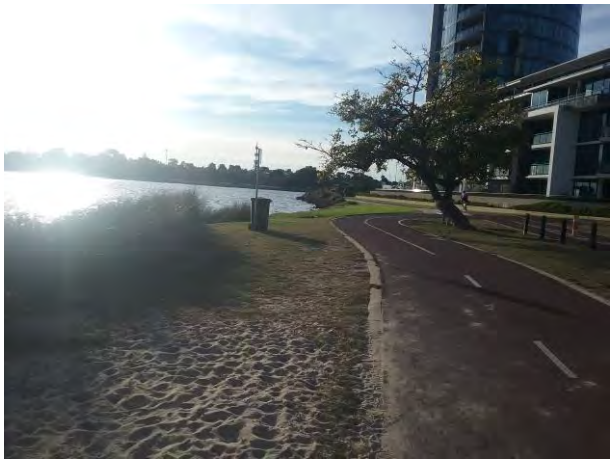



Photo 1 Site overview – facing east	*Photo 2 Drainage discharge pipe within grass area (dry) in western portion of Site*
Photo 3 Drainage discharge pipe within grass area (dry) in western portion of Site	*Photo 4 Drainage discharge pipe within grass area (dry) in western portion of Site*
Photo 5 Distribution panels on side wall of apartment complex	*Photo 6 Exposed valve on side wall of apartment complex*

Applecross – Site photolog	
Photo 7 Concrete manhole cover (bolted) in grass area between principal shared path and apartment complex	***Photo 8 Concrete manhole cover (bolted) in grass area between principal shared path and apartment complex***
Photo 9 Reticulation box within grass area between principal shared path and river	***Photo 10 Location of reticulation box within grass area between principal shared path and river***
Photo 11 Pipes beneath apartment complex (visible from garden bed) – some staining noted on pipes and infrastructure	***Photo 12 Pipes beneath apartment complex (visible from garden bed) – some staining noted on pipes and infrastructure***

Applecross – Site photolog	
Photo 13 Larger concrete manhole cover (bolted) in grass area between principal shared path and apartment complex, further east.	***Photo 14 Larger concrete manhole cover (bolted) in grass area between principal shared path and apartment complex, further east.***

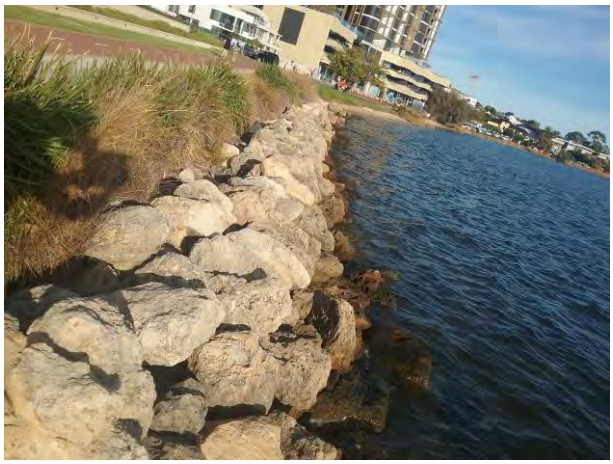
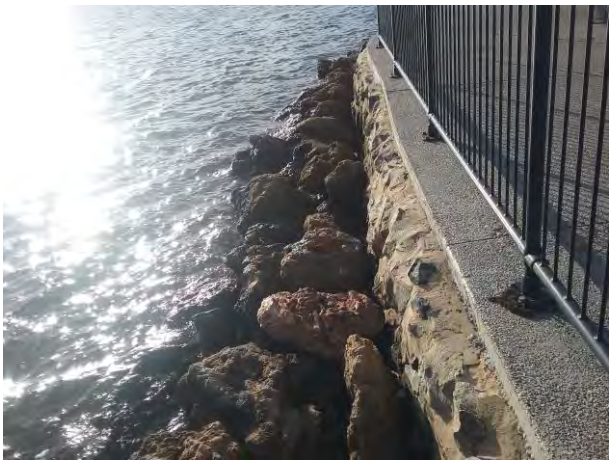

	

Photo 15 Looking west along rock wall, no drainage outlets visible	***Photo 16 Fenced portion of rock wall, no drainage outlets visible***
Photo 17 Water Corporation manhole cover within principal shared path near jetty	***Photo 18 Water Corporation manhole cover within principal shared path near jetty***

Applecross – Site photolog

Photo 19 Reticulation box within grass area between apartment complex and principal shared path (looking north, Water Corporation manhole cover visible in background)

Photo 20 Small PVC drain outlet visible in rock wall adjacent to jetty (to the north)

Photo 21 Small PVC drain outlet visible in rock wall adjacent to jetty (to the north)

Photo 22 Multiple drainage outlets visible in rock wall adjacent to jetty (to the north)

Photo 23 Looking northwest from the jetty – multiple drainage outlets visible in rock wall

Photo 24 Drain outlet visible in rock wall adjacent to jetty (to the south)

Applecross – Site photolog

Photo 25 Additional drainage outlets visible in rock wall to the south of the jetty

Photo 26 Mussels observed growing on underside of floating jetty

Photo 27 Drainage outlet with grate visible in rock wall to the south of jetty

Photo 28 Drainage outlet with grate visible in rock wall to the south of jetty

Photo 29 Irrigation control valve box in grass beside apartment complex, southwest of the jetty

Photo 30 Wet sections of limestone wall on eastern side of apartment complex/Raffles

Applecross – Site photolog

Photo 31 Reticulation box in grass area between Raffles complex and the principapl shared path, southwest of the jetty

Photo 32 Reticulation box in garden bed between principal shared path and the river, looking south, Canning Bridge visible in background

Photo 33 Reticulation box in garden bed between footpath and the river, looking south

Photo 34 Cover plate for services (electrical or telecommunications) in garden bed within roundabout

Photo 35 Services under Canning Bridge – looking west-northwest

Photo 36 Services under Canning Bridge

Applecross – Site photolog	
Photo 37 Services under Canning Bridge, looking east	*Photo 38 Lighting under Canning Bridge*
Photo 39 Services under Canning Bridge, looking north	*Photo 40 Main Roads box in grass area (southernmost part of Site prior to Canning Highway)*
Photo 41 Main Roads earth cable box in grass area (southernmost part of Site prior to Canning Highway)	*Photo 42 Electrical pillar in grass area beside Canning Highway (looking east, Main Roads box and earth cable box visible in background)*

Applecross – Site photolog	
Photo 43 Main Roads Network Performance Site (0089) box on light pole beside Canning Highway	*Photo 44 Western Power cover plates within principal shared path alongside Canning Highway*
Photo 45 Western Power cover plates within principal shared path alongside Canning Highway, looking east	*Photo 46 Three Western Power cover plates within principal shared path alongside Canning Highway, looking east*
Photo 47 415 V Distribution panels – located off-Site to the west (within Lot 11312 on Plan 189373)	*Photo 48 415 V Distribution panels – located off-Site to the west (within Lot 11312 on Plan 189373)*

Applecross – Site photolog	
 Photo 49 Water Corporation Sewage Pumping Station – located off-Site to the west (within Lot 11312 on Plan 189373)	 *Photo 50 Drainage discharge point at beach (dry) – located off-Site to the west*
 Photo 51 Drainage discharge point at beach (dry) – located off-Site to the west	

Appendix D

Analytical results tables

Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=1m, <2m	*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
Site												PTA Swan River Ferry Expansion - Applecross Site					
Location Code												GHD_Applecross_HA01				GHD_Apple	
Sample Date												01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
Field ID												GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.4
Sample Type												Primary	Primary	Primary	Primary	Primary	Primary
Depth (m bgl)												0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.4 - 0.6
Lab Report												1215966	1215966	1215966	1215966	1215966	1215966
Inorganics																	
% Moisture_	%	1										7.4	7.2	13	24	4.2	4.5
Metals																	
Arsenic	mg/kg	2	300				100					<2	<2	<2	<2	<2	<2
Cadmium	mg/kg	0.1	90									<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium (III+VI)	mg/kg	1					190					4.3	6.0	2.5	1.6	6.5	6.9
Copper	mg/kg	1	17,000				60					5.1	3.3	1.8	1.2	3.1	2.7
Lead	mg/kg	1	600				1,100					39	68	17	6.4	9.4	15
Mercury	mg/kg	0.02	80									0.02	0.03	0.03	0.04	0.02	0.03
Nickel	mg/kg	1	1,200				30					1.2	1.7	<1	<1	1.0	1.0
Zinc	mg/kg	5	30,000				70					26	46	16	8.0	17	19
BTEXN																	
Naphthalene (value used in F2 calc)	mg/kg	0.5		120	1,100	77		NL	NL	*50*		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	mg/kg	0.1		18,000	120,000	999,999		NL	NL	*85*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1		5,300	85,000	999,999		NL	NL	*70*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1										<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (o)	mg/kg	0.1										<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylene (m & p)	mg/kg	0.2										<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Xylene Total	mg/kg	0.3		15,000	130,000	999,999		NL	NL	*105*							
TRH - NEPM 2013																	
F1 (C6-C10 minus BTEX)	mg/kg	20		5,100	82,000	999,999		NL	NL	*180*		<20	<20	<20	<20	<20	<20
C6-C10 Fraction	mg/kg	20									700	<20	<20	<20	<20	<20	<20
F2 (>C10-C16 minus Naphthalene)	mg/kg	50		3,800	62,000	999,999		NL	NL			<50	<50	<50	<50	<50	<50
>C10-C16 Fraction	mg/kg	50								*120*	1,000	<50	<50	<50	<50	<50	<50
F3 (>C16-C34 Fraction)	mg/kg	100		5,300	85,000					*300*	2,500	<100	<100	<100	<100	<100	<100
F4 (>C34-C40 Fraction)	mg/kg	100		7,400	120,000					*2,800*	10,000	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of Total)	mg/kg	100										<100	<100	<100	<100	<100	<100
TRH - NEPM 1999																	
C6-C9 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C10-C14 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C15-C28 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C29-C36 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C10-C36 (Sum of Total)	mg/kg	50										<50	<50	<50	<50	<50	<50
PAHs - standard 16																	
Acenaphthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5								*0.7*		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo[b+j]fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5		1,900	29,000	999,999	170	NL	NL			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PAHs (Sum of total) - Lab calc	mg/kg	0.5	300									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	mg/kg	0.5	3									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	mg/kg	0.5	3									0.6	0.6	0.6	0.6	0.6	0.6
Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	mg/kg	0.5	3									1.2	1.2	1.2	1.2	1.2	1.2
PAHs - extended																	
2-methylnaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-methylcholanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
7,12-dimethylbenz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorinated Hydrocarbons																	
1,1,1,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorotoluene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SVOCs																	
1,2,3,4-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3,5-Tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4,5-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitroaniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3,3-Dichlorobenzidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-(dimethylamino) azobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-bromophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy) methane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl) ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,j)acridine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenzofuran	ng/kg	500,000										<500,000	<500,000	<500,000	<500,000	<500,000	<500,000
Diphenylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorocyclopentadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-butylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosopiperidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOCs																	

Site											PTA Swan River Ferry Expansion - Applecross Site					
Location Code											GHD_Applecross_HA01				GHD_Apple	
Sample Date											01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
Field ID											GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.4
Sample Type											Primary	Primary	Primary	Primary	Primary	Primary
Depth (m bgl)											0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.4 - 0.6
Lab Report											1215966	1215966	1215966	1215966	1215966	1215966
Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand		*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
								>=0m, <1m	>=1m, <2m								
1,1-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dibromoethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-butanone (MEK)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-methyl-2-pentanone (MIBK)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-dichloropropene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-dichloropropene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Rec C Soil

Statistics
* A Non Detect Multiplier of 0.5 has been applied.

Site												P					
Location Code												GHD_Applecross_HA01				cross_HA02	
Sample Date												01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
Field ID												GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.6
Sample Type												Primary	Primary	Primary	Primary	Primary	Primary
Depth (m bgl)												0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.6 - 0.8
Lab Report												1215966	1215966	1215966	1215966	1215966	1215966
Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=1m, <2m	*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
Inorganics																	
% Moisture_	%	1										7.4	7.2	13	24	4.2	3.2
Metals																	
Arsenic	mg/kg	2	300				100					<2	<2	<2	<2	<2	<2
Cadmium	mg/kg	0.1	90									<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium (III+VI)	mg/kg	1					190					4.3	6.0	2.5	1.6	6.5	1.5
Copper	mg/kg	1	17,000				60					5.1	3.3	1.8	1.2	3.1	<1
Lead	mg/kg	1	600				1,100					39	68	17	6.4	9.4	1.9
Mercury	mg/kg	0.02	80									0.02	0.03	0.03	0.04	0.02	<0.02
Nickel	mg/kg	1	1,200				30					1.2	1.7	<1	<1	1.0	<1
Zinc	mg/kg	5	30,000				70					26	46	16	8.0	17	<5
BTEXN																	
Naphthalene (value used in F2 calc)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	mg/kg	0.1		120	1,100	77		NL	NL	*50*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1		18,000	120,000	999,999		NL	NL	*85*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1		5,300	85,000	999,999		NL	NL	*70*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (o)	mg/kg	0.1										<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (m & p)	mg/kg	0.2										<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylene Total	mg/kg	0.3		15,000	130,000	999,999		NL	NL	*105*		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
TRH - NEPM 2013																	
F1 (C6-C10 minus BTEX)	mg/kg	20		5,100	82,000	999,999		NL	NL	*180*		<20	<20	<20	<20	<20	<20
C6-C10 Fraction	mg/kg	20									700	<20	<20	<20	<20	<20	<20
F2 (>C10-C16 minus Naphthalene)	mg/kg	50		3,800	62,000	999,999		NL	NL			<50	<50	<50	<50	<50	<50
>C10-C16 Fraction	mg/kg	50								*120*	1,000	<50	<50	<50	<50	<50	<50
F3 (>C16-C34 Fraction)	mg/kg	100		5,300	85,000					*300*	2,500	<100	<100	<100	<100	<100	<100
F4 (>C34-C40 Fraction)	mg/kg	100		7,400	120,000					*2,800*	10,000	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of Total)	mg/kg	100										<100	<100	<100	<100	<100	<100
TRH - NEPM 1999																	
C6-C9 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C10-C14 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C15-C28 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C29-C36 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C10-C36 (Sum of Total)	mg/kg	50										<50	<50	<50	<50	<50	<50
PAHs - standard 16																	
Acenaphthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5								*0.7*		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo[b+j]fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5		1,900	29,000	999,999	170	NL	NL			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PAHs (Sum of total) - Lab calc	mg/kg	0.5	300									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	mg/kg	0.5	3									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	mg/kg	0.5	3									0.6	0.6	0.6	0.6	0.6	0.6
Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	mg/kg	0.5	3									1.2	1.2	1.2	1.2	1.2	1.2
PAHs - extended																	
2-methylnaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-methylcholanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
7,12-dimethylbenz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorinated Hydrocarbons																	
1,1,1,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorotoluene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SVOCs																	
1,2,3,4-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3,5-Tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4,5-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitroaniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3,3-Dichlorobenzidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-(dimethylamino) azobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-bromophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy) methane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl) ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,j)acridine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenzofuran	ng/kg	500,000										<500,000	<500,000	<500,000	<500,000	<500,000	<500,000
Diphenylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorocyclopentadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-butylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosopiperidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOCs																	

Site											P						
Location Code											GHD_Applecross_HA01				cross_HA02		
Sample Date											01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	
Field ID											GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.6	
Sample Type											Primary	Primary	Primary	Primary	Primary	Primary	
Depth (m bgl)											0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.6 - 0.8	
Lab Report											1215966	1215966	1215966	1215966	1215966	1215966	
Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand		*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
								>=0m, <1m	>=1m, <2m								
1,1-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dibromoethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-butanone (MEK)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-methyl-2-pentanone (MIBK)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-dichloropropene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-dichloropropene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Rec C Soil

Statistics
* A Non Detect Multiplier of 0.5 has been applied.

Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=1m, <2m	*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
Site												P					
Location Code												GHD_Applecross_HA01					
Sample Date												01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
Field ID												GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.8
Sample Type												Primary	Primary	Primary	Primary	Primary	Primary
Depth (m bgl)												0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.8 - 1
Lab Report												1215966	1215966	1215966	1215966	1215966	1215966
Inorganics																	
% Moisture_	%	1										7.4	7.2	13	24	4.2	14
Metals																	
Arsenic	mg/kg	2	300				100					<2	<2	<2	<2	<2	<2
Cadmium	mg/kg	0.1	90									<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium (III+VI)	mg/kg	1					190					4.3	6.0	2.5	1.6	6.5	<1
Copper	mg/kg	1	17,000				60					5.1	3.3	1.8	1.2	3.1	<1
Lead	mg/kg	1	600				1,100					39	68	17	6.4	9.4	<1
Mercury	mg/kg	0.02	80									0.02	0.03	0.03	0.04	0.02	<0.02
Nickel	mg/kg	1	1,200				30					1.2	1.7	<1	<1	1.0	<1
Zinc	mg/kg	5	30,000				70					26	46	16	8.0	17	<5
BTEXN																	
Naphthalene (value used in F2 calc)	mg/kg	0.5		120	1,100	77		NL	NL	*50*		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	mg/kg	0.1		18,000	120,000	999,999		NL	NL	*85*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1		5,300	85,000	999,999		NL	NL	*70*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1										<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (o)	mg/kg	0.2										<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylene (m & p)	mg/kg	0.3		15,000	130,000	999,999		NL	NL	*105*		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Xylene Total	mg/kg	20		5,100	82,000	999,999		NL	NL	*180*		<20	<20	<20	<20	<20	<20
TRH - NEPM 2013																	
F1 (C6-C10 minus BTEX)	mg/kg	20									700	<20	<20	<20	<20	<20	<20
C6-C10 Fraction	mg/kg	50		3,800	62,000	999,999		NL	NL			<50	<50	<50	<50	<50	<50
F2 (>C10-C16 minus Naphthalene)	mg/kg	50								*120*	1,000	<50	<50	<50	<50	<50	<50
>C10-C16 Fraction	mg/kg	100		5,300	85,000					*300*	2,500	<100	<100	<100	<100	<100	<100
F3 (>C16-C34 Fraction)	mg/kg	100		7,400	120,000					*2,800*	10,000	<100	<100	<100	<100	<100	<100
F4 (>C34-C40 Fraction)	mg/kg	100										<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of Total)	mg/kg	100															
TRH - NEPM 1999																	
C6-C9 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C10-C14 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C15-C28 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C29-C36 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C10-C36 (Sum of Total)	mg/kg	50										<50	<50	<50	<50	<50	<50
PAHs - standard 16																	
Acenaphthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5								*0.7*		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo[b+j]fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5		1,900	29,000	999,999	170	NL	NL			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PAHs (Sum of total) - Lab calc	mg/kg	0.5	300									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	mg/kg	0.5	3									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	mg/kg	0.5	3									0.6	0.6	0.6	0.6	0.6	0.6
Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	mg/kg	0.5	3									1.2	1.2	1.2	1.2	1.2	1.2
PAHs - extended																	
2-methylnaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-methylcholanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
7,12-dimethylbenz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorinated Hydrocarbons																	
1,1,1,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorotoluene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SVOCs																	
1,2,3,4-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3,5-Tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4,5-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitroaniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3,3-Dichlorobenzidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-(dimethylamino) azobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-bromophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy) methane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl) ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,j)acridine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenzofuran	ng/kg	500,000										<500,000	<500,000	<500,000	<500,000	<500,000	<500,000
Diphenylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorocyclopentadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-butylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosopiperidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOCs																	

Site											P					
Location Code											GHD_Applecross_HA01					
Sample Date											01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
Field ID											GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.8
Sample Type											Primary	Primary	Primary	Primary	Primary	Primary
Depth (m bgl)											0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.8 - 1
Lab Report											1215966	1215966	1215966	1215966	1215966	1215966
Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=1m, <2m	*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
1,1-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dibromoethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-butanone (MEK)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-methyl-2-pentanone (MIBK)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-dichloropropene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-dichloropropene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Rec C Soil

Statistics
* A Non Detect Multiplier of 0.5 has been applied.

Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=1m, <2m	*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
Site												P					
Location Code												GHD_Applecross_HA01					
Sample Date												01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
Field ID												GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA03_0.1
Sample Type												Primary	Primary	Primary	Primary	Primary	Primary
Depth (m bgl)												0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.1 - 0.2
Lab Report												1215966	1215966	1215966	1215966	1215966	1215966
Inorganics																	
% Moisture_	%	1										7.4	7.2	13	24	4.2	6.5
Metals																	
Arsenic	mg/kg	2	300				100					<2	<2	<2	<2	<2	<2
Cadmium	mg/kg	0.1	90									<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium (III+VI)	mg/kg	1					190					4.3	6.0	2.5	1.6	6.5	5.3
Copper	mg/kg	1	17,000				60					5.1	3.3	1.8	1.2	3.1	3.2
Lead	mg/kg	1	600				1,100					39	68	17	6.4	9.4	8.9
Mercury	mg/kg	0.02	80									0.02	0.03	0.03	0.04	0.02	0.02
Nickel	mg/kg	1	1,200				30					1.2	1.7	<1	<1	1.0	<1
Zinc	mg/kg	5	30,000				70					26	46	16	8.0	17	20
BTEXN																	
Naphthalene (value used in F2 calc)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	mg/kg	0.1		120	1,100	77		NL	NL	*50*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1		18,000	120,000	999,999		NL	NL	*85*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1		5,300	85,000	999,999		NL	NL	*70*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (o)	mg/kg	0.1										<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (m & p)	mg/kg	0.2										<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylene Total	mg/kg	0.3		15,000	130,000	999,999		NL	NL	*105*		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
TRH - NEPM 2013																	
F1 (C6-C10 minus BTEX)	mg/kg	20		5,100	82,000	999,999		NL	NL	*180*		<20	<20	<20	<20	<20	<20
C6-C10 Fraction	mg/kg	20									700	<20	<20	<20	<20	<20	<20
F2 (>C10-C16 minus Naphthalene)	mg/kg	50		3,800	62,000	999,999		NL	NL			<50	<50	<50	<50	<50	<50
>C10-C16 Fraction	mg/kg	50								*120*	1,000	<50	<50	<50	<50	<50	<50
F3 (>C16-C34 Fraction)	mg/kg	100		5,300	85,000					*300*	2,500	<100	<100	<100	<100	<100	<100
F4 (>C34-C40 Fraction)	mg/kg	100		7,400	120,000					*2,800*	10,000	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of Total)	mg/kg	100										<100	<100	<100	<100	<100	<100
TRH - NEPM 1999																	
C6-C9 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C10-C14 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C15-C28 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C29-C36 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C10-C36 (Sum of Total)	mg/kg	50										<50	<50	<50	<50	<50	<50
PAHs - standard 16																	
Acenaphthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5								*0.7*		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo[b+j]fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5		1,900	29,000	999,999	170	NL	NL			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PAHs (Sum of total) - Lab calc	mg/kg	0.5	300									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	mg/kg	0.5	3									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	mg/kg	0.5	3									0.6	0.6	0.6	0.6	0.6	0.6
Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	mg/kg	0.5	3									1.2	1.2	1.2	1.2	1.2	1.2
PAHs - extended																	
2-methylnaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-methylcholanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
7,12-dimethylbenz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorinated Hydrocarbons																	
1,1,1,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorotoluene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SVOCs																	
1,2,3,4-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3,5-Tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4,5-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitroaniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3,3-Dichlorobenzidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-(dimethylamino) azobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-bromophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy) methane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl) ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,j)acridine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenzofuran	ng/kg	500,000										<500,000	<500,000	<500,000	<500,000	<500,000	<500,000
Diphenylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorocyclopentadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-butylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosopiperidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOCs																	

Site											P					
Location Code											GHD_Applecross_HA01					
Sample Date											01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
Field ID											GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA03_0.1
Sample Type											Primary	Primary	Primary	Primary	Primary	Primary
Depth (m bgl)											0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.1 - 0.2
Lab Report											1215966	1215966	1215966	1215966	1215966	1215966
Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=1m, <2m	*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
1,1-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dibromoethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-butanone (MEK)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-methyl-2-pentanone (MIBK)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-dichloropropene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-dichloropropene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Rec C Soil

Statistics
* A Non Detect Multiplier of 0.5 has been applied.

Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=1m, <2m	*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
Site												P					
Location Code												GHD_Applecross_HA01					GHD_Applecross_HA03
Sample Date												01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
Field ID												GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA03_0.2
Sample Type												Primary	Primary	Primary	Primary	Primary	Primary
Depth (m bgl)												0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.2 - 0.5
Lab Report												1215966	1215966	1215966	1215966	1215966	1215966
Inorganics																	
% Moisture_	%	1										7.4	7.2	13	24	4.2	6.2
Metals																	
Arsenic	mg/kg	2	300				100					<2	<2	<2	<2	<2	2.4
Cadmium	mg/kg	0.1	90									<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium (III+VI)	mg/kg	1					190					4.3	6.0	2.5	1.6	6.5	11
Copper	mg/kg	1	17,000				60					5.1	3.3	1.8	1.2	3.1	<1
Lead	mg/kg	1	600				1,100					39	68	17	6.4	9.4	3.0
Mercury	mg/kg	0.02	80									0.02	0.03	0.03	0.04	0.02	0.03
Nickel	mg/kg	1	1,200				30					1.2	1.7	<1	<1	1.0	<1
Zinc	mg/kg	5	30,000				70					26	46	16	8.0	17	6.9
BTEXN																	
Naphthalene (value used in F2 calc)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	mg/kg	0.1		120	1,100	77		NL	NL	*50*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1		18,000	120,000	999,999		NL	NL	*85*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1		5,300	85,000	999,999		NL	NL	*70*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (o)	mg/kg	0.1										<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (m & p)	mg/kg	0.2										<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylene Total	mg/kg	0.3		15,000	130,000	999,999		NL	NL	*105*		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
TRH - NEPM 2013																	
F1 (C6-C10 minus BTEX)	mg/kg	20		5,100	82,000	999,999		NL	NL	*180*		<20	<20	<20	<20	<20	<20
C6-C10 Fraction	mg/kg	20									700	<20	<20	<20	<20	<20	<20
F2 (>C10-C16 minus Naphthalene)	mg/kg	50		3,800	62,000	999,999		NL	NL			<50	<50	<50	<50	<50	<50
>C10-C16 Fraction	mg/kg	50								*120*	1,000	<50	<50	<50	<50	<50	<50
F3 (>C16-C34 Fraction)	mg/kg	100		5,300	85,000					*300*	2,500	<100	<100	<100	<100	<100	<100
F4 (>C34-C40 Fraction)	mg/kg	100		7,400	120,000					*2,800*	10,000	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of Total)	mg/kg	100										<100	<100	<100	<100	<100	<100
TRH - NEPM 1999																	
C6-C9 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C10-C14 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C15-C28 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C29-C36 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C10-C36 (Sum of Total)	mg/kg	50										<50	<50	<50	<50	<50	<50
PAHs - standard 16																	
Acenaphthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5								*0.7*		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo[b+j]fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	1.8
Dibenz(a,h)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5		1,900	29,000	999,999	170	NL	NL			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PAHs (Sum of total) - Lab calc	mg/kg	0.5	300									<0.5	<0.5	<0.5	<0.5	<0.5	1.8
Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	mg/kg	0.5	3									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	mg/kg	0.5	3									0.6	0.6	0.6	0.6	0.6	0.6
Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	mg/kg	0.5	3									1.2	1.2	1.2	1.2	1.2	1.2
PAHs - extended																	
2-methylnaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-methylcholanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
7,12-dimethylbenz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorinated Hydrocarbons																	
1,1,1,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorotoluene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SVOCs																	
1,2,3,4-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3,5-Tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4,5-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitroaniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3,3-Dichlorobenzidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-(dimethylamino) azobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-bromophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy) methane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl) ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,j)acridine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenzofuran	ng/kg	500,000										<500,000	<500,000	<500,000	<500,000	<500,000	<500,000
Diphenylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorocyclopentadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-butylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosopiperidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOCs																	

Site											P					
Location Code											GHD_Applecross_HA01				GHD_Applecross_HA03	
Sample Date											01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
Field ID											GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA03_0.2
Sample Type											Primary	Primary	Primary	Primary	Primary	Primary
Depth (m bgl)											0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.2 - 0.5
Lab Report											1215966	1215966	1215966	1215966	1215966	1215966
Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand		*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
								>=0m, <1m	>=1m, <2m								
1,1-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dibromoethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-butanone (MEK)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-methyl-2-pentanone (MIBK)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-dichloropropene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-dichloropropene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Rec C Soil

Statistics
* A Non Detect Multiplier of 0.5 has been applied.

Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand >=1m, <2m	*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil						
Site												P					
Location Code												GHD_Applecross_HA01					
Sample Date												01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
Field ID												GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA03_0.5
Sample Type												Primary	Primary	Primary	Primary	Primary	Primary
Depth (m bgl)												0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.5
Lab Report												1215966	1215966	1215966	1215966	1215966	1215966
Inorganics																	
% Moisture_	%	1										7.4	7.2	13	24	4.2	10
Metals																	
Arsenic	mg/kg	2	300				100					<2	<2	<2	<2	<2	2.2
Cadmium	mg/kg	0.1	90									<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium (III+VI)	mg/kg	1					190					4.3	6.0	2.5	1.6	6.5	11
Copper	mg/kg	1	17,000				60					5.1	3.3	1.8	1.2	3.1	<1
Lead	mg/kg	1	600				1,100					39	68	17	6.4	9.4	3.7
Mercury	mg/kg	0.02	80									0.02	0.03	0.03	0.04	0.02	0.03
Nickel	mg/kg	1	1,200				30					1.2	1.7	<1	<1	1.0	2.1
Zinc	mg/kg	5	30,000				70					26	46	16	8.0	17	<5
BTEXN																	
Naphthalene (value used in F2 calc)	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	mg/kg	0.1		120	1,100	77		NL	NL	*50*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1		18,000	120,000	999,999		NL	NL	*85*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1		5,300	85,000	999,999		NL	NL	*70*		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (o)	mg/kg	0.1										<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (m & p)	mg/kg	0.2										<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylene Total	mg/kg	0.3		15,000	130,000	999,999		NL	NL	*105*		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
TRH - NEPM 2013																	
F1 (C6-C10 minus BTEX)	mg/kg	20		5,100	82,000	999,999		NL	NL	*180*		<20	<20	<20	<20	<20	<20
C6-C10 Fraction	mg/kg	20									700	<20	<20	<20	<20	<20	<20
F2 (>C10-C16 minus Naphthalene)	mg/kg	50		3,800	62,000	999,999		NL	NL			<50	<50	<50	<50	<50	<50
>C10-C16 Fraction	mg/kg	50								*120*	1,000	<50	<50	<50	<50	<50	<50
F3 (>C16-C34 Fraction)	mg/kg	100		5,300	85,000					*300*	2,500	<100	<100	<100	<100	<100	<100
F4 (>C34-C40 Fraction)	mg/kg	100		7,400	120,000					*2,800*	10,000	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of Total)	mg/kg	100										<100	<100	<100	<100	<100	<100
TRH - NEPM 1999																	
C6-C9 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C10-C14 Fraction	mg/kg	20										<20	<20	<20	<20	<20	<20
C15-C28 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C29-C36 Fraction	mg/kg	50										<50	<50	<50	<50	<50	<50
C10-C36 (Sum of Total)	mg/kg	50										<50	<50	<50	<50	<50	<50
PAHs - standard 16																	
Acenaphthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5								*0.7*		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo[b+j]fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5		1,900	29,000	999,999	170	NL	NL			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PAHs (Sum of total) - Lab calc	mg/kg	0.5	300									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	mg/kg	0.5	3									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	mg/kg	0.5	3									0.6	0.6	0.6	0.6	0.6	0.6
Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	mg/kg	0.5	3									1.2	1.2	1.2	1.2	1.2	1.2
PAHs - extended																	
2-methylnaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-methylcholanthrene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
7,12-dimethylbenz(a)anthracene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorinated Hydrocarbons																	
1,1,1,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorotoluene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-dichloroethene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SVOCs																	
1,2,3,4-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3,5-Tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4,5-tetrachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trichlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Chloronaphthalene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-naphthylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitroaniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3,3-Dichlorobenzidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-(dimethylamino) azobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-bromophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorophenyl phenyl ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aniline	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzyl chloride	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy) methane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl) ether	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,j)acridine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenzofuran	ng/kg	500,000										<500,000	<500,000	<500,000	<500,000	<500,000	<500,000
Diphenylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorocyclopentadiene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachloroethane	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-butylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosopiperidine	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorobenzene	mg/kg	0.5										<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOCs																	

Analyte	Units	LOR	NEPM 2013 Table 1A(1) HILs Rec C Soil	CRC CARE 2011 Soil Direct Contact HSL-C Recreational / Open Space	CRC CARE 2011 Soil Direct Contact Intrusive Works	CRC CARE 2011 Soil HSL Vap.Int Intrusive Works,0 to <2m,Sand	NEPM 2013 EIL-Urban Residential-Public Open Space (0-2 m bgl)	NEPM 2013 Table 1A(3) HSL C Rec Soil for Vapour Intrusion, Sand		*NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2 m bgl)*	NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil
								>=0m, <1m	>=1m, <2m		
Site											
Location Code											
Sample Date											
Field ID											
Sample Type											
Depth (m bgl)											
Lab Report											
1,1-dichloroethane	mg/kg	0.5									
1,2,3-trichlorobenzene	mg/kg	0.5									
1,2,3-trichloropropane	mg/kg	0.5									
1,2-dibromoethane	mg/kg	0.5									
1,3-dichlorobenzene	mg/kg	0.5									
2-butanone (MEK)	mg/kg	0.5									
4-methyl-2-pentanone (MIBK)	mg/kg	0.5									
Acetone	mg/kg	0.5									
Allyl chloride	mg/kg	0.5									
Bromodichloromethane	mg/kg	0.5									
Bromoform	mg/kg	0.5									
Chlorodibromomethane	mg/kg	0.5									
Chloroethane	mg/kg	0.5									
cis-1,3-dichloropropene	mg/kg	0.5									
Dibromomethane	mg/kg	0.5									
Iodomethane	mg/kg	0.5									
Trichloroethene	mg/kg	0.5									
Tetrachloroethene	mg/kg	0.5									
trans-1,3-dichloropropene	mg/kg	0.5									
trans-1,2-dichloroethene	mg/kg	0.5									
Trichlorofluoromethane	mg/kg	0.5									

Site												P	
Location Code													
Sample Date													
Field ID													
Sample Type													
Depth (m bgl)													
Lab Report													
1,1-dichloroethane	mg/kg	0.5											
1,2,3-trichlorobenzene	mg/kg	0.5											
1,2,3-trichloropropane	mg/kg	0.5											
1,2-dibromoethane	mg/kg	0.5											
1,3-dichlorobenzene	mg/kg	0.5											
2-butanone (MEK)	mg/kg	0.5											
4-methyl-2-pentanone (MIBK)	mg/kg	0.5											
Acetone	mg/kg	0.5											
Allyl chloride	mg/kg	0.5											
Bromodichloromethane	mg/kg	0.5											
Bromoform	mg/kg	0.5											
Chlorodibromomethane	mg/kg	0.5											
Chloroethane	mg/kg	0.5											
cis-1,3-dichloropropene	mg/kg	0.5											
Dibromomethane	mg/kg	0.5											
Iodomethane	mg/kg	0.5											
Trichloroethene	mg/kg	0.5											
Tetrachloroethene	mg/kg	0.5											
trans-1,3-dichloropropene	mg/kg	0.5											
trans-1,2-dichloroethene	mg/kg	0.5											
Trichlorofluoromethane	mg/kg	0.5											

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Rec C Soil

Statistics
* A Non Detect Multiplier of 0.5 has been applied.

							Site	PTA Swan River Ferry Expansion - Applecross Site							
							Location ID	GHD_Applecross_HA01				GHD_Applecross_HA02			
							Sample Date	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	
							Field ID	GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.4	GHD_APPLECROSS_HA02_0.6	
							Sample Type	Primary	Primary	Primary	Primary	Primary	Primary	Primary	
							Depth (m bgl)	0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.4 - 0.6	0.6 - 0.8	
							Lab Report	1215966	1215966	1215966	1215966	1215966	1215966	1215966	
Analyte	Units	LOR	WA DER 1996 (2019) Landfill Uncontaminated	WA DER 1996 (2019) Landfill CT Class 1	WA DER 1996 (2019) Landfill CT Class 2	WA DER 1996 (2019) Landfill CT Class 3	WA DER 1996 (2019) Landfill CT Class 4								
Inorganics															
% Moisture_	%	1						7.4	7.2	13	24	4.2	4.5	3.2	
Metals															
Arsenic	mg/kg	2	**100**	14	14	140	1,400	<2	<2	<2	<2	<2	<2	<2	
Cadmium	mg/kg	0.1	**1**	0.4	0.4	4	40	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Chromium (III+VI)	mg/kg	1						4.3	6.0	2.5	1.6	6.5	6.9	1.5	
Copper	mg/kg	1	**50**	50,000	50,000	100,000	200,000	5.1	3.3	1.8	1.2	3.1	2.7	<1	
Lead	mg/kg	1	**300**	2	2	20	200	39	68	17	6.4	9.4	15	1.9	
Mercury	mg/kg	0.02	**0.5**	0.2	0.2	2	20	0.02	0.03	0.03	0.04	0.02	0.03	<0.02	
Nickel	mg/kg	1	**10**	4	4	40	400	1.2	1.7	<1	<1	1.0	1.0	<1	
Zinc	mg/kg	5	**120**	50,000	50,000	100,000	200,000	26	46	16	8.0	17	19	<5	
BTEXN															
Naphthalene (value used in F2 calc)	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzene	mg/kg	0.1	**0.5**	0.2	0.2	2	20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Toluene	mg/kg	0.1	**85**	160	160	1,600	16,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Ethylbenzene	mg/kg	0.1	**55**	60	60	600	6,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Xylene (o)	mg/kg	0.1						<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Xylene (m & p)	mg/kg	0.2						<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Xylene Total	mg/kg	0.3	**40**	120	120	1,200	12,000	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
TRH - NEPM 2013															
F1 (C6-C10 minus BTEX)	mg/kg	20						<20	<20	<20	<20	<20	<20	<20	
C6-C10 Fraction	mg/kg	20	**45**					<20	<20	<20	<20	<20	<20	<20	
F2 (>C10-C16 minus Naphthalene)	mg/kg	50						<50	<50	<50	<50	<50	<50	<50	
>C10-C16 Fraction	mg/kg	50	**110**					<50	<50	<50	<50	<50	<50	<50	
F3 (>C16-C34 Fraction)	mg/kg	100	**300**					<100	<100	<100	<100	<100	<100	<100	
F4 (>C34-C40 Fraction)	mg/kg	100						<100	<100	<100	<100	<100	<100	<100	
>C10-C40 (Sum of Total)	mg/kg	100						<100	<100	<100	<100	<100	<100	<100	
TRH - NEPM 1999															
C6-C9 Fraction	mg/kg	20						<20	<20	<20	<20	<20	<20	<20	
C10-C14 Fraction	mg/kg	20						<20	<20	<20	<20	<20	<20	<20	
C15-C28 Fraction	mg/kg	50						<50	<50	<50	<50	<50	<50	<50	
C29-C36 Fraction	mg/kg	50						<50	<50	<50	<50	<50	<50	<50	
C10-C36 (Sum of Total)	mg/kg	50						<50	<50	<50	<50	<50	<50	<50	
PAHs - standard 16															
Acenaphthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Acenaphthylene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Benz(a)anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzo(a)pyrene	mg/kg	0.5	**1**					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzo[b+j]fluoranthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzo(k)fluoranthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzo(g,h,i)perylene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Chrysene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Dibenz(a,h)anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Fluoranthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Fluorene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Naphthalene	mg/kg	0.5	**3**					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Phenanthrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Pyrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
PAHs (Sum of total) - Lab calc	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	mg/kg	0.5						0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	mg/kg	0.5						1.2	1.2	1.2	1.2	1.2	1.2	1.2	
PAHs - extended															
2-methylnaphthalene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
3-methylcholanthrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
7,12-dimethylbenz(a)anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Chlorinated Hydrocarbons															
1,1,1,2-tetrachloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,1,1-trichloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,1,2,2-tetrachloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,1,2-trichloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,1-dichloroethene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2,4-trichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2-dichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2-dichloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2-dichloropropane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,3-dichloropropane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,4-dichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
2-chloronaphthalene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
4-chlorotoluene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Bromobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Bromochloromethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Carbon tetrachloride	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Chlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Chloroform	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Chloromethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
cis-1,2-dichloroethene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Methylene chloride	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Hexachlorobutadiene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Vinyl chloride	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
SVOCs															
1,2,3,4-tetrachlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2,3,5-Tetrachlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2,4,5-tetrachlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,3,5-Trichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1-Chloronaphthalene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1-naphthylamine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
2-naphthylamine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
2-nitroaniline	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
3,3-Dichlorobenzidine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
4-(dimethylamino) azobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
4-bromophenyl phenyl ether	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
4-chlorophenyl phenyl ether	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Aniline	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzyl chloride	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Bis(2-chloroethoxy) methane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Bis(2-chloroisopropyl) ether	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Dibenz(a,j)acridine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Dibenzofuran	mg/kg	500,000						<500,000	<500,000	<500,000	<500,000	<500,000	<500,000	<500,000	
Diphenylamine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	

							Site	PTA Swan River Ferry Expansion - Applecross Site						
							Location ID	GHD_Applecross_HA01				GHD_Applecross_HA02		
							Sample Date	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025	01 May 2025
							Field ID	GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25	GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.4	GHD_APPLECROSS_HA02_0.6
							Sample Type	Primary	Primary	Primary	Primary	Primary	Primary	Primary
							Depth (m bgl)	0.1 - 0.3	0.3 - 0.6	0.6 - 1.25	1.25 - 1.5	0.1 - 0.4	0.4 - 0.6	0.6 - 0.8
							Lab Report	1215966	1215966	1215966	1215966	1215966	1215966	1215966
Analyte	Units	LOR	**WA DER 1996 (2019) Landfill Uncontaminated**	WA DER 1996 (2019) Landfill CT Class 1	WA DER 1996 (2019) Landfill CT Class 2	WA DER 1996 (2019) Landfill CT Class 3	WA DER 1996 (2019) Landfill CT Class 4							
Hexachlorocyclopentadiene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-butylamine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosopiperidine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
VOCs														
1,1-dichloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichloropropane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dibromoethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-butanone (MEK)	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-methyl-2-pentanone (MIBK)	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-dichloropropene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-dichloropropene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Statistics
* A Non Detect Multiplier of 0.5 has been applied.

							Site				
							Location ID		GHD_Applecross_HA03		
							Sample Date	01 May 2025	01 May 2025	01 May 2025	01 May 2025
							Field ID	GHD_APPLECROSS_HA02_0.8	GHD_APPLECROSS_HA03_0.1	GHD_APPLECROSS_HA03_0.2	GHD_APPLECROSS_HA03_0.5
							Sample Type	Primary	Primary	Primary	Primary
							Depth (m bgl)	0.8 - 1	0.1 - 0.2	0.2 - 0.5	0.5
							Lab Report	1215966	1215966	1215966	1215966
Analyte	Units	LOR	**WA DER 1996 (2019) Landfill Uncontaminated**	WA DER 1996 (2019) Landfill CT Class 1	WA DER 1996 (2019) Landfill CT Class 2	WA DER 1996 (2019) Landfill CT Class 3	WA DER 1996 (2019) Landfill CT Class 4				
Inorganics											
% Moisture_	%	1						14	6.5	6.2	10
Metals											
Arsenic	mg/kg	2	**100**	14	14	140	1,400	<2	<2	2.4	2.2
Cadmium	mg/kg	0.1	**1**	0.4	0.4	4	40	<0.1	<0.1	<0.1	<0.1
Chromium (III+VI)	mg/kg	1						<1	5.3	11	11
Copper	mg/kg	1	**50**	50,000	50,000	100,000	200,000	<1	3.2	<1	<1
Lead	mg/kg	1	**300**	2	2	20	200	<1	8.9	3.0	3.7
Mercury	mg/kg	0.02	**0.5**	0.2	0.2	2	20	<0.02	0.02	0.03	0.03
Nickel	mg/kg	1	**10**	4	4	40	400	<1	<1	<1	2.1
Zinc	mg/kg	5	**120**	50,000	50,000	100,000	200,000	<5	20	6.9	<5
BTEXN											
Naphthalene (value used in F2 calc)	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Benzene	mg/kg	0.1	**0.5**	0.2	0.2	2	20	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	**85**	160	160	1,600	16,000	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	**55**	60	60	600	6,000	<0.1	<0.1	<0.1	<0.1
Xylene (o)	mg/kg	0.1						<0.1	<0.1	<0.1	<0.1
Xylene (m & p)	mg/kg	0.2						<0.2	<0.2	<0.2	<0.2
Xylene Total	mg/kg	0.3	**40**	120	120	1,200	12,000	<0.3	<0.3	<0.3	<0.3
TRH - NEPM 2013											
F1 (C6-C10 minus BTEX)	mg/kg	20						<20	<20	<20	<20
C6-C10 Fraction	mg/kg	20	**45**					<20	<20	<20	<20
F2 (>C10-C16 minus Naphthalene)	mg/kg	50						<50	<50	<50	<50
>C10-C16 Fraction	mg/kg	50	**110**					<50	<50	<50	<50
F3 (>C16-C34 Fraction)	mg/kg	100	**300**					<100	<100	<100	<100
F4 (>C34-C40 Fraction)	mg/kg	100						<100	<100	<100	<100
>C10-C40 (Sum of Total)	mg/kg	100						<100	<100	<100	<100
TRH - NEPM 1999											
C6-C9 Fraction	mg/kg	20						<20	<20	<20	<20
C10-C14 Fraction	mg/kg	20						<20	<20	<20	<20
C15-C28 Fraction	mg/kg	50						<50	<50	<50	<50
C29-C36 Fraction	mg/kg	50						<50	<50	<50	<50
C10-C36 (Sum of Total)	mg/kg	50						<50	<50	<50	<50
PAHs - standard 16											
Acenaphthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5	**1**					<0.5	<0.5	<0.5	<0.5
Benzo[b+j]fluoranthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5						<0.5	<0.5	1.8	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Fluorene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5	**3**					<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
PAHs (Sum of total) - Lab calc	mg/kg	0.5						<0.5	<0.5	1.8	<0.5
Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	mg/kg	0.5						0.6	0.6	0.6	0.6
Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	mg/kg	0.5						1.2	1.2	1.2	1.2
PAHs - extended											
2-methylnaphthalene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
3-methylcholanthrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
7,12-dimethylbenz(a)anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Chlorinated Hydrocarbons											
1,1,1,2-tetrachloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,1,1-trichloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,1-dichloroethene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,2,4-trichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,2-dichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,2-dichloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,2-dichloropropane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
2-chloronaphthalene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
4-chlorotoluene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Bromobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Bromochloromethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Chlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Chloroform	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Chloromethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
cis-1,2-dichloroethene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Methylene chloride	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Vinyl chloride	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
SVOCs											
1,2,3,4-tetrachlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,2,3,5-Tetrachlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,2,4,5-tetrachlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,3,5-Trichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1-Chloronaphthalene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1-naphthylamine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
2-naphthylamine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
2-nitroaniline	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
3,3-Dichlorobenzidine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
4-(dimethylamino) azobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
4-bromophenyl phenyl ether	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
4-chlorophenyl phenyl ether	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Aniline	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Benzyl chloride	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy) methane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Bis(2-chloroisopropyl) ether	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Dibenz(a,j)acridine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Dibenzofuran	ng/kg	500,000						<500,000	<500,000	<500,000	<500,000
Diphenylamine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5

							Site				
							Location ID		GHD_Applecross_HA03		
							Sample Date	01 May 2025	01 May 2025	01 May 2025	01 May 2025
							Field ID	GHD_APPLECROSS_HA02_0.8	GHD_APPLECROSS_HA03_0.1	GHD_APPLECROSS_HA03_0.2	GHD_APPLECROSS_HA03_0.5
							Sample Type	Primary	Primary	Primary	Primary
							Depth (m bgl)	0.8 - 1	0.1 - 0.2	0.2 - 0.5	0.5
							Lab Report	1215966	1215966	1215966	1215966
Analyte	Units	LOR	**WA DER 1996 (2019) Landfill Uncontaminated**	WA DER 1996 (2019) Landfill CT Class 1	WA DER 1996 (2019) Landfill CT Class 2	WA DER 1996 (2019) Landfill CT Class 3	WA DER 1996 (2019) Landfill CT Class 4				
Hexachlorocyclopentadiene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Hexachloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-butylamine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
N-nitrosopiperidine	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Pentachlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
VOCs											
1,1-dichloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,2,3-trichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,2,3-trichloropropane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,2-dibromoethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
2-butanone (MEK)	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
4-methyl-2-pentanone (MIBK)	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Acetone	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Bromoform	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Chloroethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
cis-1,3-dichloropropene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Dibromomethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Iodomethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Trichloroethene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
trans-1,3-dichloropropene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5

Statistics
* A Non Detect Multiplier of 0.5 has been applied.

Lab Report Number			1215966	1215966		1215966	EP2507168		1215966	1215966		1215966	EP2507168		
Field ID			GHD_ELLAM_ST_HA02_0.1	GHD_QC10		GHD_ELLAM_ST_HA02_0.1	GHD-QC14		GHD_ELLAM_ST_HA03_0.1	GHD_QC11		GHD_ELLAM_ST_HA03_0.1	GHD-QC15		
Location Code			GHD_Ellam_St_HA02	GHD_Ellam_St_HA02		GHD_Ellam_St_HA02	GHD_Ellam_St_HA02		GHD_Ellam_St_HA03	GHD_Ellam_St_HA03		GHD_Ellam_St_HA03	GHD_Ellam_St_HA03		
Matrix Type			Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		
Date			01 May 2025	01 May 2025		01 May 2025	01 May 2025		01 May 2025	01 May 2025		01 May 2025	01 May 2025		
Sample Type			Normal	Field_D	RPD	Normal	Interlab_D	RPD	Normal	Field_D	RPD	Normal	Interlab_D	RPD	
	Unit	EQL													
Inorganics															
% Moisture_	%	1	<1	1.2	18	<1	-	-	1.9	2.6	**31**	1.9	-	-	
Moisture (%)	%	1	-	-	-	-	1.0	-	-	-	-	-	2.1	-	
Metals															
Arsenic	mg/kg	2	<2	<2	0	<2	<5	0	<2	<2	0	<2	<5	0	
Cadmium	mg/kg	0.1	<0.1	<0.1	0	<0.1	<1	0	<0.1	<0.1	0	<0.1	<1	0	
Chromium (III+VI)	mg/kg	1	3.9	3.3	17	3.9	4	3	2.1	4.1	**65**	2.1	<2	5	
Copper	mg/kg	1	<1	1.1	10	<1	<5	0	1.6	2.6	**48**	1.6	<5	0	
Lead	mg/kg	1	4.6	4.0	14	4.6	<5	0	2.7	5.7	**71**	2.7	<5	0	
Mercury	mg/kg	0.02	<0.02	0.02	0	<0.02	<0.1	0	<0.02	0.03	**40**	<0.02	<0.1	0	
Nickel	mg/kg	1	<1	<1	0	<1	<2	0	<1	<1	0	<1	<2	0	
Zinc	mg/kg	5	16	8.7	**59**	16	7	**78**	8.6	14	**48**	8.6	8	7	
BTEXN															
Naphthalene (value used in F2 calc)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<1	0	<0.5	<0.5	0	<0.5	<1	0	
Benzene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.2	0	<0.1	<0.1	0	<0.1	<0.2	0	
Toluene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.5	0	
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.5	0	
Xylene (o)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.5	0	
Xylene (m & p)	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.5	0	
Xylene Total	mg/kg	0.3	<0.3	<0.3	0	<0.3	<0.5	0	<0.3	<0.3	0	<0.3	<0.5	0	
BTEX (Sum of Total) - Lab Calc	mg/kg	0.2	-	-	-	-	<0.2	-	-	-	-	-	<0.2	-	
TRH - NEPM 2013															
F1 (C6-C10 minus BTEX)	mg/kg	10	<20	<20	0	<20	<10	0	<20	<20	0	<20	<10	0	
C6-C10 Fraction	mg/kg	10	<20	<20	0	<20	<10	0	<20	<20	0	<20	<10	0	
F2 (>C10-C16 minus Naphthalene)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	
>C10-C16 Fraction	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	
F3 (>C16-C34 Fraction)	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	
F4 (>C34-C40 Fraction)	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	
>C10-C40 (Sum of Total)	mg/kg	50	<100	<100	0	<100	<50	0	<100	<100	0	<100	<50	0	
TRH - NEPM 1999															
C6-C9 Fraction	mg/kg	10	<20	<20	0	<20	<10	0	<20	<20	0	<20	<10	0	
C10-C14 Fraction	mg/kg	20	<20	<20	0	<20	<50	0	<20	<20	0	<20	<50	0	
C15-C28 Fraction	mg/kg	50	<50	<50	0	<50	<100	0	<50	<50	0	<50	<100	0	
C29-C36 Fraction	mg/kg	50	<50	<50	0	<50	<100	0	<50	<50	0	<50	<100	0	
C10-C36 (Sum of Total)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	
PAHs - standard 16															
Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Benzo[b+j]fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Naphthalene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
PAHs (Sum of total) - Lab calc	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	mg/kg	0.5	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	
Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	mg/kg	0.5	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	
PAHs - extended															
2-methylnaphthalene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
3-methylcholanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
7,12-dimethylbenz(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Benzo(b+j+k)fluoranthene	mg/kg	1	-	-	-	-	<1	-	-	-	-	-	<1	-	
Chlorinated Hydrocarbons															
1,1,1,2-tetrachloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
1,1,1-trichloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
1,1,2,2-tetrachloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
1,1,2-trichloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
1,1-dichloroethene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
1,1-dichloropropene	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	
1,2,4-trichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
1,2-dibromo-3-chloropropane	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	
1,2-dichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
1,2-dichloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
1,2-dichloropropane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
1,3-dichloropropane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
1,4-dichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
2,2-dichloropropane	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	
2-chloronaphthalene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
2-chlorotoluene	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	
4-chlorotoluene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Bromobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Bromochloromethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	
Carbon tetrachloride	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Chlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Chloroform	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Chloromethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<5	0	<0.5	<0.5	0	<0.5	<5	0	
cis-1,2-dichloroethene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Methylene chloride	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	
Hexachlorobutadiene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
Vinyl chloride	mg/kg	0.5	<0.5	<0.5	0	<0.5	<5	0	<0.5	<0.5	0	<0.5	<5	0	
SVOCs															
1,2,3,4-tetrachlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	
1,2,3,5-Tetrachlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	
1,2,4,5-tetrachlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	
1,3,5-Trichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	
1-Chloronaphthalene	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	
1-naphthylamine	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
2-(acetylamino) fluorene	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	
2-naphthylamine	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	
2-nitroaniline	mg/kg	0.5	<0.5	<0.5	0	<0.5	<1.0	0	<0.5	<0.5	0	<0.5	<1.0	0	
3,3-Dichlorobenzidine	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
3-nitroaniline	mg/kg	1	-	-	-	-	<1.0	-	-	-	-	-	<1.0	-	
4-(dimethylamino) azobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
4-bromophenyl phenyl ether	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	
4-chloroaniline	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-	

Lab Report Number			1215966	1215966		1215966	EP2507168		1215966	1215966		1215966	EP2507168	
Field ID			GHD_ELLAM_ST_HA02_0.1	GHD_QC10		GHD_ELLAM_ST_HA02_0.1	GHD-QC14		GHD_ELLAM_ST_HA03_0.1	GHD_QC11		GHD_ELLAM_ST_HA03_0.1	GHD-QC15	
Location Code			GHD_Ellam_St_HA02	GHD_Ellam_St_HA02		GHD_Ellam_St_HA02	GHD_Ellam_St_HA02		GHD_Ellam_St_HA03	GHD_Ellam_St_HA03		GHD_Ellam_St_HA03	GHD_Ellam_St_HA03	
Matrix Type			Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil	
Date			01 May 2025	01 May 2025		01 May 2025	01 May 2025		01 May 2025	01 May 2025		01 May 2025	01 May 2025	
Sample Type			Normal	Field_D	RPD	Normal	Interlab_D	RPD	Normal	Field_D	RPD	Normal	Interlab_D	RPD
	Unit	EQL												
4-chlorophenyl phenyl ether	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
4-nitroaniline	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
4-Nitroquinoline-N-oxide	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
5-nitro-o-toluidine	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
Aniline	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Azobenzene	mg/kg	1	-	-	-	-	<1	-	-	-	-	-	<1	-
Benzyl chloride	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-
Bis(2-chloroethoxy) methane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Bis(2-chloroethyl)ether	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
Bis(2-chloroisopropyl) ether	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-
Carbazole	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
Chlorobenzilate	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
Dibenz(a,j)acridine	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-
Dibenzofuran	ng/kg	500,000	<500,000	<500,000	0	<500,000	<500,000	0	<500,000	<500,000	0	<500,000	<500,000	0
Diphenylamine	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-
Hexachlorocyclopentadiene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<2.5	0	<0.5	<0.5	0	<0.5	<2.5	0
Hexachloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Hexachloropropene	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
Methapyrilene	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
N-nitrosodiethylamine	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
N-nitrosodi-n-butylamine	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
N-nitrosodi-n-propylamine	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
N-Nitrosomethylethylamine	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
N-nitrosomorpholine	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
N-nitrosopiperidine	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
N-nitrosopyrrolidine	mg/kg	1	-	-	-	-	<1.0	-	-	-	-	-	<1.0	-
Pentachlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Phenacetin	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
VOCs														
1,1-dichloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,2,3-trichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,2,3-trichloropropane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,2-dibromoethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,3-dichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
2-butanone (MEK)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<5	0	<0.5	<0.5	0	<0.5	<5	0
4-methyl-2-pentanone (MIBK)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<5	0	<0.5	<0.5	0	<0.5	<5	0
Acetone	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-
Allyl chloride	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-
Bromodichloromethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Bromoform	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Chlorodibromomethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Chloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<5	0	<0.5	<0.5	0	<0.5	<5	0
cis-1,3-dichloropropene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
cis-1,4-Dichloro-2-butene	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
Dibromomethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Iodomethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Pentachloroethane	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
Trichloroethene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Tetrachloroethene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
trans-1,3-dichloropropene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
trans-1,2-dichloroethene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
trans-1,4-Dichloro-2-butene	mg/kg	0.5	-	-	-	-	<0.5	-	-	-	-	-	<0.5	-
Trichlorofluoromethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<5	0	<0.5	<0.5	0	<0.5	<5	0

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 30 (1 - 10 x EQL); 30 (10 - 30 x EQL); 30 (> 30 x EQL))**
*****Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory**

Lab Report Number			1215966	1215966	1215966	1215966
Field ID			GHD-QC06	GHD-QC07	GHD-QC08	GHD-QC09
Matrix Type			Water	Water	Water	Water
Date			01 May 2025	01 May 2025	02 May 2025	02 May 2025
Sample Type			Field blank	Rinsate blank	Field blank	Rinsate blank
	Unit	EQL				
Metals						
Arsenic	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium (III+VI)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
Copper	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
Lead	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
Zinc	mg/L	0.005	<0.005	<0.005	<0.005	<0.005
BTEXN						
Naphthalene (value used in F2 calc)	µg/L	1	<1	<1	<1	<1
Benzene	µg/L	1	<1	<1	<1	<1
Toluene	µg/L	1	<1	<1	<1	<1
Ethylbenzene	µg/L	1	<1	<1	<1	<1
Xylene (o)	µg/L	1	<1	<1	<1	<1
Xylene (m & p)	µg/L	2	<2	<2	<2	<2
Xylene Total	µg/L	3	<3	<3	<3	<3
TRH - NEPM 2013						
F1 (C6-C10 minus BTEX)	µg/L	20	<20	<20	<20	<20
C6-C10 Fraction	µg/L	20	<20	<20	<20	<20
F2 (>C10-C16 minus Naphthalene)	µg/L	20	<20	<20	<20	<20
>C10-C16 Fraction	µg/L	20	<20	<20	<20	<20
F3 (>C16-C34 Fraction)	µg/L	50	<50	<50	<50	<50
F4 (>C34-C40 Fraction)	µg/L	50	<50	<50	<50	<50
>C10-C40 (Sum of Total)	µg/L	50	<50	<50	<50	<50
TRH - NEPM 1999						
C6-C9 Fraction	µg/L	20	<20	<20	<20	<20
C10-C14 Fraction	µg/L	20	<20	<20	<20	<20
C15-C28 Fraction	µg/L	40	<40	<40	<40	<40
C29-C36 Fraction	µg/L	40	<40	<40	<40	<40
C10-C36 (Sum of Total)	µg/L	40	<40	<40	<40	<40
PAHs - standard 16						
Acenaphthene	µg/L	1	<1	<1	<1	<1
Acenaphthylene	µg/L	1	<1	<1	<1	<1
Anthracene	µg/L	1	<1	<1	<1	<1
Benz(a)anthracene	µg/L	1	<1	<1	<1	<1
Benzo(a)pyrene	µg/L	1	<1	<1	<1	<1
Benzo[b+j]fluoranthene	µg/L	1	<1	<1	<1	<1
Benzo(k)fluoranthene	µg/L	1	<1	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	1	<1	<1	<1	<1
Chrysene	µg/L	1	<1	<1	<1	<1
Dibenz(a,h)anthracene	µg/L	1	<1	<1	<1	<1
Fluoranthene	µg/L	1	<1	<1	<1	<1
Fluorene	µg/L	1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	1	<1	<1	<1	<1
Naphthalene	µg/L	1	<1	<1	<1	<1
Phenanthrene	µg/L	1	<1	<1	<1	<1
Pyrene	µg/L	1	<1	<1	<1	<1
PAHs (Sum of total) - Lab calc	µg/L	1	<1	<1	<1	<1
Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	µg/L	1	<1	<1	<1	<1
PAHs - extended						
2-methylnaphthalene	µg/L	5	<5	<5	<5	<5
3-methylcholanthrene	µg/L	5	<5	<5	<5	<5
7,12-dimethylbenz(a)anthracene	µg/L	5	<5	<5	<5	<5
Chlorinated Hydrocarbons						
1,1,1,2-tetrachloroethane	µg/L	1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	1	<1	<1	<1	<1
1,1-dichloroethene	µg/L	1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	5	<5	<5	<5	<5
1,2-dichlorobenzene	µg/L	1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	1	<1	<1	<1	<1
2-chloronaphthalene	µg/L	5	<5	<5	<5	<5
4-chlorotoluene	µg/L	1	<1	<1	<1	<1
Bromobenzene	µg/L	1	<1	<1	<1	<1
Bromochloromethane	µg/L	1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	1	<1	<1	<1	<1
Chlorobenzene	µg/L	1	<1	<1	<1	<1
Chloroform	µg/L	5	<5	<5	<5	<5
Chloromethane	µg/L	5	<5	<5	<5	<5
cis-1,2-dichloroethene	µg/L	1	<1	<1	<1	<1
Methylene chloride	µg/L	5	<5	<5	<5	<5
Hexachlorobutadiene	µg/L	5	<5	<5	<5	<5
Vinyl chloride	µg/L	5	<5	<5	<5	<5
SVOCs						
1,2,3,4-tetrachlorobenzene	µg/L	5	<5	<5	<5	<5
1,2,3,5-Tetrachlorobenzene	µg/L	5	<5	<5	<5	<5
1,2,4,5-tetrachlorobenzene	µg/L	5	<5	<5	<5	<5
1,3,5-Trichlorobenzene	µg/L	5	<5	<5	<5	<5
1-Chloronaphthalene	µg/L	5	<5	<5	<5	<5
1-naphthylamine	µg/L	5	<5	<5	<5	<5
2-naphthylamine	µg/L	5	<5	<5	<5	<5
2-nitroaniline	µg/L	5	<5	<5	<5	<5
3,3-Dichlorobenzidine	µg/L	5	<5	<5	<5	<5
4-(dimethylamino) azobenzene	µg/L	5	<5	<5	<5	<5
4-bromophenyl phenyl ether	µg/L	5	<5	<5	<5	<5
4-chlorophenyl phenyl ether	µg/L	5	<5	<5	<5	<5
Aniline	µg/L	5	<5	<5	<5	<5
Benzyl chloride	µg/L	5	<5	<5	<5	<5
Bis(2-chloroethoxy) methane	µg/L	5	<5	<5	<5	<5
Bis(2-chloroisopropyl) ether	µg/L	5	<5	<5	<5	<5
Dibenz(a,j)acridine	µg/L	5	<5	<5	<5	<5
Dibenzofuran	µg/L	5	<5	<5	<5	<5
Diphenylamine	µg/L	5	<5	<5	<5	<5
Hexachlorocyclopentadiene	µg/L	5	<5	<5	<5	<5
Hexachloroethane	µg/L	5	<5	<5	<5	<5
N-nitrosodi-n-butylamine	µg/L	5	<5	<5	<5	<5
N-nitrosodi-n-propylamine	µg/L	5	<5	<5	<5	<5
N-nitrosopiperidine	µg/L	5	<5	<5	<5	<5
Pentachlorobenzene	µg/L	5	<5	<5	<5	<5
VOCs						
1,1-dichloroethane	µg/L	1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	5	<5	<5	<5	<5
1,2,3-trichloropropane	µg/L	1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	1	<1	<1	<1	<1
2-butanone (MEK)	µg/L	5	<5	<5	<5	<5
4-methyl-2-pentanone (MIBK)	µg/L	5	<5	<5	<5	<5
Acetone	µg/L	5	<5	<5	<5	<5
Allyl chloride	µg/L	1	<1	<1	<1	<1
Bromodichloromethane	µg/L	1	<1	<1	<1	<1
Bromoform	µg/L	1	<1	<1	<1	<1
Chlorodibromomethane	µg/L	1	<1	<1	<1	<1
Chloroethane	µg/L	5	<5	<5	<5	<5
cis-1,3-dichloropropene	µg/L	1	<1	<1	<1	<1

Lab Report Number			1215966	1215966	1215966	1215966
Field ID			GHD-QC06	GHD-QC07	GHD-QC08	GHD-QC09
Matrix Type			Water	Water	Water	Water
Date			01 May 2025	01 May 2025	02 May 2025	02 May 2025
Sample Type			Field blank	Rinsate blank	Field blank	Rinsate blank
Dibromomethane	µg/L	1	<1	<1	<1	<1
Iodomethane	µg/L	1	<1	<1	<1	<1
Trichloroethene	µg/L	1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	1	<1	<1	<1	<1
trans-1,2-dichloroethene	µg/L	1	<1	<1	<1	<1
Trichlorofluoromethane	µg/L	5	<5	<5	<5	<5

Lab Report Number	1215966
Field ID	QC13
Matrix Type	Soil
Date	05 May 2025
Sample Type	Transport Blank

	Unit	EQL	
Inorganics			
% Moisture_	%	1	**6.3**
BTEXN			
Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
Xylene Total	mg/kg	0.2	<0.2
Chlorinated Hydrocarbons			
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1
1,1,1-trichloroethane	mg/kg	0.2	<0.2
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1
1,1-dichloroethene	mg/kg	0.2	<0.2
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1
1,2-dichlorobenzene	mg/kg	0.1	<0.1
1,2-dichloroethane	mg/kg	0.1	<0.1
1,4-dichlorobenzene	mg/kg	0.1	<0.1
Carbon tetrachloride	mg/kg	0.1	<0.1
Chlorobenzene	mg/kg	0.1	<0.1
cis-1,2-dichloroethene	mg/kg	0.1	<0.1
Methylene chloride	mg/kg	10	<10
Hexachlorobutadiene	mg/kg	0.1	<0.1
Vinyl chloride	mg/kg	0.2	<0.2
SVOCs			
1,3,5-Trichlorobenzene	mg/kg	0.1	<0.1
VOCs			
1,1-dichloroethane	mg/kg	0.2	<0.2
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1
1,3-dichlorobenzene	mg/kg	0.1	<0.1
MTBE	mg/kg	0.1	<0.1
Trichloroethene	mg/kg	0.1	<0.1
Tetrachloroethene	mg/kg	0.1	<0.1
trans-1,2-dichloroethene	mg/kg	0.2	<0.2

Appendix E

Certificate of title

Paper Size ISO A4

0 10 20 30 40

Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50

N

GHD

Public Transport Authority of Western Australia
Swan River Ferry Expansion
PSI & Swan River WQ Monitoring

Project No. **12658388**
Revision No. **A**
Date **15/04/2025**

Applecross Site

FIGURE 2

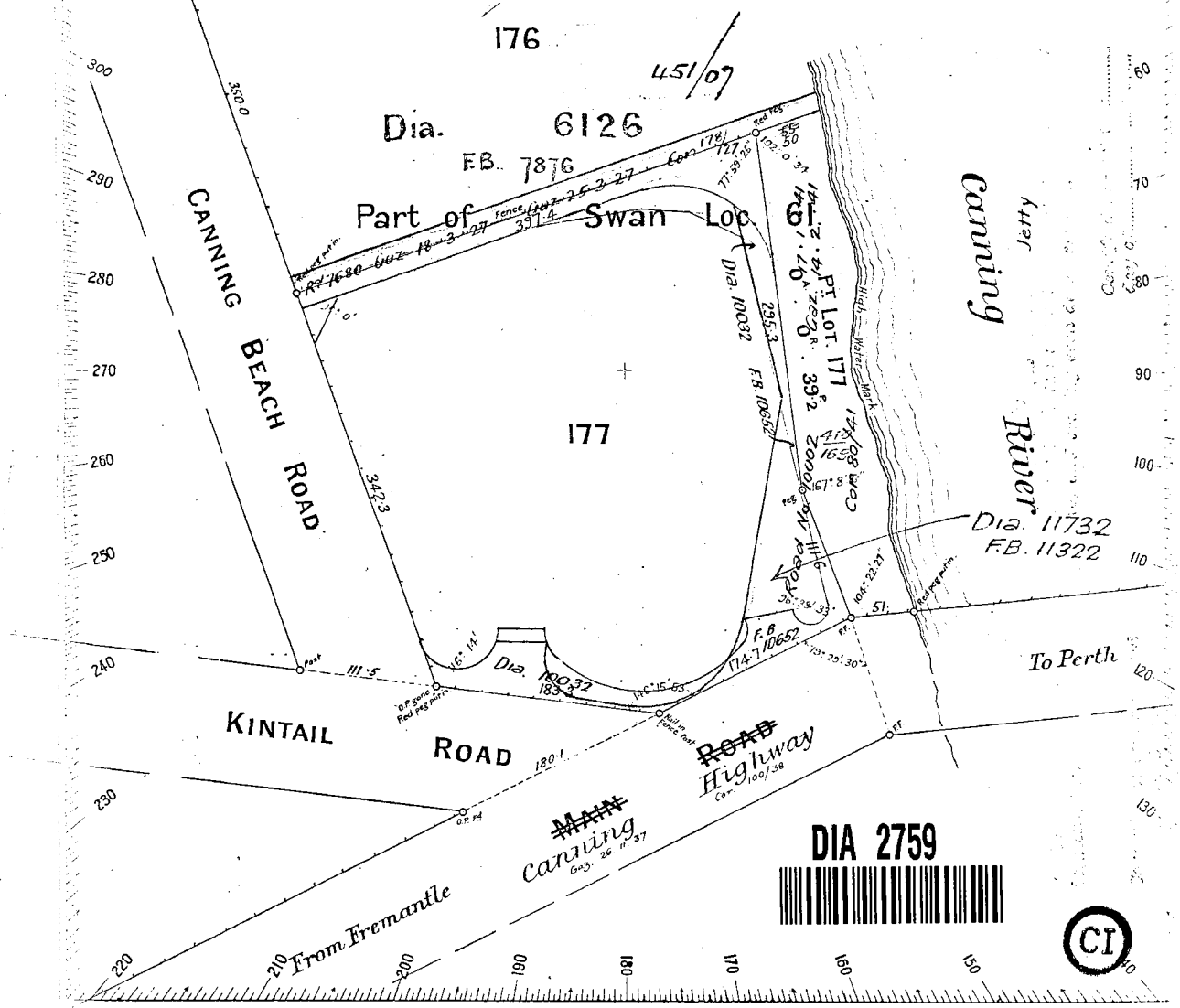
\\ghdnet\ghd\AU\Perth\Projects\61\12658388\GIS\Maps\Working\12658388 - Swan River Ferry Expansion\12658388_Working.aprx - 12658388_002_ApplecrossSite_RevA
Print date: 15 Apr 2025 - 16:10

Data source: Landgate_Subscription_Imagery\WANow Created by: kmacaspac

Town or District.	Number of Lot or Location.	Field Book.	Scale, Chains to One Inch.	Certificate in which Land is vested.	Area
Swan	Pt Lot 177 (on Plan 1751 (Sheet 1)) of Loc.n 61	4195	One		0.0.3[illegible]

"The Public Works Act 1902"

Plan showing Land required for Jetty Purposes AT CANNING BRIDGE.



DECLARATION.

I, Frederick George Penon of Perth Western Australia, do solemnly and sincerely declare that I am a Surveyor duly licensed under "The Transfer of Land Act, 1893," and that the parcels of land herein delineated and coloured (Green) have been surveyed by me personally, pegged on the ground, and plotted in accordance with the Regulations and Instructions for the guidance of Surveyors under the said Act, published on the 9th day of May, 1902, and that this plan is in all respects accurate.

And I make this solemn declaration ~~conscientiously believing the same to be true and by virtue of the provisions of an Ordinance made and passed in the eighteenth year of the Reign of Her late Majesty, No. 12, entitled "An Ordinance for the abolition of unnecessary Oaths, and to substitute Declarations in lieu thereof."~~ by virtue of Section 105 of The Evidence Act 1906.

Signed F. G. Penon (L.S.)

Declared at Perth this 11th day of October

Before me S. S. [illegible] A Justice of the Peace.

Fy'd & Passed.	W. C. Saw Inspector of Plans	On ~~Diagram~~ Plan Plan 1751 (Sheet 1) INDEX PERTH 2000.13-18	Registered	Diagram No 2759

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 12:16 PM Request number: 68164861

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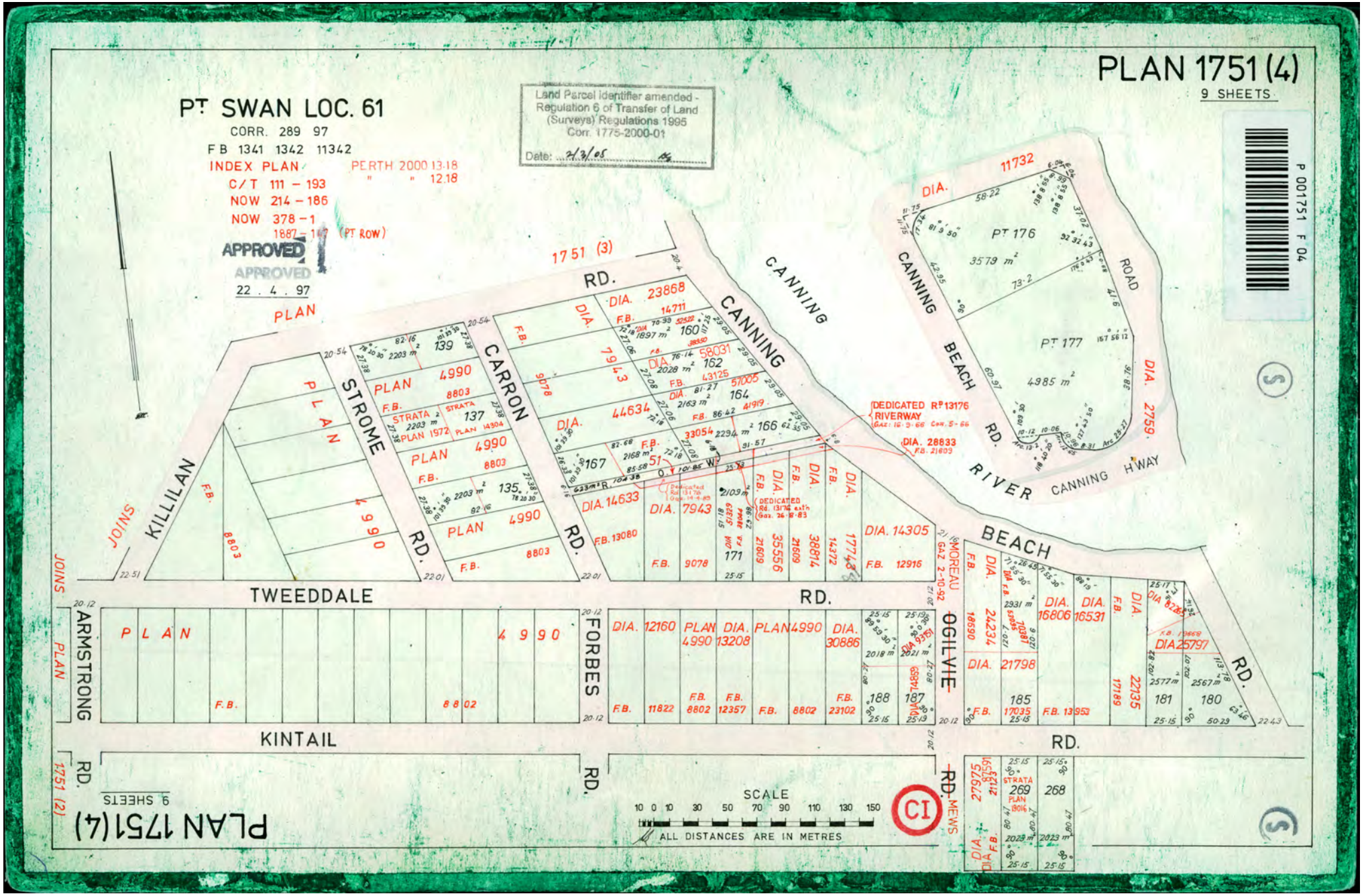
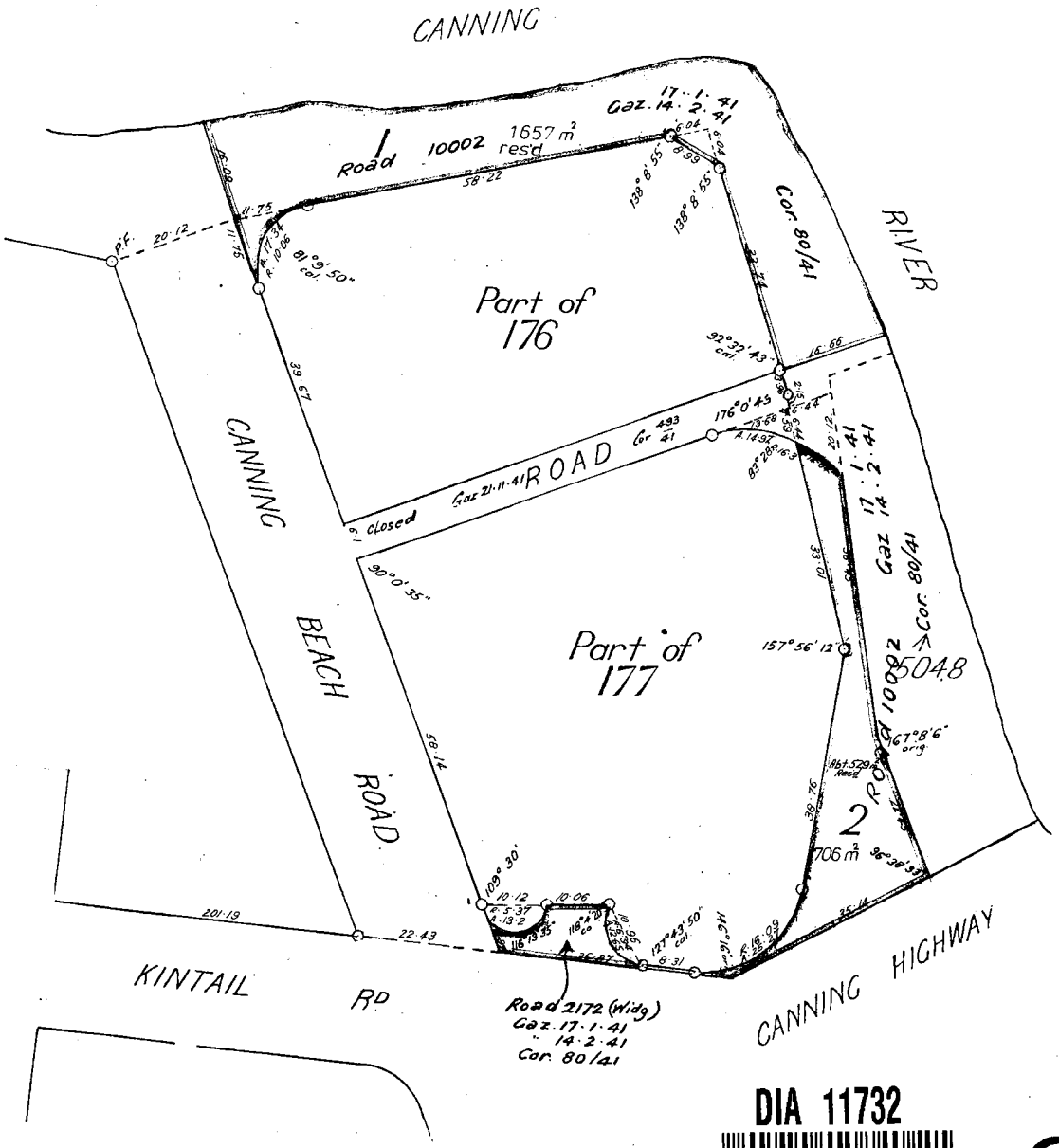
LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 12:07 PM Request number: 68164701
www.landgate.wa.gov.au



Town or District	Number of Lot or Location	Scale	Field Book	Certificate of title in which land is vested	Area
SWAN	Parts of Lots 176 and 177 of Loc 61	1:792	11322	Vol. 873 Fol. 95 1011 121	



DIA 11732

CI

Recorded on			Cor.	Surveyor	Deposited	Approved
Index Plan	Plan	Diagram				
~~7971~~ PERTH 2000 13-18	1751 (1)	6126		Alister Ewing	8. 8. 40.	10. 9. 40.

DUPLICATE 11732

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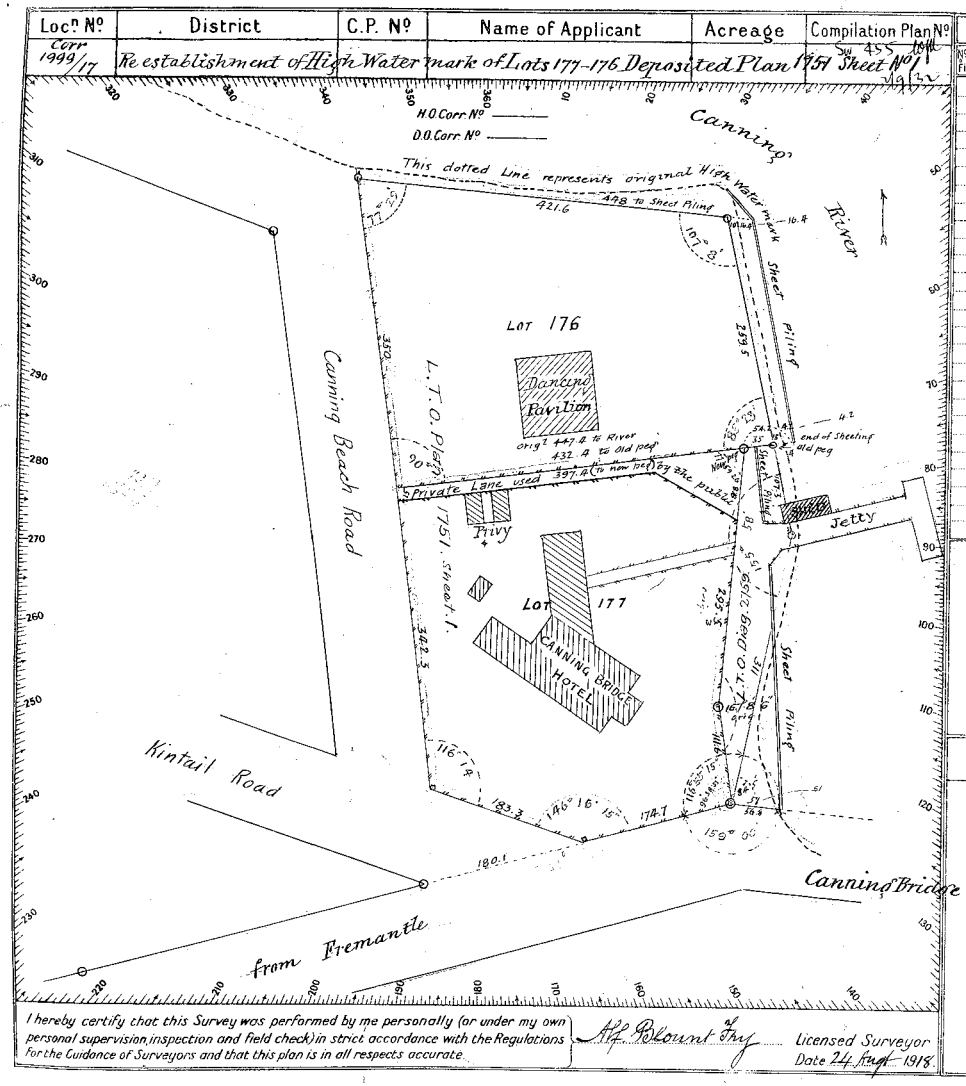
LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 12:07 PM Request number: 68164701
www.landgate.wa.gov.au

Locn No.	District	C.P. No	Name of Applicant	Acreage	Compilation Plan No.
Corr 1999/17	Re establishment of High Water mark of Lots 177-176 Deposited Plan 1951 Sheet No 1				Sw 455 1918



I hereby certify that this Survey was performed by me personally (or under my own personal supervision, inspection and field check) in strict accordance with the Regulations for the Guidance of Surveyors and that this plan is in all respects accurate.

A.P. Blount Surv. Licensed Surveyor
Date 24 Aug 1918

Calculations for Area

No. & Page of Field Book	Bearing	Distance	N	S	E	W	Multipliers	Double Areas

Azimuth observed at .....
or assumed from .....
Date of Marking 24/8/18 1918
Field Book No 34 Page 1 - 5
Scale One Chains to an Inch
Working Plan No. E.12.-4 Division .....

REFERENCE TO TREES

Corner	Bearing	Dist. in Links	No. & Mark on Tree	Description of Tree
A				
B				
C				
D				
E				
F				

OFFICE REFERENCE

Account No. 5/18 Passed [illegible] 27.5.18
Calculation Book No. ✓ Folio ✓
Chainage Close ✓
Angular Close ✓
Area ✓
Compared with F.B. [illegible] 28/5/18
Examined [illegible] 28.5.18
Diagram passed [illegible]
for District Surveyor,
Date 23 Aug 1918

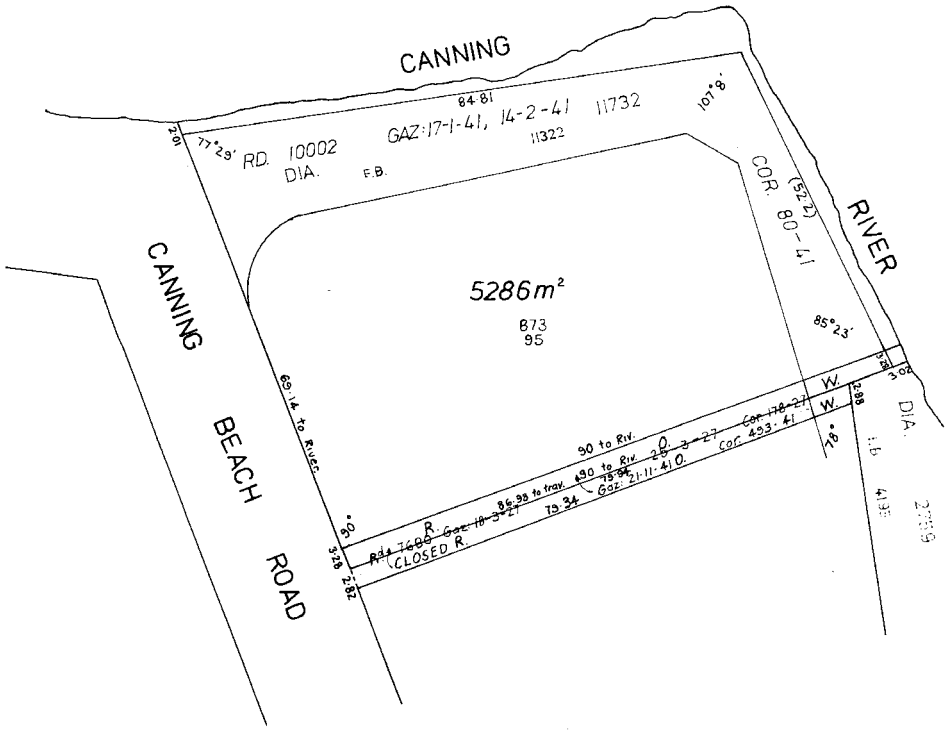
On D.O. Working Plan .....
On Standard Plan .....
On Working Plan .....
Survey approved
[illegible]
~~Surveyor General~~
Date 3.9.1918

Diagram No. 4814

District Office	Head Office
Regd	Regd

L 3124

Town or District.	Number of Lot or Location.	Scale	Field Book.	Certificate of title in which land is vested.	Area
SWAN	LOT 176 & PT 177 OF LOC. 61	1:792	7876	Vol. 511 Fol. 61	



DIA 6126

Recorded on			Cor:	Surveyor	Deposited	Approved.
Index Plan.	Plan.	Diagram.				
PERTH 2000.13·18	1751 (1)	738		P. G. S. HOPE	9- 4- 23	3-5-23

6126

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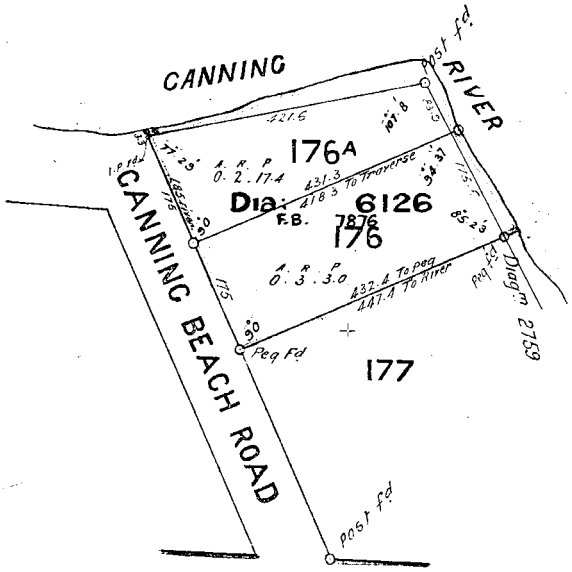
www.landgate.wa.gov.au

Town or District.	Number of Lot or Location.	Field Book.	Scale Chains to One Inch.	Certificate in which Land is vested.	Area
SWAN	LOT 176 ON D.P. 1751 LOC. 61	1716	2	CXI/193 now CLXXVII/29	1 . 1 . 20.4



DIA 738

DECLARATION.

I, , of , Western Australia, do solemnly and sincerely declare that I am a Surveyor duly licensed under "The Transfer of Land Act, 1893," and that the parcels of land herein delineated and colored ( ) have been surveyed by me personally, pegged on the ground, and plotted in accordance with the Regulations and Instructions for the guidance of Surveyors under the said Act, published on the 30th day of June, 1892, and that this plan is in all respects accurate.

And I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of an Ordinance made and passed in the eighteenth year of the Reign of Her present Majesty, No. 12, entitled "An Ordinance for the abolition of unnecessary Oaths, and to substitute Declarations in lieu thereof."

Signed W. J. Cohn (L.S.)

Declared at this day of 189 .

Before me

A Justice of the Peace

Exd & Passed.	On Standard Plan	Registered	Diagram No.
20.12.97	1751 (1) Index Plan Perth 2000 13-18	9 . 12 . 97	738

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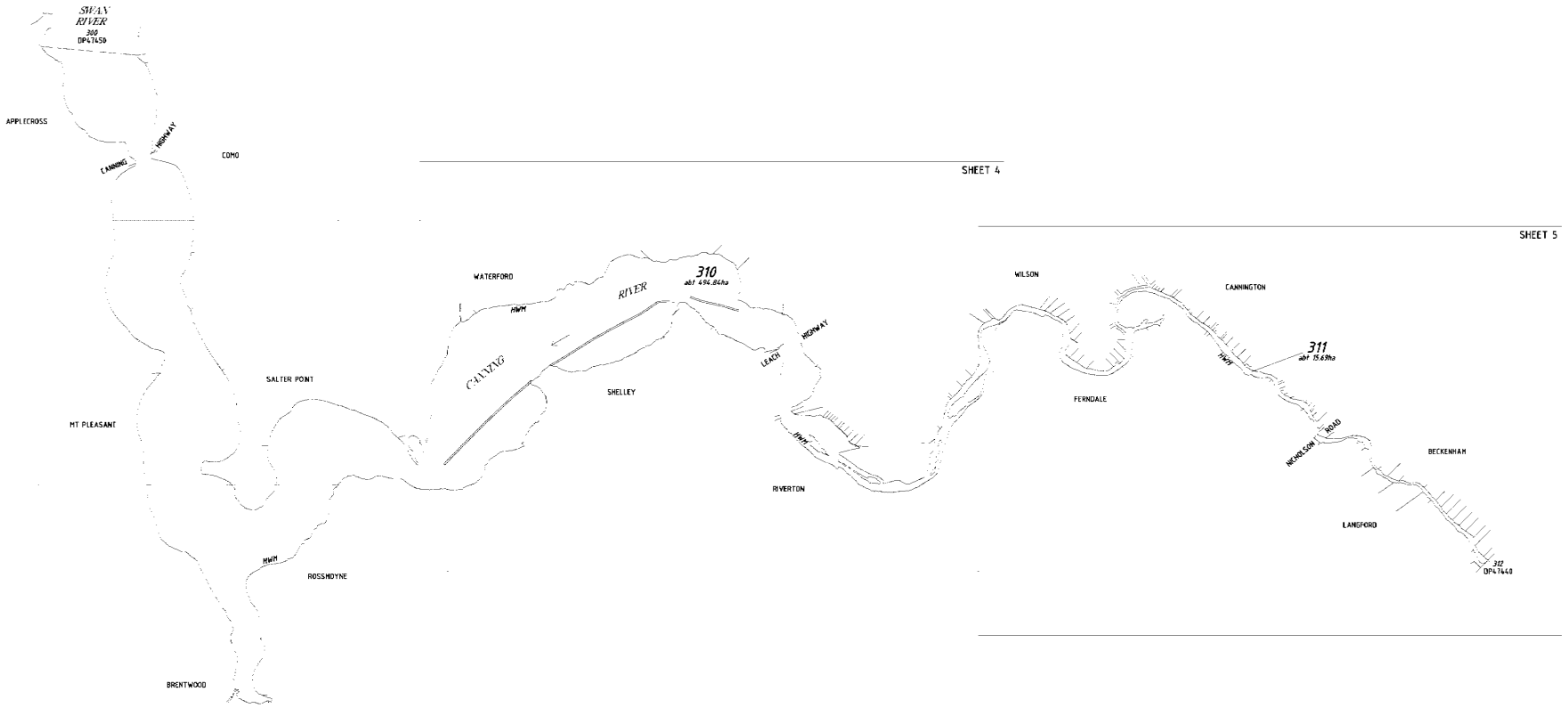
www.landgate.wa.gov.au

ED/VER	AMENDMENT	BY	SIGNATURE	DATE	APPROVED Authorised Land Officer Date

HELD BY DLI
IN DIGITAL
FORM ONLY



LOT BOUNDARIES EXTEND TO HIGH WATER MARK
WATERLINES SHOWN HEREON DO NOT NECESSARILY DEPICT AN EXACT CADASTRAL BOUNDARY
DATA DERIVED FROM THE SCDB - 28 APRIL 2005

TYPE: CROWN PURPOSE: SUBDIVISION	FORMER TENURE	SCALE: 1:15000 (0 150 300 450 600 750) ALL DISTANCES ARE IN METRES	LODGED DATE 16/12/2005
PLAN OF: LOTS 310-311	ON	SUBJECT TO SURVEY NOT FOR ALIENATION PURPOSES	TYPE OF VALIDATION FEE NOT PWR COPIED 15/12/2005
DISTRICT CANNING TOWNSITE FILE 01746-2005-01 LOCALITY LOCAL AUTHORITY CITY OF GOSNELLS, CITY OF CANNING	REFERENCE	SURVEY FIRM DLI - A.GILBERT	IN ORDER FOR DEALINGS SUBJECT TO PROCLAMATION OF BILL 16/12/2005 DATE APPROVED 25/9/07 DATE

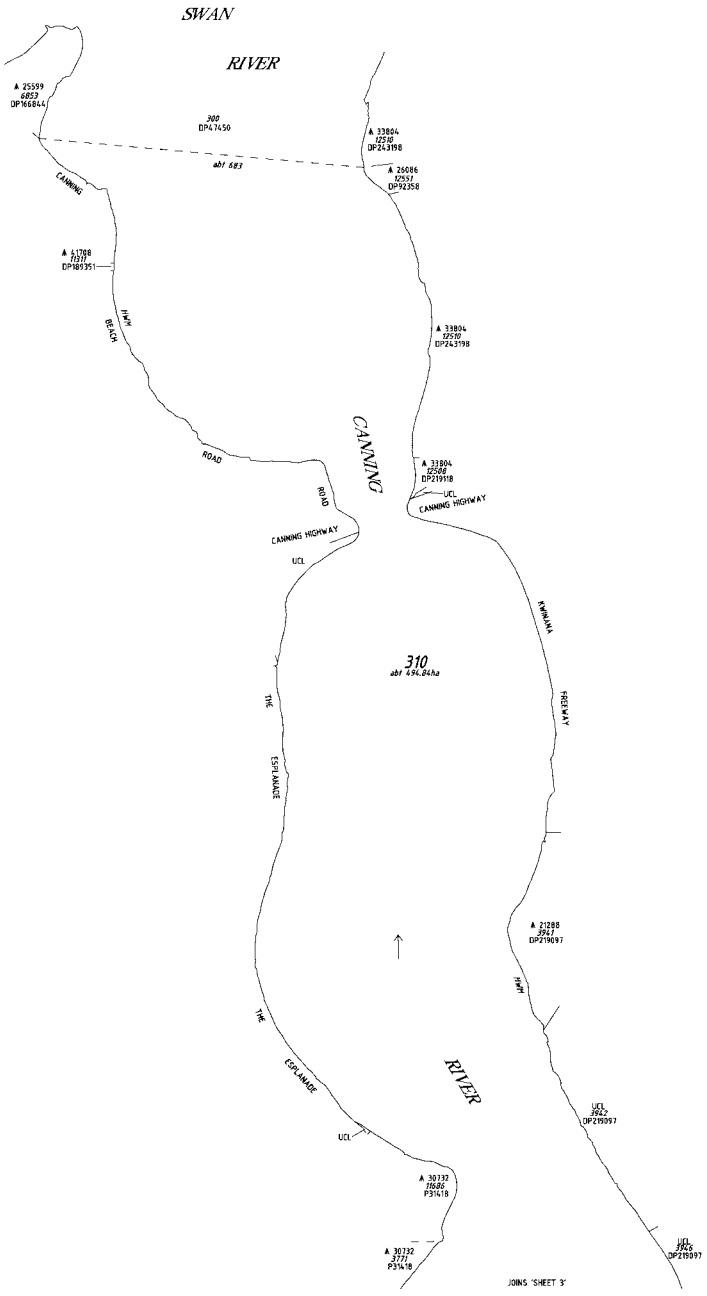
Department of Land Information

DEPOSITED PLAN
47439

SHEET 1 OF 5
EDITION 1 VERSION 1

FOR HEADING SEE SHEET 1

HELD BY DLI IN DIGITAL FORM ONLY



SCALE ALL DISTANCES ARE IN METRES 1:5000

0 50 100 150 200 250

Department of Land Information

DEPOSITED PLAN

47439

SHEET 2 OF 5

EDITION 1 VERSION 1

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FOR HEADING SEE SHEET 1

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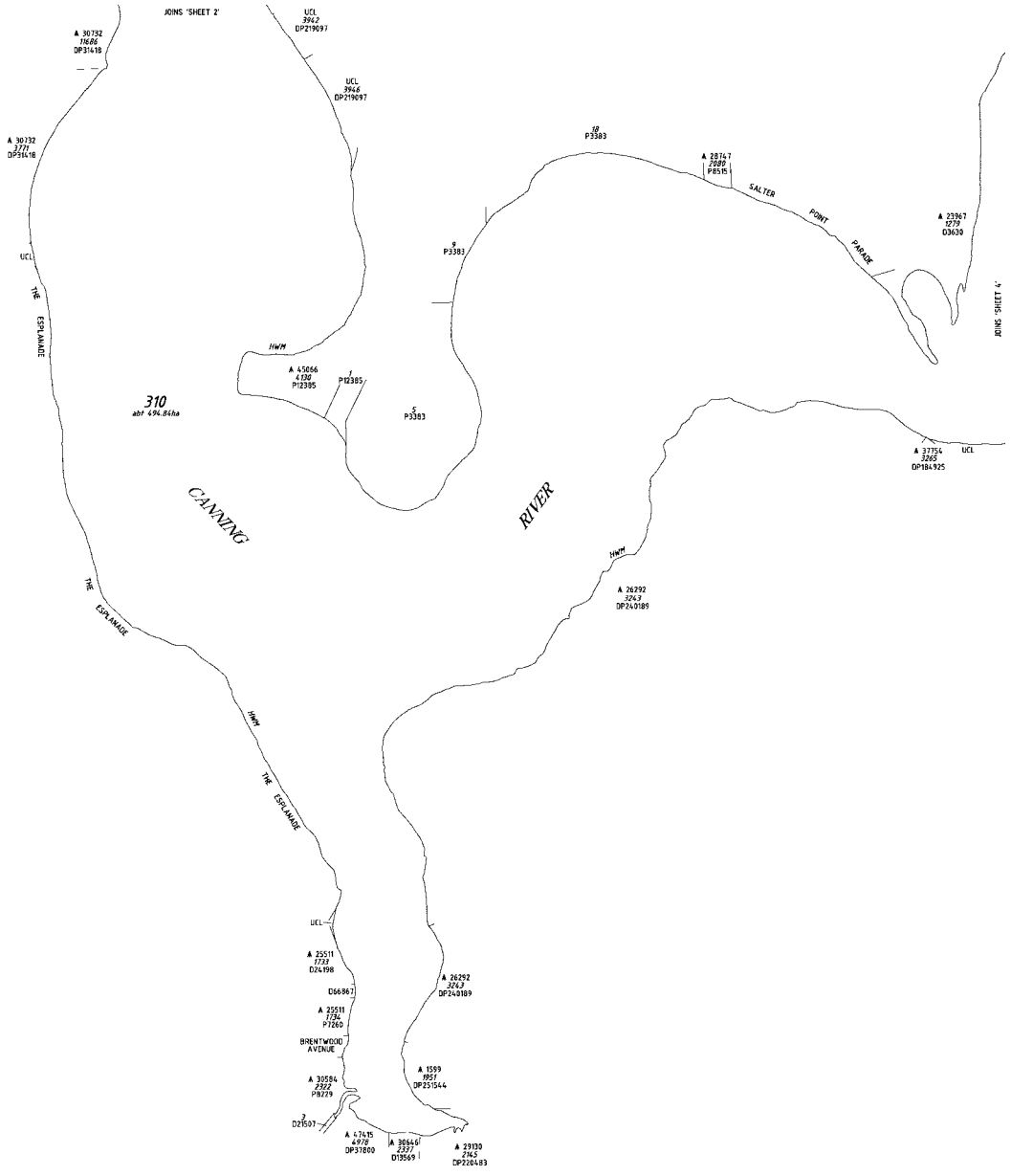

SCALE 1:5000 ALL DISTANCES ARE IN METRES

0 50 100 150 200 250

Department of Land Information

DEPOSITED PLAN

47439

SHEET 3 OF 5

EDITION 1 VERSION 1

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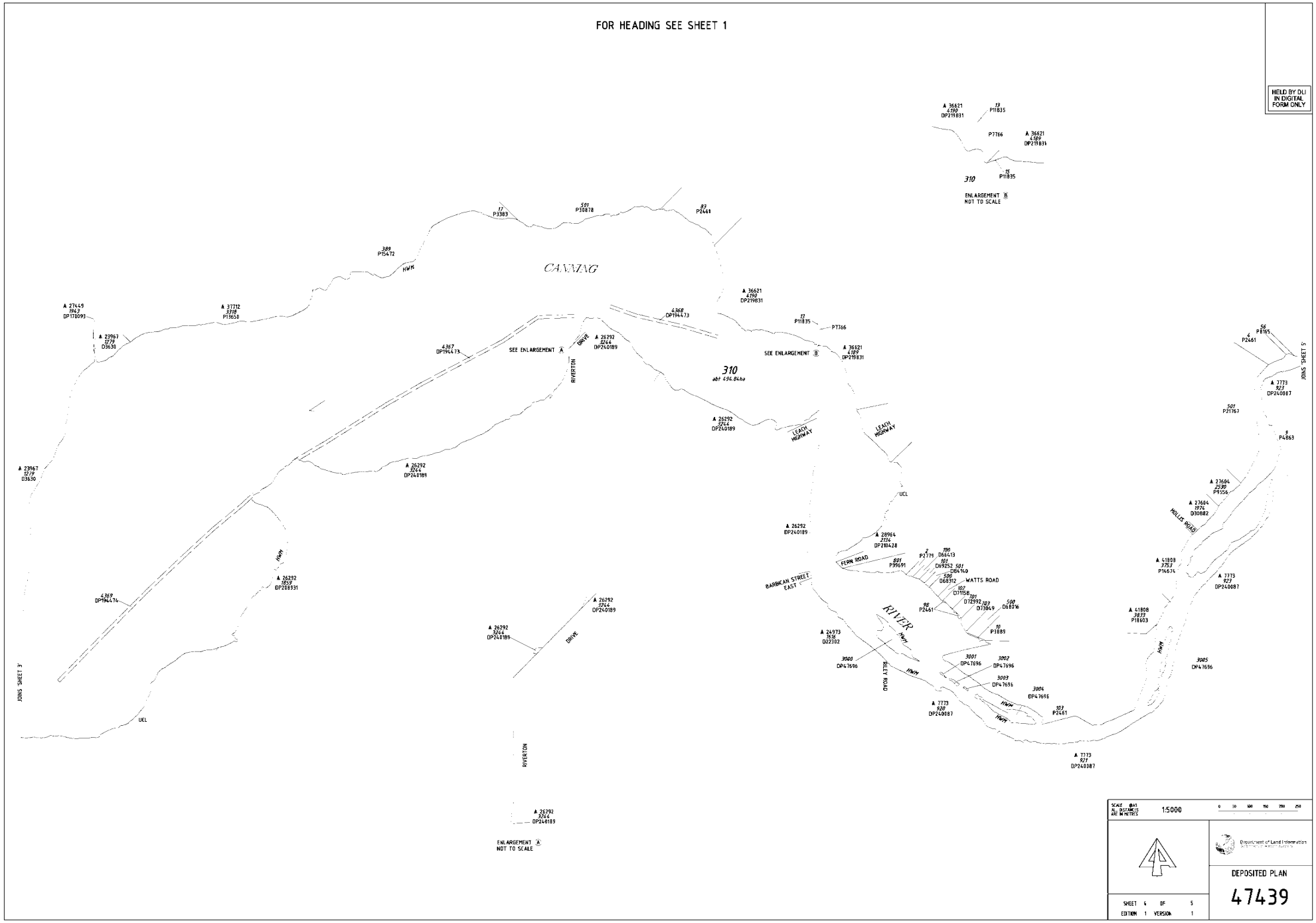

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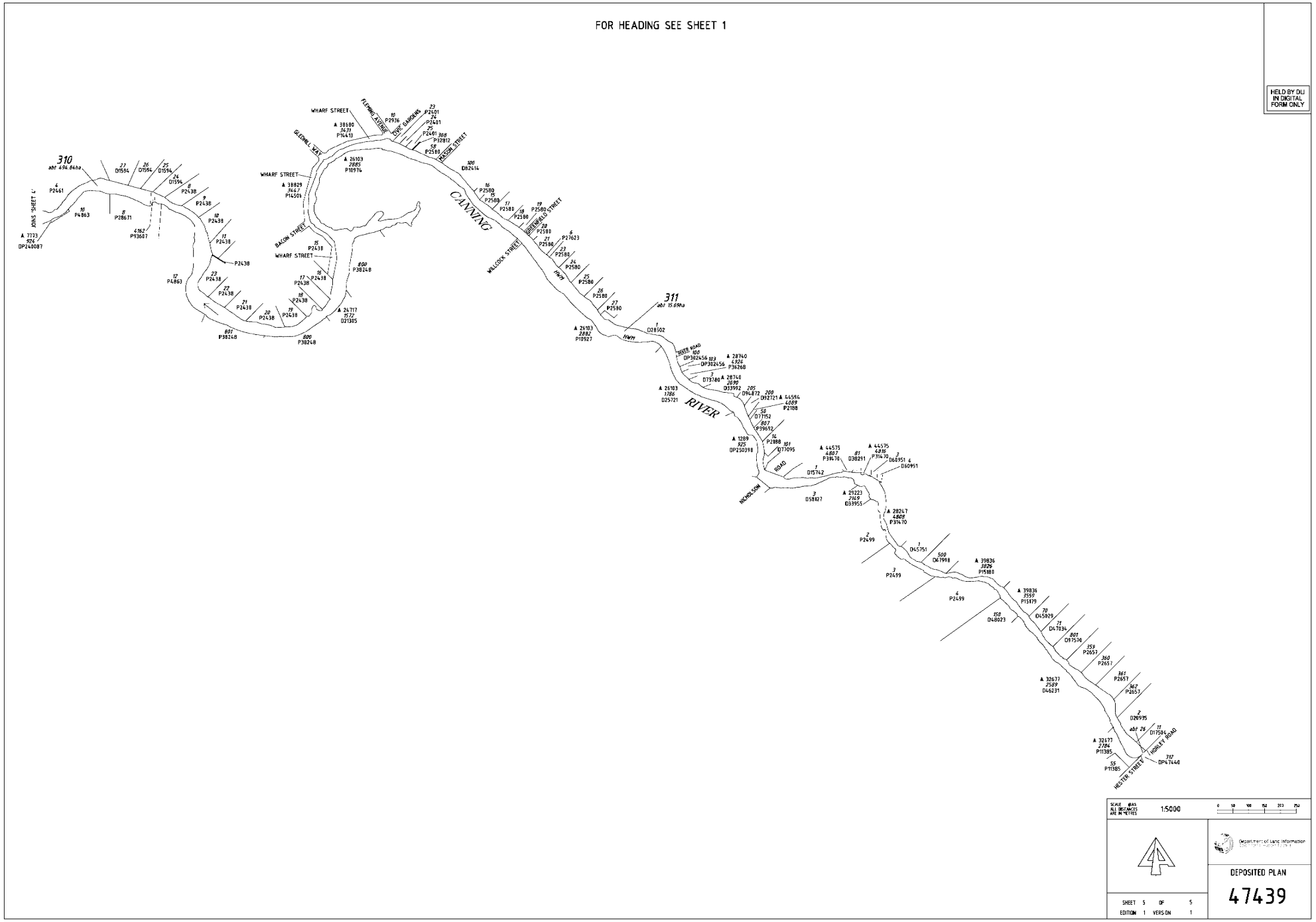
www.landgate.wa.gov.au



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www.landgate.wa.gov.au

Plan Information

Tenure Type	Crown
Plan Type	Deposited Plan
Plan Purpose	Subdivision

Plan Heading

LOT 500 AND ROAD (LOTS 501 AND 502)

Locality & Local Government

Locality	COMO , APPLECROSS & MOUNT PLEASANT
Local Government	CITY OF SOUTH PERTH & CITY OF MELVILLE

Department of Planning, Lands and Heritage

File Number	P16178

Examination

14-Sep-2023

Examined | Date

Planning Approval

Planning Authority	WAPC
Reference	EXEMPT FROM WAPC APPROVAL

Delegated under S. 16 P&D Act 2005 | Date

In Order For Dealings

Subject To: Notification under Sec 42(2)(c) of the Heritage Act 2018.

14-Sep-2023

For Registrar of Titles | Date

Plan Approved

05-Oct-2023

Authorised Land Officer | Date

Survey Details

Field Records	
Declared as Special Survey Area	NO

Survey and Plan Notation

Survey Certificate - Regulation 54

I, K . H . PIPER
hereby certify that this plan is accurate and is a correct representation of the -
(a) survey; and
(b) calculations from measurements recorded in the field records,
undertaken for the purposes of this plan and that it complies with the relevant written law(s) in relation to which it is lodged.

Keith Piper
2023-08-08
18:32+08:00

Licensed Surveyor | Date

Survey Organisation

Name	KEITH PIPER
Email	kasypiper@westnet.com.au
Address	P.O.Box 530 , Wanneroo , 6946

Amendments

Version	Lodgement Type	Amendment Description	Authorised By	Date

Former Tenure

New Lot / Land	Parent Plan Number	Parent Lot Number	Title Reference	Subject Land Description
LOT 500			LR3176-103	U.C.L.
LOT 501			LR3176-104	ROAD
LOT 502			LR3176-105	ROAD

Former Tenure Interests and Notifications

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments

New Interests

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments

New Memorials and Notifications

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
(C)	NOTIFICATION	Sec 42(2)(c) of the Heritage Act 2018	DOC P733873	LOT 500	Heritage Council of WA	
(D)	NOTIFICATION	Sec 42(2)(c) of the Heritage Act 2018	DOC P733873	LOT 501	Heritage Council of WA	
(E)	NOTIFICATION	Sec 42(2)(c) of the Heritage Act 2018	DOC P733873	LOT 502	Heritage Council of WA	

Vesting Lots

Land	Purpose	Statutory Reference	Origin	Comments

ADDITIONAL SHEETS	SHEET	OF	SHEETS	VERSION NUMBER	DEPOSITED PLAN
	1	OF	2	1	425439

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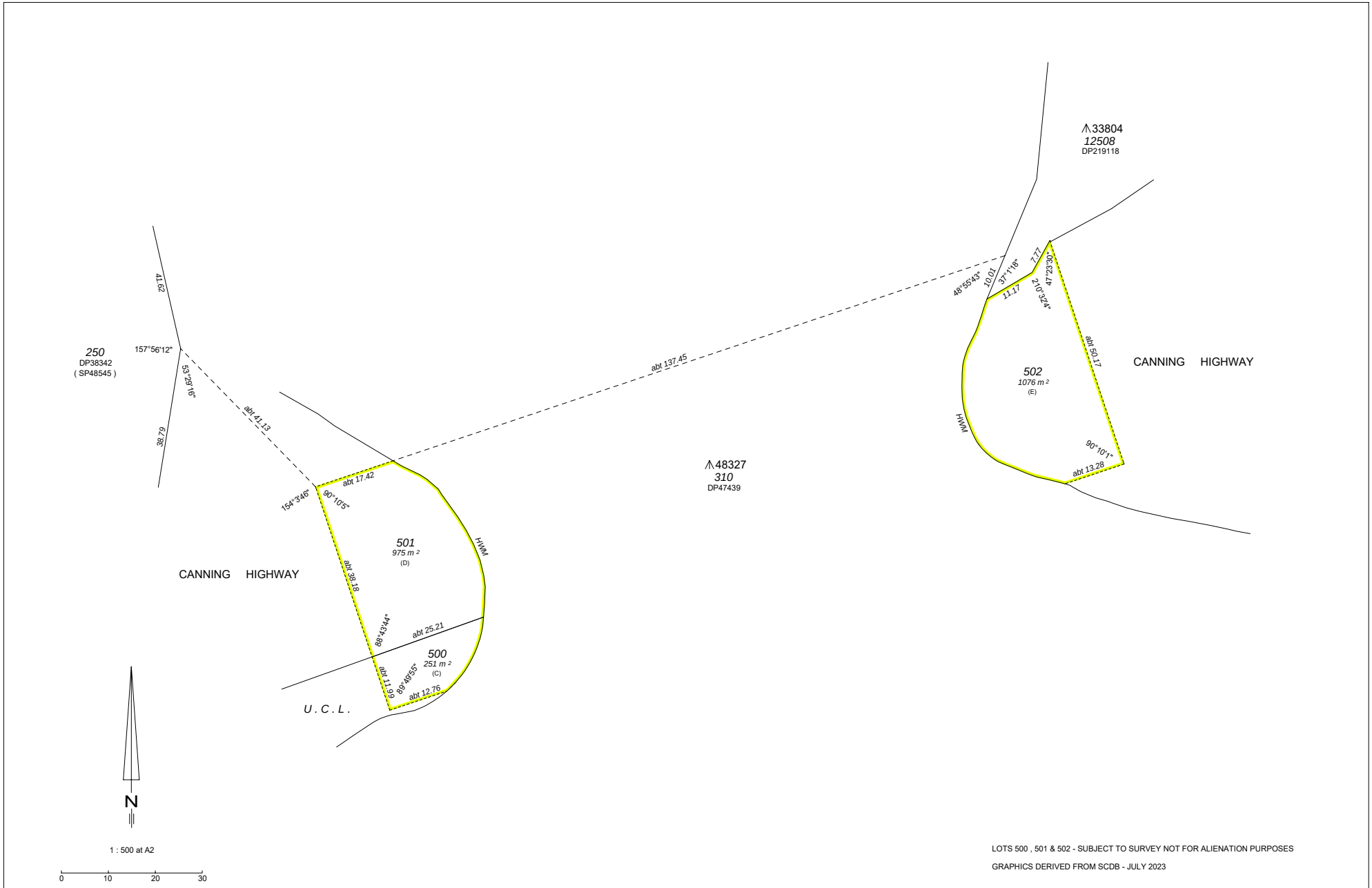
www.landgate.wa.gov.au



LOTS 500 , 501 & 502 - SUBJECT TO SURVEY NOT FOR ALIENATION PURPOSES

GRAPHICS DERIVED FROM SCDB - JULY 2023

SHEET	OF	SHEETS	VERSION NUMBER	DEPOSITED PLAN
2	OF	2	1	425439

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
LR3151	540

RECORD OF QUALIFIED CERTIFICATE OF CROWN LAND TITLE

UNDER THE TRANSFER OF LAND ACT 1893
AND THE LAND ADMINISTRATION ACT 1997

The undermentioned land is Crown land in the name of the STATE OF WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 310 ON DEPOSITED PLAN 47439

STATUS ORDER AND PRIMARY INTEREST HOLDER:
(FIRST SCHEDULE)

STATUS ORDER/INTEREST: RESERVE VESTED UNDER STATUTE

PRIMARY INTEREST HOLDER: SWAN RIVER TRUST OF PO BOX 6740, EAST PERTH
(XE K508133) REGISTERED 15/2/2008

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1.	K508129	RESERVE 48327 FOR THE PURPOSE OF PROTECTION AND ENHANCEMENT OF THE ECOLOGICAL AND COMMUNITY BENEFITS AND AMENITY OF THE SWAN AND CANNING RIVERS REGISTERED 15/2/2008.
2.	K508133	CARE, CONTROL AND MANAGEMENT PURSUANT TO SECTION 11(7) OF THE SWAN AND CANNING RIVERS MANAGEMENT ACT 2006. REGISTERED 15/2/2008.
3.	P733873	NOTIFICATION. HERITAGE ACT 2018. AS TO PORTION ONLY - SEE DEPOSITED PLAN 425438 LODGED 5/10/2023.

Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.
(2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
(3) The interests etc. shown hereon may have a different priority than shown.

----------END OF CERTIFICATE OF CROWN LAND TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP47439
PREVIOUS TITLE: LR3151-540

END OF PAGE 1 - CONTINUED OVER

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PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	CITY OF CANNING
RESPONSIBLE AGENCY:	DEPARTMENT OF BIODIVERSITY, CONSERVATION AND ATTRACTIONS (SCLM)

NOTE 1: K508100 CORRESPONDENCE FILE 01746-2005-01RO
NOTE 2: SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES

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Landgate
www.landgate.wa.gov.au

Reserve Details Report - 48327

Reserve	48327	**Legal Area (ha)**	558
Name	N/A	**Status**	CURRENT
Type	N/A	**Current Purpose**	PROTECTION AND ENHANCEMENT OF THE ECOLOGICAL AND COMMUNITY BENEFITS AND AMENITY OF THE SWAN AND CANNING RIVERS
File Number	00543-1998-03RO;01383-1998-01RO;01746-2005-01RO;01749-2001-01RO;1918/1997		
Notes	N/A		
Additional Reserve Information	RESERVE COMPRISES LOTS 310 & 311 ON DP47439, LOTS 312 & 313 ON DP47440, LOTS 314-316 ON DP47441, LOT 4162 ON DP93607, LOTS 4367 & 4368 ON DP194473, LOT 4369 ON DP194474, LOT 4280 ON DP215572 & LOT 4840 ON DP32737 (K508129)		

Class	Responsible Agency	Date of Last Change
C	DEPARTMENT OF BIODIVERSITY, CONSERVATION AND ATTRACTIONS (SCLM)	13/10/2015

Management Order	Document Number
VESTING SWAN RIVER TRUST	K508133

Land Use
LANDSCAPE PROTECTION

Local Government Authority
CITY OF ARMADALE
CITY OF CANNING
CITY OF GOSNELLS
CITY OF SOUTH PERTH

CLT Number	Parcel Identifier	Street Address, Suburb	File Number	PIN	Area (m²)
LR3110/181	Lot 4162 On Deposited Plan 93607	Lot 4162 Kent Street, WILSON 6107	1918/1997.	11475113	559.044
LR3115/108	Lot 4280 On Deposited Plan 215572	No Street Address Information Available	00543-1998-03RO.	1339025	649.833

CLT Number	Parcel Identifier	Street Address, Suburb	File Number	PIN	Area (m²)
LR3115/564	Lot 4367 On Deposited Plan 194473	No Street Address Information Available	01383-1998-01RO.	1299980	9945
LR3115/565	Lot 4368 On Deposited Plan 194473	No Street Address Information Available	01383-1998-01RO.	1299982	3497
LR3115/566	Lot 4369 On Deposited Plan 194474	No Street Address Information Available	01383-1998-01RO.	1299978	8498
LR3127/69	Lot 4840 On Deposited Plan 32737	No Street Address Information Available	01749-2001-01RO	11112344	1212.792
LR3151/540	Lot 310 On Deposited Plan 47439	No Street Address Information Available	01746-2005-01RO	11715857	4934637.508
LR3151/541	Lot 311 On Deposited Plan 47439	No Street Address Information Available	01746-2005-01RO	11715858	155343.646
LR3151/542	Lot 312 On Deposited Plan 47440	No Street Address Information Available	01746-2005-01RO	11717226	170349.64
LR3151/543	Lot 313 On Deposited Plan 47440	No Street Address Information Available	01746-2005-01RO	11717227	43972.683
LR3151/544	Lot 314 On Deposited Plan 47441	No Street Address Information Available	01746-2005-01RO	11717228	10250.891
LR3151/545	Lot 315 On Deposited Plan 47441	No Street Address Information Available	01746-2005-01RO	11717229	5894.119
LR3151/546	Lot 316 On Deposited Plan 47441	No Street Address Information Available	01746-2005-01RO	11717230	213069.05

Previous Certificates of Title	Status

Document Number/Gazette Page	Date	Type	Text
N111635	03/09/2015	Historical Responsible Agency	SWAN RIVER TRUST
L373842	14/07/2010	Historical Responsible Agency	DEPARTMENT OF WATER
K508133	15/02/2008	Current Vesting	VESTING SWAN RIVER TRUST

Document Number/Gazette Page	Date	Type	Text
K508129	15/02/2008	Current Area	558.0000
K508129	15/02/2008	Class	C
K508129	15/02/2008	Current Purpose	PROTECTION AND ENHANCEMENT OF THE ECOLOGICAL AND COMMUNITY BENEFITS AND AMENITY OF THE SWAN AND CANNING RIVERS

date: May 12, 2025, 10:11:21 AM

2609/15

TRANSFER 671 / 1915 VOL. 163 , FOL. 14
" 177 " 29
" 410 " 170

4945 } 18
4946 }
4947 }

3919 / 20

11916 / 20

25143/21 20

CULLED

INDEXED

REGISTER BOOK.

Vol. 611 Fol. 61.

Dickson 1/19
6/1936

WESTERN AUSTRALIA.

Certificate of Title

CT 0611 0061 F

under "The Transfer of Land Act, 1893."

(Sch. 5, 56 V., 14.)

CANCELLED

William Morris Thomas of Canning Bridge Hotel Canning District Hotel keeper and Mary Bertha Thomas his wife

are now the proprietors as tenants in common

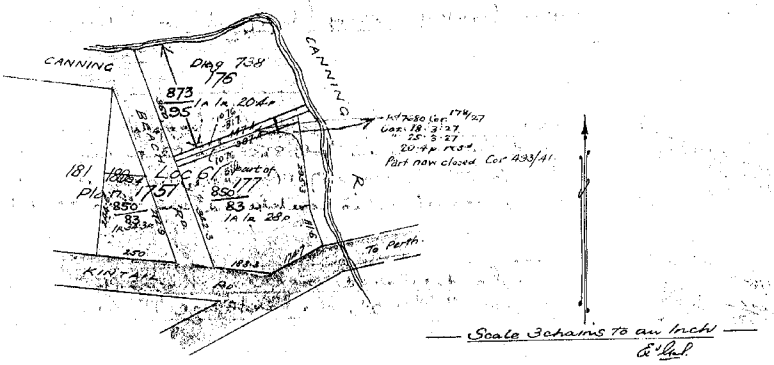
of an estate in fee simple in possession subject to the easements and encumbrances notified hereunder in ALL those pieces of land delineated and coloured green on the map hereon, containing in the aggregate three acres one rood two and seven tenths perches or thereabouts, being portions of Swan Location 61 and being Lot 176 and part of each of Lots 177 and 180 on plan 1751 (sheet 1)

As to the estate of William Morris Thomas only.

56 Vic No 14 sec 187.
Application No 1988/1921. On the 22nd February 1921 William Morris Thomas died. On the 20th May 1921 probate of his will was granted to Mary Bertha Thomas of William Street Perth widow the executrix thereinnamed the other executor named having renounced probate. 7th December 1921

MINES OF COAL AND OTHER MINERALS RESERVED IN THE TERMS OF SECTION 79 OF THE PUBLIC WORKS ACT 1902, ALONE

CANCELLED



Dated the Fourth day of February One thousand nine hundred and fifteen

Registrar of Titles.

For encumbrances and other matters affecting the land see back.

a8510/14.

Title is cancelled

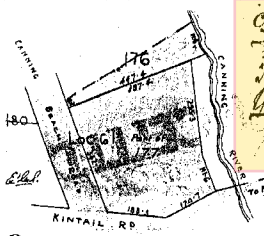
LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 12:34 PM Request number: 68165111

Landgate
www.landgate.wa.gov.au

CT 0611 0061 B

EASEMENTS AND ENCUMBRANCES REFERRED TO.

Instrument stamped £2 -
Mortgage 4287/1915 William Morris Thomas and Mary Bertha Thomas to Eleanor
Incorporated Brighton Estate Limited to secure moneys and
dated 18th February 1915 £700.



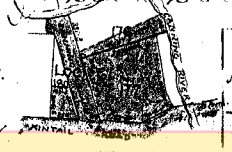
As to the land colored green on the Map on the margin hereof
Lease 1153/1915. to May Scott Widow, Patrick Whelan Gentleman both of
Kalgoorlie and Arthur George Simpson of Perth Brewer. for the term of 21 00
Years from 15th January 1915. at the clear yearly rent of £ 312. payable
Fortnightly Registered 7th April 1915. at 10.25 oc am
Arthur L Mawby

Discharge 701/1920 of Mortgage 4287/1915 - Registered 18th
February 1920 at 10.15 o'clock am.
Arthur L Mawby

Primary Security Mortgage stamped to secure £1000 - Instrument Stamped £2.5
Mortgage 9025/1920 William Morris Thomas, and Mary Bertha
Thomas to The Union Bank of Australia Limited to secure £1
further Indebtedness and interest as therein. Registered 18th
February 1920 at 10.15 oc am.
Arthur L Mawby

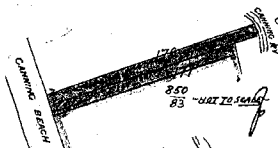
As to Part of Lot 177 only —
Lease 799/1920. to Harry Norman Branson of Canning Bridge Hotel Keeper and Winifred
Vida Branson of the same place his wife for the term of 5 100 Years from the 15th January
1920. at rentals as therein. Registered 1st July 1920 at 2.55 p.m.
The above Transfer of Lease is made
with the Consent of the Mortgagee
A L Mawby

Discharge 5639/1920 of Mortgage 935/1920. Registered 17th November 1920 at 11.30 o'c.
A Barnhall
As to the land colored green on plan in margin below.
Instrument stamped £2.15.0
Mortgage 7902/1920. William Morris Thomas and Mary Bertha Thomas to London
Tunleary of 21 Shaftsbury Hotel, James Street Perth Investor to secure
£2000 and other moneys and interest as therein. Registered 17th November
1920 at 11.30 o'c.

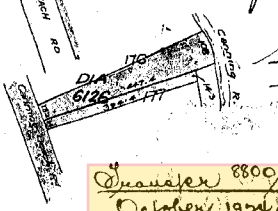


As to portion only
Caveat 972/1923 lodged 4. 7. 1923 at 2.20 p.m. A L Mawby
Expired 4th July 1924 A Barnhall

Transfer 732/1924. Part of each of Lots 177 and 180 to Ethel Watt. Registered 29th January
1924 at 1.35 o'c.
850-83.
A L Mawby



Transfer 732/1924. Grants to the proprietor or proprietors for the time
being of the land in Vol 850 Fol 83 a right of carriage way over so much
of Lots 176, 179 on plan 1751 (Sheet 1) as is coloured brown on the map in the
margin hereof as is contained in this certificate
A L Mawby



As to the land colored green on the map in the margin hereof
Discharge 4274/1924. of Mortgage 7902/1920. Registered 31st October 1924
at 3 o'c.
A L Mawby

Transfer 8800/1924. Part of Lot 176. to George McCarter and Louisa McCarter. Registered 31st
October 1924 at 3 o'c.
873.95
A L Mawby

Transfer 8800/1924. Grants to the proprietor or proprietors for the time being of the
land in Vol 873 Fol 95. a right of carriage way over so much of the land colored
brown as is marked R.O.W. on Diag 6126.
A L Mawby

Application 32/1942 Portion of road closed by Gaz. 21.11.41 (Area 9.5p) is now included in Vol 1076
Fol 817. Registered 8th January 1942 at 10.46 o'c
1076-817.
Registered Vol. 817 Fol. 87
A L Mawby

Application 33/1942 Portion of road closed by Gaz 21.11.41 (area 8-1 p.) is now included in Vol 1076 Fol 818. Registered 8th
January 1942 at 10.46 o'c
1076-818
A L Mawby

Title is cancelled

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 12:34 PM Request number: 68165111

Landgate
www.landgate.wa.gov.au

TRANSFER 8800 VOL. 611 , FOL. 61.
1934.

23390 35009 1927/30 5787/32
1644/34 3893/37
940/37
14493/37 7560/37

ORIGINAL

INDEXED.

REGISTER BOOK.

Vol. 873 Fol. 95

Lucy 11732

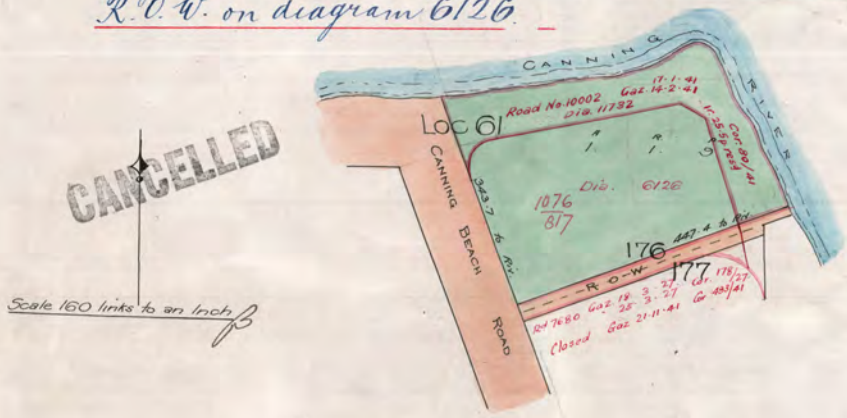
WESTERN AUSTRALIA.

Certificate of Title

under "The Transfer of Land Act, 1893" (Sch. 5, 56 Vic., 14.)

CT 0873 0095 F

George McCarter Tea Room Proprietor and Louisa McCarter his wife both of Canning Bridge are now the proprietors as tenants in common of an estate in fee simple in possession subject to the easements and encumbrances notified hereunder in ALL that piece of land delineated and coloured green on the map hereon, containing one acre one rood and nine perches or thereabouts, being portion of Swan Location 61 and being part of Lot 176 on plan 1751 (sheet 1) together with a right of carriage way over so much of the land coloured brown as is marked R.O.W. on diagram 6126.



CANCELLED

Dated the twelfth day of November One thousand nine hundred and twenty-four.

Assistant Registrar of Titles.

Transfer 7002/1934 Transferred to Peter Joseph Clinton, Sales and Service Manager, and Ellen Mary Clinton, his wife, both of Beach Road Canning Bridge as joint tenants Registered 26th October 1934 at 10.30 o'c

ASSISTANT REGISTRAR OF TITLES

56 Vic No 14 Sec 227
Application 401/1937 On the 17th December 1936 Peter Joseph Clinton died and thereupon Ellen Mary Clinton became the sole proprietress of the within land by Survivorship

2nd March 1937

ASSISTANT REGISTRAR OF TITLES

Transfer 7019/1937 Transferred to Joseph Adolphus Coleman of Victoria Park Hotel, Albany Road Victoria Park Hotelkeeper. Registered 23rd August 1937 at 2.30 o'c

ASSISTANT REGISTRAR OF TITLES

PORTION RESUMED TOGETHER WITH ALL MINES OF COAL AND OTHER MINERALS THEREIN IN THE TERMS OF SECTION 15 OF THE PUBLIC WORKS ACT 1902 ALONE REMAINS.

No dealing to be registered until application to include portion of closed Road is lodged

See M.O. 61/61

q 10575/24

For encumbrances and other matters affecting the land see back

Title is cancelled

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 02:17 PM Request number: 68166235

Landgate
www.landgate.wa.gov.au

EASEMENTS AND ENCUMBRANCES REFERRED TO.

CT 0873 0095 B

Mortgage 7969/1924. George McCarter and Louisa McCarter to Mary Bertha Thomas of Gordons Hotel William Street Perth Widow to secure £500. and interest at £8. per centum per annum reducible as therein. Registered 1st November 1924 at 11.45 o/c.

ASSISTANT REGISTRAR OF TITLES.

Discharge 5756/1939 of Mortgage 7969/1924 Registered 14th November 1939 at 1.35 o'clock

ASSISTANT REGISTRAR OF TITLES.

Collateral to General Lien stamped £2-10-0

Mortgage 5209/1934 Peter Joseph Clinton and Ellen Mary Clinton to The Commercial Bank of Australia Limited Registered 26th October 1934 at 10.30 o/c

ASSISTANT REGISTRAR OF TITLES

Discharge 104/1937 of Mortgage 5209/1934. Registered 13th January 1937 at 10.50 o/c

ASSISTANT REGISTRAR OF TITLES

Collateral to General Lien stamped 5/-.

Mortgage 2226/1937. Ellen Mary Clinton to The Commercial Bank of Australia Limited of St. Georges Terrace, Perth. Registered 4th May 1937 at 10.30 o/c.

ASSISTANT REGISTRAR OF TITLES.

Discharge 3314/1937. of Mortgage 2226/1937. Registered 23rd August 1937 at 2.30 o'c

ASSISTANT REGISTRAR OF TITLES.

Application 32/1942 a new certificate issued for portion including the fee of the portion of road 7680 closed by Gaz 21.11.41 and included in Vol 1076 Fol 817. Registered 8th January 1942 at 10.45 o/c.

1076-817.

REGISTRAR OF TITLES.

CERTIFICATE OF TITLE.

Registered Vol..... Fol.....

Title is cancelled

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 02:17 PM Request number: 68166235

Landgate

www.landgate.wa.gov.au

TRANSFER 732 1924 VOL. 611 , FOL. 61

28878/24 4208/24

REGISTER BOOK.

Vol. 850 Fol. 83.

WESTERN AUSTRALIA.

Certificate of Title

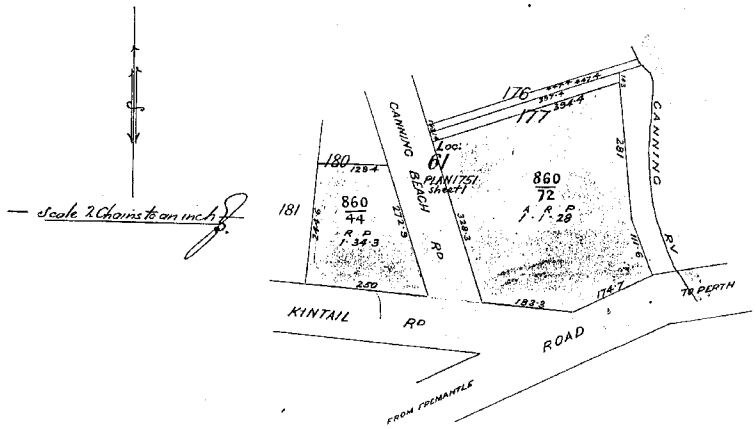
under "The Transfer of Land Act, 1893" (Sch. 5, 56 Vic., 14.)

CT 0850 0083 F

Ethel Wall of Canning Bridge Hotel, Canning Bridge Married Woman

is now the sole proprietor

of an estate in fee simple in possession subject to the easements and encumbrances notified hereunder in ALL these piece of land delineated and coloured green on the map hereon, containing together one acre three roods thirteen and five tenths perches or thereabouts, being portion of Swan Location 61 and being part of each of Lots 177 and 180 on plan 1751 (sheet 1) Together with a right of carriage way over so much of Lots 176 and 177 on said plan as is coloured brown on the map hereon.



Dated the twenty-fifth day of January One thousand nine hundred and twenty-four.

Registrar of Titles.

Transfer 4314/1924 Totally Cancelled, balance (Pt Lot 177) to Bertie Mantova Bunsey and Edith Smythe — Registered 30th May 1924 at 12.20 o'c. pm.

860 - 72

For encumbrances and other matters affecting the land see back.

Title is cancelled

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 02:17 PM Request number: 68166235

Landgate
www.landgate.wa.gov.au

EASEMENTS AND ENCUMBRANCES REFERRED TO.

1 As to part of Lot 177 only
Lease 799/1920 to Harry Norman Branson of Canning Bridge Hotelkeeper and Winifred Eliza Branson of the same place his wife for the term of Five Years from the 12th January 1920 at rentals as therein. Registered 5th July 1920 at 2 o'c.
~~The above memorandum of Lease is made~~
~~with the consent of the Mortgagees.~~
as Deeds
Registrar of Titles. sgd Arthur E. Harvey ASSISTANT REGISTRAR OF TITLES.

1 Instrument stamped £2.15.0
Mortgage 790/1920. William Morris Thomas and Mary Bertha Thomas to Gordon Dunlavey of The Shaftesbury Hotel James Street Perth Investor to secure £2000 and other moneys and interest as therein. Registered 17th November 1920 at 11.20 o'c.
as Deeds
Registrar of Titles.
ASSISTANT REGISTRAR OF DEEDS

1 Instrument stamped £6.5.0
Mortgage 632/1924. Ethel Watt to Swan Brewery Limited of Mounts Bay Road Perth to secure £4000 and further advances and interest as therein. Registered 29th January 1924 at 1.25 o'c.
as Deeds
Registrar of Titles.

Surrender 9/1924 of Lease 799/1920. Registered 25th February 1924 at 11.50 o'c
ASSISTANT REGISTRAR OF DEEDS.

As to the land the Subject of Transfer 4336/1924
Discharge 3113/1924 of Mortgage 790/1920 - Registered 28th May 1924 at 11 o.c. am
as Deeds
Registrar of Titles.

As to the land the Subject of Transfer 4336/1924
Discharge 3114/1924 of Mortgage 632/1924 - Registered 28th May 1924 at 11 o.c. am
as Deeds
Registrar of Titles.

Transfer 4336/1924 Pt Lot 180 to Melville Road Board - Registered 28th May 1924 at 10 o.c. am
as Deeds
Registrar of Titles.
860 x 4

CT 0850 0083 B

CERTIFICATE OF TITLE.

Registered Vol.....Fol.....

Title is cancelled

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 02:17 PM Request number: 68166235

Landgate
www.landgate.wa.gov.au

TRANSFER 1131/1924 VOL. 850 FOL. 83.

11408 777 43 27/6/26 8377/27

ORIGINAL

INDEXED.

REGISTER BOOK.

Vol. 860 Fol. 72

WESTERN AUSTRALIA.

Certificate of Title

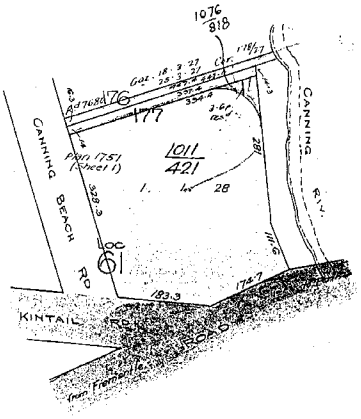
CT 0860 0072 F

under "The Transfer of Land Act, 1893" (Sch. 5, 56 Vic., 14.)

Bertha Maudova Bursey of Canning Bridge Hotel Canning Bridge Married Woman and Edith Smythe of Loch Street Claremont Married Woman are now the proprietor as Executrix and Executor

of an estate in fee simple in possession subject to the easements and encumbrances notified hereunder in ALL that piece of land delineated and coloured green on the map hereon, containing one acre one rood and twenty eight perches or thereabouts, being portion of Swan Location 61 and being part of Lot 177 on plan 1751 (sheet 1) together with a right of carriage way over so much of Lots 176 and 177 on said plan as is coloured brown on the map hereon

Scale 2 Chains to an Inch



CANCELLED

Dated the thirtieth day of May One thousand nine hundred and twenty-four.

Registrar of Titles.

As to the Interest of Edith Smythe only —
Transfer 8544/1926. Transferred to Arthur Edmund Bursey of Canning Bridge Hotel Canning Bridge Hotelkeeper Registered 17th September 1926 at 12.55 p.m.

George Barnett
ASSISTANT REGISTRAR OF TITLES.

Transfer 7666/1929 Totally cancelled to Frederick Coleman Registered 6th July 1929 at 12 p.m.
1011—421. Entered in error

Portion of Rounded Corner remains

CANCELLED

For encumbrances and other matters affecting the land see back.

Title is cancelled

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 02:28 PM Request number: 68166338

Landgate
www.landgate.wa.gov.au

EASEMENTS AND ENCUMBRANCES REFERRED TO.

CT 0860 0072 B

Instrument Stamped £2.15.0
Mortgage 7902/1920 William Morris Thomas and Mary Bertha Thomas, to Gordon Dumbarton of 4 Shaftesbury Road, James Hall, Perth, Investor, to secure £2000 and other moneys and interest as therein Registered 17th November 1920 at 11.30 o.c. (Sd) R. J. Dartnell
Registrar of Titles. ASSISTANT REGISTRAR OF TITLES.

Instrument Stamped £6.5.0
Mortgage 632/1924 Ethel Watt, to Emu Brewery Limited of Mounts Bay Road, Perth to Secure £4800 and further advances and interest as therein - Registered 29th January 1924 at 1.25 o.c. pm
(Sd) A. Clyde
Registrar of Titles. Registrar of Titles.

Mortgage 8159/1926 Bertha Mandova Bursey and Arthur Edmund Bursey to Emu Brewery Limited of Mounts Bay Road Perth to secure advances not to exceed in the aggregate at any time £2000.0.0 and interest as therein Registered 17th September 1926 at 12.55 o.c. —
Wm Hamett
ASSISTANT REGISTRAR OF TITLES.

Transfer 10388/1926 of Mortgage 7902/1920 to Guy Trevardon Shall of Forrest Chambers Perth Estate Agent and Francis Walpole Leake of 18 Mount Street Perth Solicitor as Joint Tenants Registered 12th November 1926 at 2.20 o.c.
A. H. Lamy

Extension 136/1926 of Mortgage 7902/1920 Registered 12th November 1926 at 2.20 o.c.
A. H. Lamy
ASSISTANT REGISTRAR OF TITLES.

Discharge 3866/1929 of Mortgage 7902/1920 Registered 6th July 1929 at 12 o.c. A. H. Lamy

Discharge 3867/1929 of Mortgage 632/1924 Registered 6th July 1929 at 12 o.c. A. H. Lamy

Discharge 3868/1929 of Mortgage 8159/1926 Registered 6th July 1929 at 12 o.c. A. H. Lamy
ASSISTANT REGISTRAR OF TITLES.

Transfer 7666/1929. Part of Lot 177 to Frederick Coleman. Registered 6th July 1929 at 12 o.c. A. H. Lamy
1011—421.

Application 33/1942 (portion of road closed by Gaz. 21.11.41 (area 1.1p) is now included in Vol 1076. Fol 18. Registered 8th January 1943 at 10.45 o.c. A. H. Bleasdell
1076-P18.
REGISTRAR OF TITLES.

CERTIFICATE OF TITLE.

Registered Vol..... Fol.....

Title is cancelled

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 02:28 PM Request number: 68166338
Landgate
www.landgate.wa.gov.au

22278/19 21634/19 28877/19 4684/35 5911/35

TRANSFER 7666 VOL. 860 , FOL. 72.
1929.
17197/37.

ORIGINAL

INDEXED.

REGISTER BOOK.

Vol. 1011 Fol. 421. Diag 10054 Diag 11739

WESTERN AUSTRALIA.

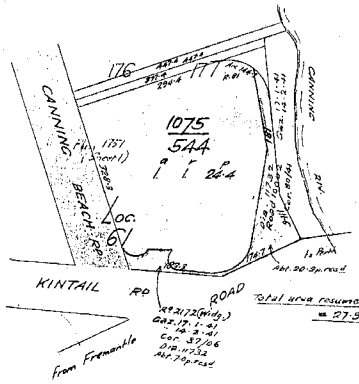
Certificate of Title

under "The Transfer of Land Act, 1893" (Sch. 5, 56 Vict., 14.)

CT 1011 0421 F

Frederick Coleman of Canning Bridge Hotel Canning Bridge Hotelkeeper is now the sole proprietor of an estate in fee simple in possession subject to the easements and encumbrances notified hereunder in ALL that piece of land delineated and coloured green on the map hereon, containing one acre one rood twenty four and four tenths perches or thereabouts, being portion of Swan Location 61 and being part of Lot 177 on plan 1751 (sheet 1)

Scale: 2 Chains to an Inch



CANCELLED

Dated the Sixth day of July One thousand nine hundred and twenty-nine.

Assistant Registrar of Titles.

Transfer 10879/1929 Transferred to Joseph Adolphus Coleman of the Victoria Park Hotel Victoria Park Hotel Proprietor. Registered 17th September 1929 at 2.45 o'c

ASSISTANT REGISTRAR OF TITLES

Inc Plan 2172 as marked on Sht 1 Dupliate Cor 37/26

For encumbrances and other matters affecting the land see back.

Title is cancelled

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 02:39 PM Request number: 68166454

Landgate

www.landgate.wa.gov.au

EASEMENTS AND ENCUMBRANCES REFERRED TO.

Instrument stamped £6-5-0.
Mortgage 7248/1929. Frederick Coleman to Bank of New South Wales. Registered 6th July 1929 at 12 oc.

Instrument stamped £3-10-0.
Mortgage 7249/1929. Frederick Coleman to The Emu Brewery Limited of Kwinana Bay Road Perth. DISCHARGED Registered 6th July 1929 at 12 oc.

Discharge 5330/1929 of Mortgage 7248 1929 Registered 14th September 1929 at 2.45 oc

Asst. Registrar of Titles

Lease 717/1930 To Luke Doyle of Mt. Nagaar Mine Perth Managers for the term of five years from and including the 1st September 1929. Registered 10th April 1930 at 3 o'clock
The above Memorial of Lease is made with the consent of the Mortgagee.

Registrar of Titles

Discharge 974/1935 of Mortgage 7249/1929 Registered 11th March 1935 at 10.45 o'c.

Instrument stamped £6.5.0.
Mortgage 1740/1935 Joseph Adolphus Coleman to The National Bank of Australasia Limited
Registered 5th April 1935 at 3 o'clock.

Registrar of Titles

Collateral to Mortgage stamped £6.5.0 Instrument primarily stamped £2.10.0.
Mortgage 5528/1937 Joseph Adolphus Coleman to The National Bank of Australasia Limited.
Registered 1st October 1937 at 10.45 o'c.

Registrar of Titles

Correspondence 80/41. A new certificate issued for the unassumed portion at 40oc.
1075-544

Registered 2nd September 1941
Act 41 Sec 9 (2)

CT 1011 0421 B

CERTIFICATE OF TITLE.

Registered Vol.....Fol.....

Title is cancelled

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 02:39 PM Request number: 68166454
Landgate
www.landgate.wa.gov.au

Griffin, James, Esperance (755 and 756), 20135/68 (1,895a.), non-compliance with conditions; 5566/25.
Kalgoorlie and Boulder Firewood Company, Ltd., Lakeside (Lot 26), 4159/153 (0a. 1r. 0p.), abandoned; 4420/18.
Kalgoorlie and Boulder Firewood Company, Ltd., Lakeside (Lot 25), 4332/153 (0a. 1r. 0p.), abandoned; 8918/19.
Keough, Timothy, Lake View (197), 1565/21 (0a. 1r. 0p.), abandoned; 8390/00.
McBeath, E. O., Avon (23447), 18878/68 (1,000a. 1r. 27p.), non-compliance with conditions; 5751/24.
Goff, Mary, Ninghan (1520), 12997/56 (987a. 1r. 36p.), non-compliance with conditions; 7083/23.
Cannon, John, Victoria (7664 and 6244), 18726/68 (4,994a.), non-compliance with conditions; 4172/24.

C. G. MORRIS,
Under Secretary for Lands.

THE ROAD DISTRICTS ACT, 1919.

WHEREAS the CLAREMONT Road Board, by resolution passed at a meeting of the Board, held at Claremont on or about the 13th day of October, 1926, resolved to open the road hereinafter described, that is to say:—

1826/89.

No. 564: Widening of part of.—Those portions of Lots 47 and 48 of Swan Location 504 (as shown on Diagram 49980) bounded on the West and South-Westward by part of the West boundary of Lot 47 and part of the South-Western boundary of Lot 46 and on the North-Eastward by a circular convex arc having a length of 101.2 links. (Plan Melville.)

WHEREAS the SOUTH PERTH Road Board, by resolution passed at a meeting of the Board, held at South Perth on or about the 24th day of February, 1927, resolved to open the road hereinafter described, that is to say:—

5975/96.

No. 647: Widening of part.—That portion of Reserve No. 5574 having an arc of 78.5 links and tangents of 50 links at the junction of the Southern side of Road No. 647 (Richardson Street) with the Western side of Labouchere Road. (Plan South Perth.)

WHEREAS the GNOWANGERUP Road Board, by resolution passed at a meeting of the Board, held at Gnowangerup on or about the 19th day of January, 1926, resolved to open the road hereinafter described, that is to say:—

152/22.

No. 6902: Deviation of part of.—A strip of land, one chain wide (widening in parts), leaving the present road at a North-East corner of Kojonup Location 3914 and extending South (as shown Diagram 49141) along an East boundary of the said location to the South-West corner of Location 3480; thence East along the South boundary of Location 3480 aforesaid and through Location 2522 to a surveyed road on the East boundary of the last mentioned location. (Plan 436B/40, D.E.1.)

WHEREAS the MOORA Road Board, by resolution passed at a meeting of the Board, held at Moora on or about the 11th day of August, 1925, resolved to open the road hereinafter described, that is to say:—

4188/24.

No. 7315: Extension of.—A strip of land, one chain wide, leaving the present road on the West boundary of Lot M1483 of Melbourne Location 931 and extending Westward (as shown Diagram 49950) through Lot M609 of Location 913 to a surveyed road at the Southern end of the Lyon Station Yard Reserve. (Plan 63/80, E4.)

WHEREAS the DALWALLINU Road Board, by resolution passed at a meeting of the Board, held at Dalwallinu on or about the 21st day of October, 1926, resolved to open the road hereinafter described, that is to say:—

9546/13.

No. 7614.—A strip of land, one chain wide, leaving Road No. 6875 at the South-West corner of Victoria Location 5417 and extending Eastward as surveyed along the South boundary of the said location and to and along a North boundary of and through Location 7721 to the latter's East boundary; thence Eastward to and along a North boundary of and through Location 7699 and continuing to and along the Northernmost boundary of Location 7747 and through Location 4336 to the Eastern boundary of the last-mentioned location. (Plan 89/80, D.E.F. 3.)

WHEREAS the SOUTH PERTH Road Board, by resolution passed at a meeting of the Board, held at South Perth on or about the 24th day of February, 1927, resolved to open the roads hereinafter described, that is to say:—

1261/98.

No. 7675.—A strip of land, one chain wide (widening at its junction with Labouchere Road to include two truncations having arcs of 78.5 links and tangents of 50 links), commencing at the North-Western corner of Perth Lot 643 and extending Eastward along the Northern boundary of the said lot to Labouchere Road. (Plan South Perth.)

1261/98.

No. 7676 (Amherst Street).—A strip of land, one chain wide, commencing at the South-Western corner of A Reserve 5574 and extending Eastward as surveyed along the Southern boundary of the said Reserve and the Southern boundary of A Reserve 19429 to Labouchere Road. Also to include a truncation having an arc of 78.5 links and tangents of 50 links at the junction of the Northern side of Amherst Street with the Western side of Labouchere Road. (Plan South Perth.)

WHEREAS the PLANTAGENET Road Board, by resolution passed at a meeting of the Board, held at Mount Barker on or about the 5th day of December, 1922, resolved to open the road hereinafter described, that is to say:—

7786/22.

No. 7677.—A strip of land, 50 links wide, leaving Road No. 2448 at the South-West corner of Plantagenet Location 927 and extending East (as shown Diagram 49139) along the South boundaries of Locations 927 and 978 to the South-East corner of the latter; thence one chain wide through Location 1132 to Road No. 5297 opposite the North-West corner of Location 3214. (Plan 445/80, B4.)

WHEREAS the DARLING RANGE Road Board, by resolution passed at a meeting of the Board, held at Kalamunda on or about the 12th day of July, 1926, resolved to open the road hereinafter described, that is to say:—

3554/26.

No. 7678.—A strip of land, one chain wide, leaving Road No. 1136 in Canning Location 429 and extending Eastward (as shown Diagram 49981) through the said location to the West boundary of Location 634. (Plan 1C/40, D4.)

WHEREAS the SWAN Road Board, by resolution passed at a meeting of the Board, held at Midland Junction on or about the 14th day of December, 1926, resolved to open the road hereinafter described, that is to say:—

5647/26.

No. 7679.—A strip of land, 50 links wide, commencing at the North-East corner of Swan Location 207 and extending North (as shown Diagram 49979) along part of an East boundary of Location 1253 to Road No. 18.

0 acres 2r. 17p. being resumed from Swan Location 1253. (Plan 1B/40, D2.)

WHEREAS the MELVILLE Road Board, by resolution passed at a meeting of the Board, held at Bicton on or about the 2nd day of February, 1927, resolved to open the road hereinafter described, that is to say:—

1999/17.

No. 7680.—A strip of land, 30.3 links wide (narrowing in part), leaving Canning Beach Road on the Western boundary of Lots 176 and 177 of Swan Location 61 near the South-Western corner of the former lot and extending Eastward (as shown L.T.O. Diagram 6126) to the left bank of the Canning River. Also to include that portion of Lot 177 of Swan Location 61 (as shown on Diagram 49976) bounded by lines commencing on the Southern side of the road above described one chain from the Eastern boundary of said Lot 177 and ex-

tending 70deg. 25min. 1 chain; 172deg. 25min. 1 chain; thence by a circular convex arc having a length of 1 chain 44.2 links. (Plan 1D/20, S.E.)

And whereas His Excellency the Governor, pursuant to Section 17 of "The Public Works Act, 1902," by notices published in the *Government Gazette*, declared that the said lands had been set apart, taken, or resumed for the purpose of the said Roads, and that plans of the said lands might be inspected at the Department of Lands and Surveys, Perth.

And whereas the said Boards have caused a copy of the said notices to be served upon the owners and occupiers of the said lands resident within the State, or such of them as can with reasonable diligence be ascertained, either personally or by registered letter posted to their last-named places of abode.

And whereas the Governor in Executive Council has confirmed the said resolutions, it is hereby notified that the lines of communication described above are Roads within the meaning of "The Road Districts Act, 1919," subject to the provisions of the said Act.

Dated this 25th day of March, 1927.

C. G. MORRIS,
Under Secretary for Lands.

THE ROAD DISTRICTS ACT, 1919.

WHEREAS the West Australian Trustee, Executor, and Agency Company, Limited, being the owner of land over or along which the undermentioned road, in the GNOWANGERUP Road District passes, has applied to the Gnowangerup Road Board to close the said road, which is more particularly described hereunder, that is to say:—

11153/08.

G. 225.—That portion of Road No. 226, commencing at its junction with Road 5725 in Plantagenet Location 291, and extending Northward and North-Westward through the said location and along a North-Eastern boundary of same and through Locations 427 and 341 to a surveyed road on the North-Western boundary of the last-mentioned location. (Plan 436C/40, F3.)

WHEREAS the Minister for Lands, being the owner of land over or along which the undermentioned road, in the GOSNELLS Road District passes, has applied to the Gosnells Road Board to close the said road, which is more particularly described hereunder, that is to say:—

5745/26.

G. 226.—That portion of Road No. 3122 (Homestead Road) (as shown Diagram 49982) along part of the South-Western boundary of Lot 1133 of Canning Location 16; bounded by lines commencing on the said South-Western boundary 145.6 links from the Western corner of the said lot and extending South-Eastward along the said South-Western boundary for a distance of 60 links; thence Westward at an angle of 45 degrees to the aforesaid South-Western boundary for a distance of 21.2 links; thence North-Westward at a distance of 15 links from and parallel to the South-Western boundary of said Lot 1133 for a distance of 30 links; thence Northward 21.2 links to the starting point. (Plan 1D/20, S.E.)

WHEREAS Harry Kingswood, being the owner of land over or along which the undermentioned road, in the KENT Road District passes, has applied to the Kent Road Board to close the said road, which is more particularly described hereunder, that is to say:—

778/18.

K.155.—The surveyed road along the East boundary of Kojonup Location 2441, and part of the Northernmost boundary of Location 4986; from Road No. 2489 at the North-East corner of the former location, to the North-East corner of Location 4986 aforesaid. (Plan 408/80, D4.)

WHEREAS Arnold James White, being the owner of land over or along which the undermentioned road, in the MECKERING Road District passes, has applied to the Meckering Road Board to close the said road, which is more particularly described hereunder, that is to say:—

12233/09.

M. 239.—The surveyed road commencing on the South-Western boundary of Avon Location 4497 and extending Westward through Location 12751 for a distance of 49 chains 91 links to a surveyed road passing through the latter location. (Plan 27B/40, F2.)

WHEREAS H. M. Wilson and F. J. Robey, being the owners of land over or along which the undermentioned roads, in the MOORA Road District pass, have applied to the Moora Road Board to close the said roads, which are more particularly described hereunder, that is to say:—

239/06.

M. 240.—The surveyed road along the West boundary of Lot M. 26 of Melbourne Location 916, the Westernmost, the North-West, and a West boundary of Lot M. 276 and part of the South-West boundary of Lot M. 275; from Road No. 964 at the South-Western corner of the first-mentioned lot, to Road No. 3455 at its intersection with the South-Western boundary of Lot M. 275 aforesaid.

Also the surveyed road along part of the North boundary of Lot M. 286 of Locations 908 and 916; from Road No. 3455 to closure described in paragraph (1). (Plan 58/80, D1.)

WHEREAS L. E. Smith, being the owner of land over or along which the undermentioned road, in the NORTHAM Road District passes, has applied to the Northam Road Board to close the said road, which is more particularly described hereunder, that is to say:—

597/02.

N. 168.—The whole of Road No. 1397; from one chain South-Westward from the South corner of Avon Location 1036, to Road No. 1269 at the North corner of Location 6. (Plan 27C/40, E3.)

WHEREAS Thomas H. Halse and James and Robert R. McGill, being the owners of land over or along which the undermentioned road, in the VICTORIA PLAINS Road District passes, have applied to the Victoria Plains Road Board to close the said road, which is more particularly described hereunder, that is to say:—

9412/04.

V. 49.—The surveyed road along the South boundary of Melbourne Location 1583; from a surveyed road at its South-West corner, to Road No. 2304 at its South-East corner. (Plan 32/80, B1.)

And whereas such applications have been duly published in the *Government Gazette*:

And whereas the said Boards have assented to the said applications:

And whereas the Governor in Executive Council has confirmed the said assents:

It is hereby notified that the said Roads are closed.

Dated this 25th day of March, 1927.

C. G. MORRIS,
Under Secretary for Lands.

THE ROAD DISTRICTS ACT, 1919.

Closure of Road.

I, TOM SHAW OSBORNE, being the owner of land over or along which the portion of road hereunder described passes, have applied to the Kent Road Board to close the said portion of road, viz.:—

Kent.

5579/25.

K. 157.—The surveyed road passing along the North boundary of Williams Location 9786; from a surveyed road at its North-West corner, to a surveyed road at its North-East corner. (Plan 407/80, C3.)

TOM SHAW OSBORNE.

I, Alfred John Blundy, on behalf of the Kent Road Board, hereby assent to the above application to close the road therein described.

A. J. BLUNDY,
Chairman Kent Road Board.

15th March, 1927.

SALMON GUMS LAND AGENCY.

Fitzgerald District (about seven miles south-west of Grass Patch).

Corr. No. 2211/33. (Plan 402/80, F1 & 2.)

Locations 165 and 1477, containing 999a. 3r. 2p., at 3s. 9d. per acre; classification page 7 of File 2211/33; subject to payment for improvements; being M. Sime's forfeited Lease 68/4081.

SOUTHERN CROSS LAND AGENCY.

Yilgarn District (about 11½ miles north-east of Bullfinch).

Corr. No. 4906/29. (Plan 53/80, D and E 3 & 4.)

Location 1312, containing 991a 3r. 1p., at 3s. per acre; classification page 8 of File 4906/29; subject to payment for improvements and to mining and timber conditions; being A. V. Gissing's forfeited Lease 68/2387.

WAGIN LAND AGENCY.

Kojonup District (about five miles south-east of Bokal).

Open under Part V. (secs. 47 and 49 only).

Corr. No. 3376/27. (Plan 409D/40, A4.)

Locations 4601, 4602, 4603, 4604, 4605, 4606 and 4607, containing 1,126a., at 5s. per acre; classification page 16 of 3713/24; subject to Agricultural Bank indebtedness and to the condition that the poison must be eradicated to the satisfaction of the Minister for Lands before the Crown grant will issue; being C. G. I. Clugston's forfeited Lease 21904/68.

Williams District (about three and a half miles south-east of Kukerin).

Corr. No. 5890/25. (Plan 408/80, F1.)

Locations 14204 and 13196, containing 932a. 2r. 24p., at 4s. 3d. per acre; classification page 4 of File 5890/25; subject to Agricultural Bank and Industries Assistance Board indebtedness and to the condition that the poison must be eradicated to the satisfaction of the Minister for Lands before the Crown grant will issue; being L. J. B. Liddell's forfeited Leases 20205/68 and 24994/74.

THURSDAY, 6th FEBRUARY, 1941.

BRIDGETOWN LAND AGENCY.

Nelson District (about four miles west of Hester).

Open under Part V., Section 53.

Corr. No. 2561/37. (Plan 439B/40, E1.)

Location 11294, containing 5a. 2r. 30p., at 20s. per acre (excluding survey fee); classification page 22 of File 2561/37, available subject to reservation of marketable timber to the Crown and to protection under Forest Regulation 81 of improvements effected by the Forest Lessee.

G. L. NEEDHAM,
Under Secretary for Lands.

LAND OPEN FOR PASTORAL LEASING.

Under Part VI. of the Land Act, 1933-1939.

IT is hereby notified that the land described hereunder will be available for general selection under Part VI. of the Land Act, 1933-1939, on and after the date specified:—

WEDNESDAY, 12th FEBRUARY, 1941.

PERTH LAND AGENCY.

North-West Division.

Gregory District (near Mt. Brockman).

Corres. 1585/28. (Plans 96/300 and 97/300.)

Those areas of unsurveyed land containing about 20,480, 20,480, 20,480, and 15,566 acres; being R. R. Williams' forfeited Pastoral Lease Nos. 394/868, 394/674, 394/673, and 394/753, respectively.

WEDNESDAY, 19th FEBRUARY, 1941.

PERTH LAND AGENCY.

Eastern Division—Ngalbain District (about 18 miles south-west of Widgemooltha).

Corr. No. 2005/36. (Plan 18/300.)

That area of unsurveyed land, containing about 32,121 acres, being The West Australian Goldfields Firewood Supply, Limited, of Kurrawang, forfeited Pastoral Lease No. 395/802.

G. L. NEEDHAM,
Under Secretary for Lands.

THE ROAD DISTRICTS ACT, 1919-1939.

Department of Lands and Surveys,
Perth, 15th January, 1941.

IT is hereby declared that the undermentioned lands have been set apart, taken, or resumed under section 17 of the Public Works Act, 1902, for the purpose of new roads, that is to say:—

Preston.

3130/98.

No. 745: Widenings:—

1. That part of Wellington Location 3713 bounded by lines commencing on its northern boundary 10 chains 40.4 links from its north-western corner and extending (as shown on Diagram No. 59737) 103deg. 17min. 6 chains 75.1 links and 147deg. 49min. 4 chains 18.3 links along the northern side of the present road; thence 310deg. 20min. 3 chains 37.3 links, 302deg. 13min. 3 chains 33.1 links, and 228deg. 22min. 3 chains 59.4 links through said location to the starting point.

2. That part of Wellington Location 3712 bounded by lines starting on opposite side of present road at a point situated about 125 links eastward from the southern corner of the above described area and extending (as shown on said Diagram 59737) 147deg. 49min. 94.6 links; thence 121deg. 44min. 2 chains 63.5 links; thence 304deg. 35min. 1 chain 33.3 links; thence 310deg. 58min. 2 chains 18 links through said location to the starting point.

3. That part of said Location 3713 bounded by lines starting on its northern boundary at a point situated 305deg. 2min. 2 chains 54.8 links and 324deg. 49min. 10 chains 81.1 links from its north-eastern corner and extending (as shown on Diagram 59737) 319deg. 1min. 1 chain 97.4 links and 306deg. 22min. 1 chain 95.8 links through said location; thence 121deg. 44min. 2 chains 8.9 links and 144deg. 49min. 1 chain 90 links along said side of the present road to the starting point.

4. That part of Wellington Location 3714 bounded by lines starting on a northern boundary of said Location 125deg. 2min. 10 chains 83 links and 105deg. 19min. 17 chains 87.1 links from a north-western corner of the said location and extending (*vide* said Diagram 59737) 105deg. 19min. 1 chain 44.3 links and 124deg. 10min. 1 chain 95 links along the southern side of the present road; thence 296deg. 10min. 3 chains 34.9 links through said location to the starting point.

5. That part of Wellington Location 3714 bounded by lines commencing on the southern side of said road in the said location 276deg. 49min. 8 chains 25.2 links and 123deg. 34min. 3 chains 74 links from a north-eastern corner of the said location and extending (*vide* said Diagram) 295deg. 41min. 3 chains 33.4 links and 284deg. 35min. 2 chains 70.4 links through said location; thence 94deg. 57min. 2 chains 79 links and 123deg. 34 links 3 chains 41.1 links along the said side of the present road to the starting point.

6. That part of State Forest No. 29 bounded by lines commencing at a point on the southern side of the present road situated about 93deg. 10 chains 109deg. 51min. 8 chains 20 links and 89deg. 16min. 9 and 1/10th links from prolongation south of west boundary of the said location and extending (as shown on Diagram No. 59737) 89deg. 16min. 6 chains 55.8 links and 115deg. 44min. 4 chains 24.8 links along the southern side of said road; thence 279deg. 37min. 10 chains 53 links through said State Forest to starting point.

2r. 12.1p. being resumed from Wellington Location 3713.

6.2p. being resumed from Wellington Location 3712.

29.9p. being resumed from Wellington Location 3714. (Plan 414B/40, D1.)

Albany.

5723/98.

No. 992: Widening:—That part of Kalgan Lot 24 bounded by lines starting on its northern boundary 3 chains 28.3 links from its north-eastern corner and extending (as shown on Diagram No. 44312) 253 deg. 12min. 2 chains 22 links through said lot; thence 45deg. 80.8 links and 87deg. 25min. 1 chain 55.5 links along its northern boundary to the starting point.

6.8p. being resumed from Kalgan Lot 24. (Plan Kalgan Townsite.)

Narrogin.

9708/97.

No. 1243: Widenings:—

1. That portion of Williams Location 9657, bounded by lines commencing at its south-western corner and extending (as shown on Diagram No. 60212) 326deg. 22 min. 5 chains 99.3 links along its south-western boundary; thence 132deg. 31min. 5 chains 46.7 links and 105deg. 9min. 5 chains 52.1 links through said location and 271 deg. 26min. 6 chains 4.2 links along its south boundary to the starting point.

2. That portion of Williams Location 2235 bounded by lines starting at its western corner and extending (as shown on said Diagram) 62deg. 56min. 3 chains 19.5 links along its north-western boundary; thence 209deg. 45min. 2 chains 2.9 links and 167deg. 29min. 2 chains 13 links through location, and 316deg. 2min. 3 chains 31.3 links along the south-western boundary to the starting point.

3. That portion of Williams Location 928 bounded by lines commencing at its north-eastern corner and extending (as shown on said Diagram) 136deg. 2min. 4 chains 70 links along its north-eastern boundary; thence 305deg. 15min. 4 chains 39.7 links and 282deg. 19min. 4 chains 51.1 links through said location; thence 91deg. 26min. 4 chains 73.8 links along the north boundary to the starting point.

3r. 6p. being resumed from Williams Location 9657.

1r. 17.8p. being resumed from Williams Location 2235.

1r. 23.2p. being resumed from Williams Location 928. (Plan 385 A/40, B & C1.)

Bridgetown.

9807/99.

No. 1540: Deviations:—

1. A strip of land, one chain wide, its eastern side leaving the western side of present road in Nelson Location 706 at a point approximately 43 chains from its south boundary and extending (as shown on Diagram No. 59701), 340deg. 53min. 5 chains 58.6 links and 351 deg. 55min. 4 chains 56.1 links through said location to rejoin said side of the present road in said location.

2. A strip of land, one chain wide, its western side leaving the eastern side of the present road in said location at a point approximately 345deg. 51min. 10 chains 19.1 links and 101deg. 1 chain 2 links from the last point mentioned in the previous paragraph, and extending (as shown on said Diagram), 345deg. 51min. 44.2 links and 323deg. 30min. 5 chains 64.7 links and 320deg. 2min. 6 chains 40.6 links through said location to rejoin said side of the present road in the same location.

1r. 33.9p. being resumed from Nelson Location 706. (Plan 438A/40, A2.)

Melville.

1999/17.

No. 10002: A strip of land, varying between half a chain and 2¼ chains in width, commencing at Canning highway and extending (as shown on L.T.O., Diagram No. 11732) northward along the eastern boundaries of Lots 177 and 176 of Swan Location 61 (L.T.O. Diagrams Nos. 2759 and 6126) and westward along the northern boundary of the latter to Canning Beach road.

About 2r. 6.4p. being resumed from Canning Location 61. (Plan 1D/20, N.E.)

Melville.

1999/17.

No. 2172: Kintail road (widening):—That portion of Lot 177 of Swan Location 61 abutting on the northern side of the present road from its intersection with the north-western side of Canning highway to the eastern side of Canning Beach road, being portion of the land coloured green on Land Titles Office Diagram No. 11732.

About 7 perches being resumed from Swan Location 61. (Plan 1D/20, S.E.)

Quairading.

356/39.

No. 2850: Extension:—A strip of land, one chain wide, leaving the terminus of the present road on the north boundary of Avon Location 17704 and extending west along part of said boundary and through Location 23546 to Road No. 3785. (Plan 343B/40, D1.)

Armadale-Kelmscott.

4046/12.

No. 3055: Deviation:—A strip of land, one chain wide, its southern side starting on the north-eastern corner of Karragullen Lot 38 and extending (as on Plan No. 5319) 302deg. 52min. 9 chains 20.3 links through said lot to rejoin said side of the present road. (Plan Karragullen.)

Nannup.

3856/22, Vol. 3.

No. 3069: Deviation:—A strip of land, one chain wide, leaving the present road on the south-eastern boundary of Nelson Location 8564 and extending (as shown on Diagram No. 59749) eastward through Locations 8311 and 11069 to rejoin the old road in the latter location.

1a. 0r. 10.7p. being resumed from Nelson Location 8311.

21.6p. being resumed from Nelson Location 11069. (Plan 439A/40, C2.)

Dowerin.

4751/20.

No. 6432: Widening of part:—Those portions of Avon Locations 6924 and 10515 bounded by lines commencing at the intersection of the western side of the present road with the north boundary of the former location and extending (as shown Diagram 58982) northward 6 chains 80.2 links along said side of road; thence 195deg. 31min. 2 chains 97.7 links, 187deg. 21min. 4 chains 32.4 links, 175deg. 41min. 10 chains 23 links, 150deg. 46min. 3 chains 57.4 links, and 142deg. 20min. 7 chains 69.6 links to said western side of the road and northward along it to the starting point.

5a. 3r. 19p. being resumed from Avon Location 6924.

1r. 31p. being resumed from Avon Location 10515. (Plan 33A/40, A1 & 2.)

Carnamah.

3910/24.

No. 7464: Deviation:—

1. A strip of land, varying between two chains and three chains, 40 links in width, commencing on the present road in Lot M765 of Victoria Location 2022, 51 chains 34.5 links from the south corner of Lot M759 and extending (as on Diagram No. 60749) southward through Lot M765 to present road in same.

2. That part of Lot M765 bounded by lines starting on the western side of the present road in said lot and extending (as shown on said Diagram) 135deg. 8min. 15 chains 21.4 links and 161deg. 39min. 18 chains 15.2 links along the said side; thence northward along the eastern side of the road along the Midland Railway Reserve for 11 chains 46.4 links; thence 329deg. 1min. 17 chains 42.1 links through said lot to the starting point.

3. The part of said Lot M765 bounded by lines commencing on the western side of the present road in said lot and extending (as shown on said Diagram) 179deg. 30min. 4 chains 66.6 links along said side; thence northward along the eastern side of road along the said railway reserve for a distance of 1 chain 52.8 links; thence 20deg. 7min. 3 chains 20.5 links through said lot to the starting point.

9a. 1r. 12p. being resumed from Victoria Location 2022. (Plan 95/80, A1.)

Bayswater.

3918/40.

No. 10111: Lincoln road:—A strip of land, one chain wide, leaving Wellington road at the south-western corner of Lot 17 of Swan Location 1214 (L.T.O. Plan No. 166) and extending east along the south boundaries of the said lot and Lots 11, 9, 7, 5, 1 of Block C and Lot 17, 15 13, 11, 9, 7, 5 and 1 of Block A to Napier road.

5a. 0r. 20.2p. being resumed from Swan Location 1214. (Plan 1A/40.)

Albany.

662/39.

No. 10117: Deviation:—A strip of land, one chain wide (widening at its commencement, in Plantagenet Location 486 and at its terminus) leaving the present road on the south boundary of Plantagenet Location 2924, 10 chains 77.3 links east of road No. 1185 and extending (as shown on Diagram No. 57436) eastward through that location and Location 486 to rejoin the said road on the latter's south boundary. (Plan 457A/40, B1.)

THE ROAD DISTRICTS ACT, 1919-1939.

Department of Lands and Surveys,
Perth, 14th February, 1941.

IT is hereby declared that the undermentioned lands have been set apart, taken, or resumed under section 17 of the Public Works Act, 1902, for the purpose of new roads, that is to say:—

West Arthur.

8046/04.

No. 2468: Extension:—A strip of land, commencing one chain wide and widening to 150 links, its northern side leaving the northern side of the present road at the latter's junction with the eastern side of a closed road (late Road No. 4397) in Kojonup Location 2082 and extending westward, passing over said closed road and through said location to the latter's western boundary. (Plan 415A/40, E2.)

Narrogin.

3055/08.

No. 3177:

Widening:—Portion of Narrogin A.A. Lot 57 bounded by lines commencing at a north-western corner of same and extending (as shown on Diagram No. 60228) east along its north boundary for a distance of 5 chains 24.5 links; thence 263deg. 26min. 2 chains 99.9 links, 247deg. 32min. 3 chains 64.9 links, 4deg. 31min. 95.9 links; thence 47deg. 1 chain 41.4 links to the starting point.

Deviation:—A strip of land, one chain wide (widening in parts), its eastern side leaving the south-eastern side of the present road on the north-western boundary of Narrogin A.A. Lot 46, 10 chains 12.6 links from its northern corner and extending (as shown on Diagram No. 60228), 25deg. 29min. 13 chains 49.5 links, 39deg. 35min. 5 chains 15.5 links, and 50deg. 29min. 1 chain 39.1 links to the eastern side of the old road.

2a. 0r. 28.6p. being resumed from Narrogin A.A. Lot 47.

1r. 25.5p. being resumed from Narrogin A.A. Lot 57. (Plan 385B/40, D1.).

Kellerberrin.

3307/12.

No. 4632: Extension:—A strip of land, one chain wide, widening on the east boundary of Avon Location 13209 (as shown on Diagram No. 61011), leaving the present road on the western boundary of Avon Location 19997 and extending south along part of said boundary and the western boundaries of Locations 13207, 10724, and 13213 to a surveyed road at the south-west corner of the last-mentioned location (Plan 25/80, D3.).

Wongan-Ballidu.

674/16.

No. 5616: Deviation:—A strip of land, one chain wide (widening in parts), leaving the present road on the westernmost boundary of Avon Location 18226 at a point situate 22 chains 27.6 links from a south-western corner of said location on the northern boundary of Location 10278 and extending (as shown on O.P. No. 5720) northward through said Location 18226 and Wongan Hills Town Lots 168, 169, and 170 and to and through portion of the Wongan Hills Railway Reserve and Reserve No. 17912 to Fenton street in the Wongan Hills townsite; thence following Fenton street to the west corner of Lot 95; thence continuing northward (as shown on Diagram No. 58964) through said townsite reserve and Reserve No. 16418 to a surveyed road in the last-mentioned reserve near the southern boundary of Location 3035.

3a. 1r. 22p. being resumed from Avon Location 18226.

1a. 1r. 4.7p. being resumed from Wongan Hills Lot 168.

2r. 18.5p. being resumed from Wongan Hills Lot 169.

2a. 3r. 14p. being resumed from Wongan Hills Lot 170. (Plan 57/80, D3 and 4, and Wongan Hills Townsite.)

Kellerberrin.

563/37.

No. 9749: Widenings:—

(a) Portion of Avon Location 18447 bounded by lines commencing at its south-west corner and extending (as shown on Diagram No. 61012) north along part of its west boundary for a distance of 1 chain; thence 135deg. 2min. 1 chain 41.4 links through said location; thence west along part of its south boundary to the starting point.

(b) Portion of Avon Location 25055 bounded by lines commencing at the junction of the north side of the present road with the easternmost boundary of said location and extending (as shown on Diagram No. 61012) west 1 chain along the said side of the said road; thence 45deg. 1min. 1 chain 41.5 links through said location and 180deg. 2min. 1 chain along its east boundary to starting point.

(c) Portion of Avon Location 25055 bounded by lines commencing at the junction of the south side of the present road with the easternmost boundary of said location and extending (as shown on Diagram No. 61012) south 1 chain along part of said boundary; thence 315deg. 1min. 1 chain 41.4 links to the south side of the present road; thence east 1 chain along part of the south side of the present road to the starting point. (Plan 25/80, C1.)

Gingin.

981/29.

No. 10114:—A strip of land, one chain wide, commencing at the north-west corner of Swan Location 819 and extending north-westward passing through Lot M801 of Swan Location 1374 to Road No. 8503 on the north boundary of the latter.

3a. 2r. 8p. being resumed from Swan Location 1374. (Plan 30/80, E4.)

Narrogin.

3055/08.

No. 10120:—A strip of land, one chain wide, leaving a surveyed road at the south-west corner of Narrogin A.A. Lot 57 and extending northward along its western boundary to Road No. 3177. (Plan 385B/40, D1.)

Swan.

109/25.

No. 10126:—A strip of land, one chain wide, being Swan Location 3169, leaving Road No. 8687, at the south-eastern corner of Swan Location 3054 and extending west along the south boundary of the latter location to its south-west corner.

1a. 0r. 14.6p. being resumed from Swan Location 3169. (Plan 28/20, D4.)

Plans and more particular descriptions of the lands so set apart, taken, or resumed may be inspected at the Department of Lands and Surveys, Perth.

By order of His Excellency the Lieutenant-Governor,

F. J. S. WISE,
Minister for Lands.

THE ROAD DISTRICTS ACT, 1919-1939.

WHEREAS the PRESTON Road Board, by resolution passed at a meeting of the Board, held at Donnybrook on or about the 18th day of February, 1939, resolved to open the road hereinafter described, that is to say:—

3130/98.

No. 745: Widenings:—

1. That part of Wellington Location 3713 bounded by lines commencing on its northern boundary 10 chains 40.4 links from its north-western corner and extending (as shown on Diagram No. 59737) 103deg. 17min. 6 chains 75.1 links and 147deg. 49min. 4 chains 18.3 links along the northern side of the present road; thence 310deg. 20min. 3 chains 37.3 links, 302deg. 13min. 3 chains 33.1 links, and 288deg. 22min. 3 chains 59.4 links through said location to the starting point.

2. That part of Wellington Location 3712 bounded by lines starting on the northern side of the present road at a point situated about 125 links eastward from the southern corner of the above described area and extending (as shown on said Diagram 59737) 147deg. 49min. 94.6 links; thence 121deg. 44min. 2 chains 63.5 links; thence 304deg. 35min. 1 chain 33.3 links; thence 310deg. 58min. 2 chains 18 links through said location to the starting point.

3. That part of said Location 3713 bounded by lines starting on its northern boundary at a point situated 305deg. 2min. 2 chains 54.8 links and 324deg. 49min. 10 chains 81.1 links from its north-eastern corner and extending (as shown on Diagram 59737) 319deg. 1min. 1 chain 97.4 links and 306deg. 22min. 1 chain 95.8 links through said location; thence 121deg. 44min. 2 chains 8.9 links and 144deg. 49min. 1 chain 90 links along said side of the present road to the starting point.

4. That part of Wellington Location 3714 bounded by lines starting on a northern boundary of said Location 125deg. 2min. 10 chains 83 links and 105deg. 19min. 17 chains 87.1 links from a north-western corner of the said location and extending (*vide* said Diagram 59737) 105deg. 19min. 1 chain 44.3 links and 124deg. 10min. 1 chain 95 links along the southern side of the present road; thence 296deg. 10min. 3 chains 34.9 links through said location to the starting point.

5. That part of Wellington Location 3714 bounded by lines commencing on the southern side of said road in the said location 276deg. 49min. 8 chains 25.2 links and 123deg. 34min. 3 chains 74 links from a north-eastern corner of the said location and extending (*vide* said Diagram) 295deg. 41min. 3 chains 33.4 links and 284deg. 35min. 2 chains 70.4 links through said location; thence 94deg. 57min. 2 chains 79 links and 123deg. 34 links 3 chains 41.1 links along the said side of the present road to the starting point.

6. That part of State Forest No. 29 bounded by lines commencing at a point on the southern side of the present road situated about 93deg. 10 chains 109deg. 51min. 8 chains 20 links and 89deg. 16min. 9 and 1/10th links from prolongation south of west boundary of the said location and extending (as shown on Diagram No. 59737) 89deg. 16min. 6 chains 55.8 links and 115deg. 44min. 4 chains 24.8 links along the southern side of said road; thence 279deg. 37min. 10 chains 53 links through said State Forest to starting point. (Plan 414B/40, F1.)

WHEREAS the ALBANY Road Board, by resolution passed at a meeting of the Board, held at Albany on or about the 17th day of November, 1939, resolved to open the road hereinafter described, that is to say:—

5723/98.

No. 992: Widening:—That part of Kalgan Lot 24 bounded by lines starting on its northern boundary 3 chains 28.3 links from its north-eastern corner and extending (as shown on Diagram No. 443121 253 deg. 12min. 2 chains 22 links through said lot; thence 45deg. 80.8 links and 87deg. 25min. 1 chain 55.5 links along its northern boundary to the starting point. (Plan Kalgan Townsite.)

WHEREAS the NARROGIN Road Board, by resolution passed at a meeting of the Board, held at Narrogin on or about the 6th day of May, 1939, resolved to open the road hereinafter described, that is to say:—

9708/97.

No. 1243: Widenings:—

1. That portion of Williams Location 9657, bounded by lines commencing at its south-western corner and extending (as shown on Diagram No. 60212) 326deg. 22 min. 5 chains 99.3 links along its south-western boundary; thence 132deg. 31min. 5 chains 46.7 links and 105deg. 9min. 5 chains 52.1 links through said location and 271deg. 26min. 6 chains 4.2 links along its south boundary to the starting point.

2. That portion of Williams Location 2235 bounded by lines starting at its western corner and extending (as shown on said Diagram) 62deg. 56min. 3 chains 19.5 links along its north-western boundary; thence 209deg. 45min. 2 chains 2.9 links and 167deg. 29min. 2 chains 13 links through said location, and 316deg. 2min. 3 chains 31.3 links along its south-western boundary to the starting point.

3. That portion of Williams Location 928 bounded by lines commencing at its north-eastern corner and extending (as shown on said Diagram) 136deg. 2min. 4 chains 70 links along its north-eastern boundary; thence 305deg. 15min. 4 chains 39.7 links and 282deg. 19min. 4 chains 51.1 links through said location; thence 91deg. 26min. 4 chains 73.8 links along its north boundary to the starting point. (Plan 385 A/40, B & C1.)

WHEREAS the BRIDGETOWN Road Board, by resolution passed at a meeting of the Board, held at Bridgetown on or about the 29th day of August, 1938, resolved to open the road hereinafter described, that is to say:—

9807/99.

No. 1540: Deviations:—

1. A strip of land, one chain wide, its western side leaving the western side of the present road in Nelson Location 706 at a point approximately 43 chains from its south boundary and extending (as shown on Diagram No. 59701), 340deg. 53min. 5 chains 58.6 links and 351 deg. 55min. 4 chains 56.1 links through said location to rejoin said side of the present road in said location.

2. A strip of land, one chain wide, its eastern side leaving the eastern side of the present road in location 706 at a point approximately 345deg. 51min. 10 chains 19.1 links and 101deg. 1 chain 2 links from the last point mentioned in the previous paragraph, and extending (as shown on said Diagram), 345deg. 51min. 44.2 links and 323deg. 30min. 5 chains 64.7 links and 320deg. 2min. 6 chains 40.6 links through said location to rejoin said side of the present road. (Plan 438A/40, A2.)

WHEREAS the MELVILLE Road Board, by resolution passed at a meeting of the Board, held at Bicton on or about the 22nd day of April, 1940, resolved to open the road hereinafter described, that is to say:—

1999/17.

No. 2172: Kintail road (widening):—That portion of Lot 177 of Swan Location 61 abutting on the northern side of the present road from its intersection with the north-western side of Canning highway to the eastern side of Canning Beach road, being portion of the land coloured green on Land Titles Office Diagram No. 11732. (Plan 1D/20, S.E.)

WHEREAS the QUAIRADING Road Board, by resolution passed at a meeting of the Board, held at Quairading on or about the 24th day of April, 1939, resolved to open the road hereinafter described, that is to say:—

356/39.

No. 2850: Extension:—A strip of land, one chain wide, leaving the terminus of the present road on the north boundary of Avon Location 17704 and extending west along part of said boundary and through Location 23546 to Road No. 3785. (Plan 343B/40, D1.)

WHEREAS the DOWERIN Road Board, by resolution passed at a meeting of the Board, held at Dowerin on or about the 14th day of September, 1939, resolved to open the road hereinafter described, that is to say:—

4751/20.

No. 6432: Widening of part:—Those portions of Avon Locations 6924 and 10515 bounded by lines commencing at the intersection of the western side of the present road with the north boundary of the former location and extending (as shown Diagram 58982) northward 6 chains 80.2 links along said side of road; thence 195deg. 31min. 2 chains 97.7 links, 187deg. 21min. 4 chains 32.4 links, 175deg. 41min. 10 chains 23 links, 150deg. 46min. 3 chains 57.4 links, and 142deg. 20min. 7 chains 69.6 links to said western side of the road and northward along it to the starting point. (Plan 33A/40, A1 & 2.)

WHEREAS the THREE SPRINGS Road Board, by resolution passed at a meeting of the Board, held at Three Springs on or about the 17th day of April, 1939, resolved to open the road hereinafter described, that is to say:—

3910/24.

No. 7464: Deviation:—

(a) A strip of land, varying between 2 chains and 3 chains 40 links in width, commencing on the present road in Lot M765 of Victoria Location 2022, 51 chains 34.5 links from the south corner of Lot M759 and extending (as on Diagram No. 60749) southerly through Lot M765 to present road in same.

(b) That part of Lot M765 bounded by lines starting on the western side of present road in said lot and extending (as shown on Diagram) 135deg. 8min. 15 chains 21.4 links and 161deg. 39min. 18 chains 15.2 links along the said side of the present road; thence 255deg. 28min. 2.4 links; thence northward along the eastern side of the road along the Midland Railway Reserve for 11 chains 46.4 links; thence 329deg. 1min. 17 chains 42.1 links; through said lot to the starting point.

(c) The part of said Lot M765 bounded by lines commencing on the western side of the present road in said lot and extending (as on said Diagram) 179deg. 30min. 4 chains 66.6 links along the said side; thence northward along the eastern side of road along the said Railway Reserve for a distance of 1 chain 52.8 links; thence 5deg. 58min. 3 chains 20.5 links through said lot to the starting point.

WHEREAS the MELVILLE Road Board, by resolution passed at a meeting of the Board, held at Bicton on or about the 22nd day of April, 1940, resolved to open the road hereinafter described, that is to say:—

1999/17.

No. 10002: A strip of land, varying between half a chain and 2¼ chains in width, commencing at Canning highway and extending (as shown on L.T.O.. Diagram No. 11732) northward along the eastern boundaries of Lots 177 and 176 of Swan Location 61 (L.T.O. Diagrams Nos. 2759 and 6126) and westward along the northern boundary of the latter to Canning Beach road. (Plan 1D/20, S.E.)

WHEREAS the BAYSWATER Road Board, by resolution passed at a meeting of the Board, held at Bayswater on or about the 5th day of November, 1940, resolved to open the road hereinafter described, that is to say:—

3918/40.

No. 10111: Lincoln road:—A strip of land, one chain wide, leaving Wellington road at the south-western corner of Lot 17 of Swan Location 1214 (L.T.O. Plan No. 166) and extending east along the south boundaries of the said lot and Lots 11, 9, 7, 5, 1 of Block C and Lot 17, 15 13, 11, 9, 7, 5 and 1 of Block A to Napier road. (Plan 1A/40.)

WHEREAS the ALBANY Road Board, by resolution passed at a meeting of the Board, held at Albany on or before the 4th day of April, 1939, resolved to open the road hereinafter described, that is to say:—

662/39.

No. 10117: Deviation:—A strip of land, one chain wide (widening at its commencement, in Plantagenet Location 486 and at its terminus) leaving the present road on the south boundary of Plantagenet Location 2924, 10 chains 77.3 links east of road No. 1185 and extending (as shown on Diagram No. 57436) eastward through that location and Location 486 to rejoin the old road on the latter's south boundary. (Plan 457A/40, B1.)

WHEREAS the KELLERBERRIN Road Board, by resolution passed at a meeting of the Board, held at Kellerberrin on or about the 11th day of February, 1939, resolved to open the roads hereinafter described, that is to say:—

446/39.

No. 10121:—A strip of land, one chain wide (widening at its terminus), starting at the north-western corner of Doodlakine A.A. Lot 20 and extending (as shown on Diagram No. 58886) north-eastward along the northern boundary of the said lot to Baker's road. (Plan 25/80, C3.)

No. 10122: Station street, Doodlakine:—A strip of land, one chain wide (widening at its terminus, as shown on Diagram No. 58886) leaving Levitt street and extending westward to and along the northern side of the station yard to its north-western corner; the station yard reserve is hereby reduced by 22 3/10th perches. (Plan Doodlakine.)

WHEREAS the MERREDIN Road Board, by resolution passed at a meeting of the Board, held at Merredin on or about the 16th day of October, 1940, resolved to open the road hereinafter described, that is to say:—

1127/14.

No. 10138:—A strip of land, one chain wide, leaving a surveyed road at the south-west corner of Avon Location 26890 and extending north (as surveyed) along the west boundary of said location to a surveyed road at its north-west corner. (Plan 25/80, F1 & 2.)

And whereas His Excellency the Lieutenant-Governor, pursuant to section 17 of the Public Works Act, 1902, by notices published in the *Government Gazette*, declared that the said lands had been set apart, taken, or resumed for the purpose of the said roads, and that plans of the said lands might be inspected at the Department of Lands and Surveys, Perth.

And whereas the said Boards have caused a copy of the said notices to be served upon the owners and occupiers of the said lands resident within the State, or such of them as can with reasonable diligence be ascertained, either personally or by registered letter posted to their last-named places of abode.

And whereas the Lieutenant-Governor in Executive Council has confirmed the said resolution, it is hereby notified that the lines of communication described above are roads within the meaning of the Road Districts Act, 1919-1939, subject to the provisions of the said Act.

Dated this 14th day of February, 1941.

G. L. NEEDHAM,
Under Secretary for Lands.

TENDERS FOR PUBLIC WORKS.

Date of Notice.	Nature of Work.	Date and Time for Closing.	Where and when Conditions of Contract, etc., to be seen.
1941.		1941. (2·30 p.m. on Tuesday)	
Jan. 29	Carrolup Native Settlement—New Quarters for Superintendent (9134)	18th February ...	Contractors' Room, Perth, and P.W.D., Katanning, on and after Tuesday, the 4th February, 1941.
Feb. 5	King Edward Memorial Hospital—Alterations and Renovations (9136)	18th February ...	Contractors' Room, Public Works Department, Perth, on and after Tuesday, the 11th February, 1941.
Feb. 5	Claremont School—Additions to Household Management Centre (9135)	25th February ...	Contractors' Room, Public Works Department, Perth, on and after Tuesday, the 11th February, 1941.
Feb. 12	Narrogin School of Agriculture—Renovations (9138)	4th March	Contractors' Room, Public Works Department, Perth; at P.W.D., Katanning, and Court House, Narrogin, on and after Tuesday, the 18th February, 1941.
Feb. 12	Wongan Hills State Hotel—Supply and Installation of Refrigeration Plant, Cabinets, etc. (9139)	4th March	Contractors' Room, Public Works Department, Perth, on and after Tuesday, the 18th February, 1941.
Feb. 12	New Perth Hospital—Supply and Installation of Lift Doors and Frames (9140)	11th March ...	Contractors' Room, Public Works Department, Perth, on and after Tuesday, the 18th February, 1941.

Tenders, together with the prescribed deposit, are to be addressed to "The Hon. the Minister for Works, Public Works Department, The Barracks, St. George's terrace, Perth," and must be indorsed "Tender." The lowest or any tender will not necessarily be accepted.

W. S. ANDREW,
Under Secretary for Public Works.

WESTERN AUSTRALIA

TITLE NUMBER

Volume	Folio
LR3176	104

RECORD OF QUALIFIED CERTIFICATE OF CROWN LAND TITLE

UNDER THE TRANSFER OF LAND ACT 1893
AND THE LAND ADMINISTRATION ACT 1997

The undermentioned land is Crown land in the name of the STATE OF WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 501 ON DEPOSITED PLAN 425439

STATUS ORDER AND PRIMARY INTEREST HOLDER:
(FIRST SCHEDULE)

STATUS ORDER/INTEREST: ROAD

PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. P733874 DEDICATED ROAD. PURSUANT TO S28(1) LAA. REGISTERED 5/10/2023.
2. P733873 NOTIFICATION. HERITAGE ACT 2018. LODGED 5/10/2023.

Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.
(2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
(3) The interests etc. shown hereon may have a different priority than shown.

----------END OF CERTIFICATE OF CROWN LAND TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	DP425439
PREVIOUS TITLE:	LR3176-104
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	CITY OF MELVILLE
RESPONSIBLE AGENCY:	MAIN ROADS WESTERN AUSTRALIA (ROAD)

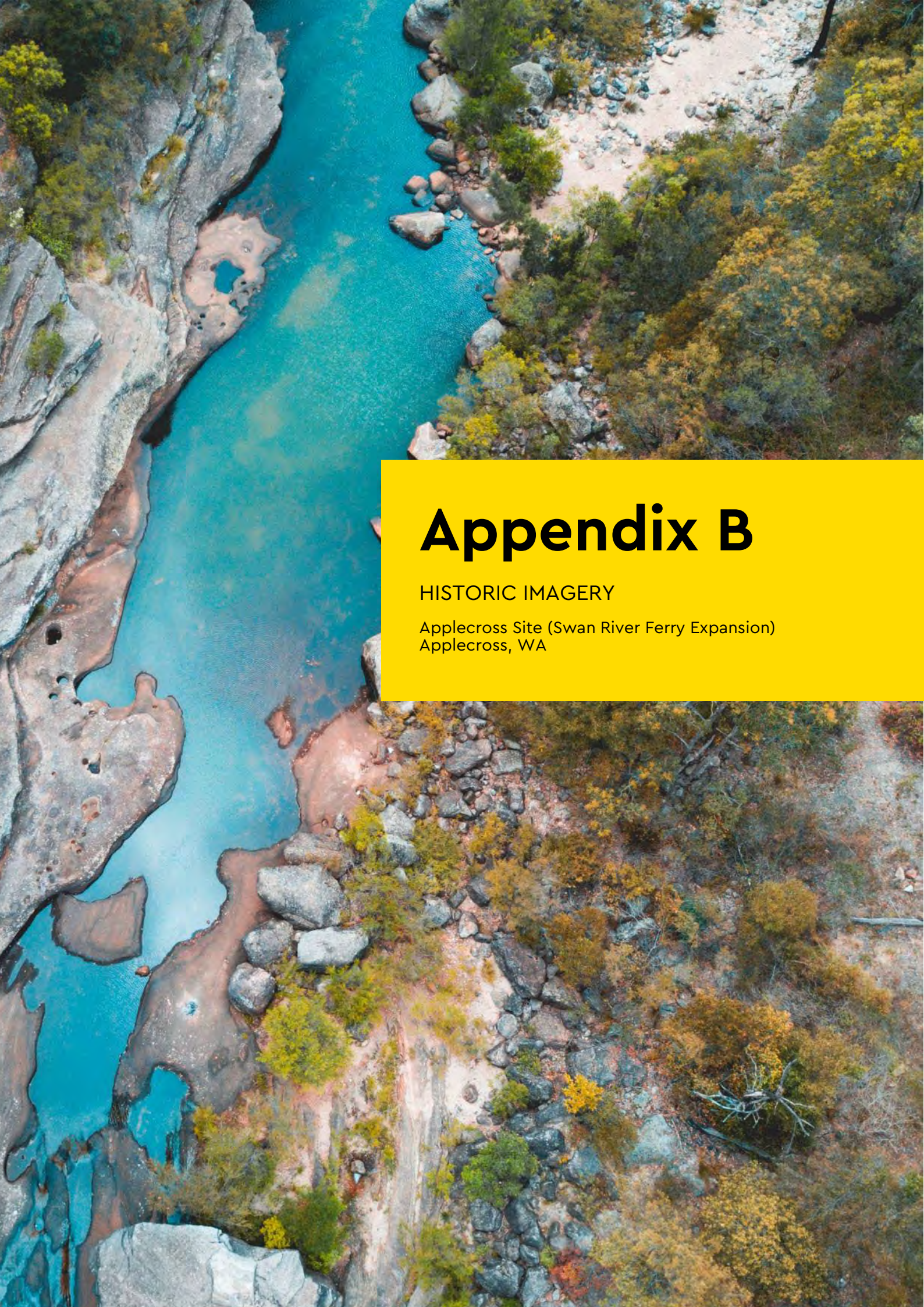
NOTE 1: P733874 CORRESPONDENCE FILE L00005-2023-01RO

LANDGATE COPY OF ORIGINAL NOT TO SCALE 08/05/2025 02:58 PM Request number: 68166652

Landgate
www.landgate.wa.gov.au

Appendix F

Historic aerial imagery



Appendix B

HISTORIC IMAGERY

Applecross Site (Swan River Ferry Expansion)
Applecross, WA

MAP B1

Historic Aerial Photograph – 1942

Subject area

0 60 120 180 240 300m

Land Insight

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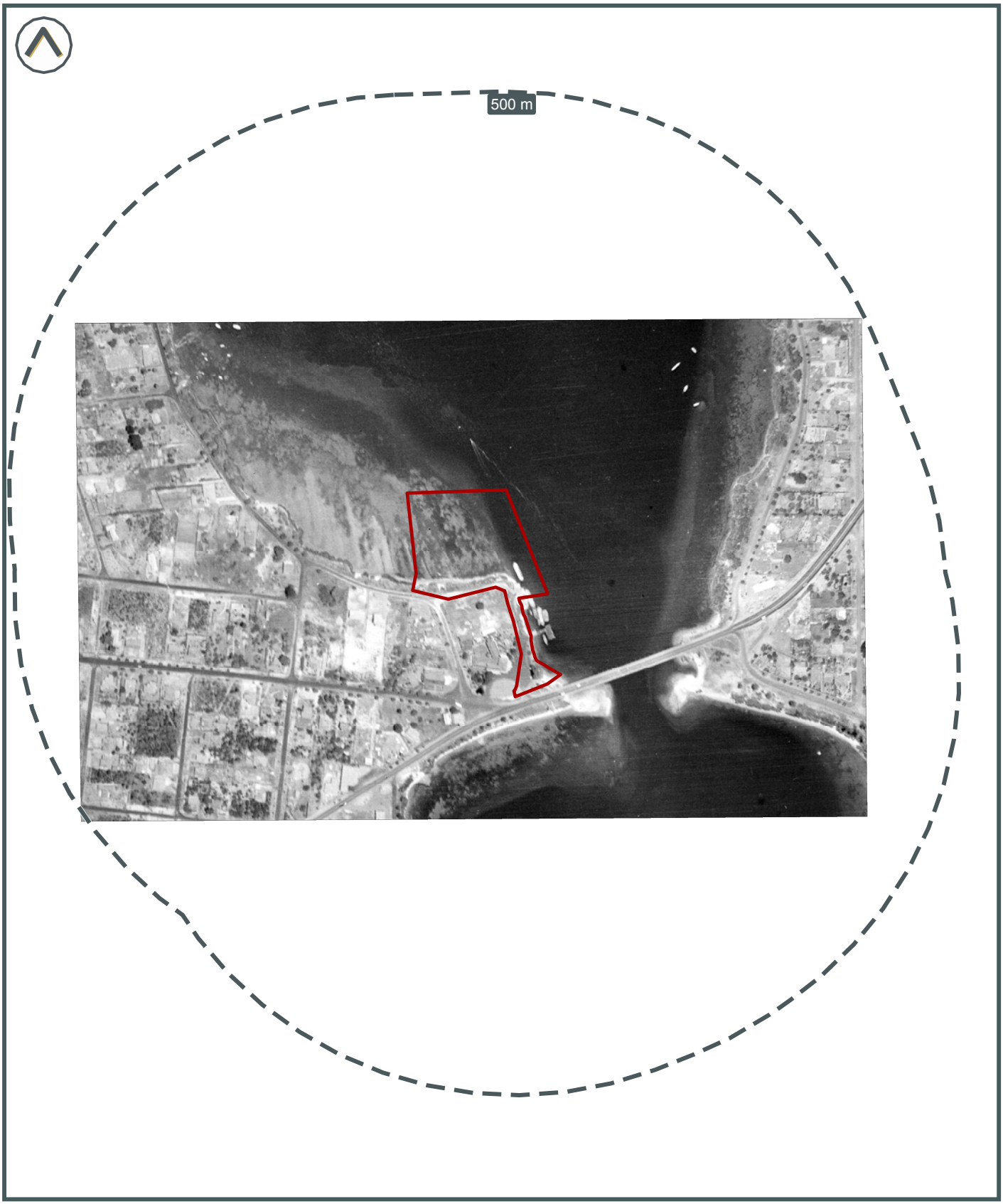
MAP B2

Historic Aerial Photograph – 1953



Subject area

0 60 120 180 240 300m

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MAP B3

Historic Aerial Photograph – 1965

Subject area

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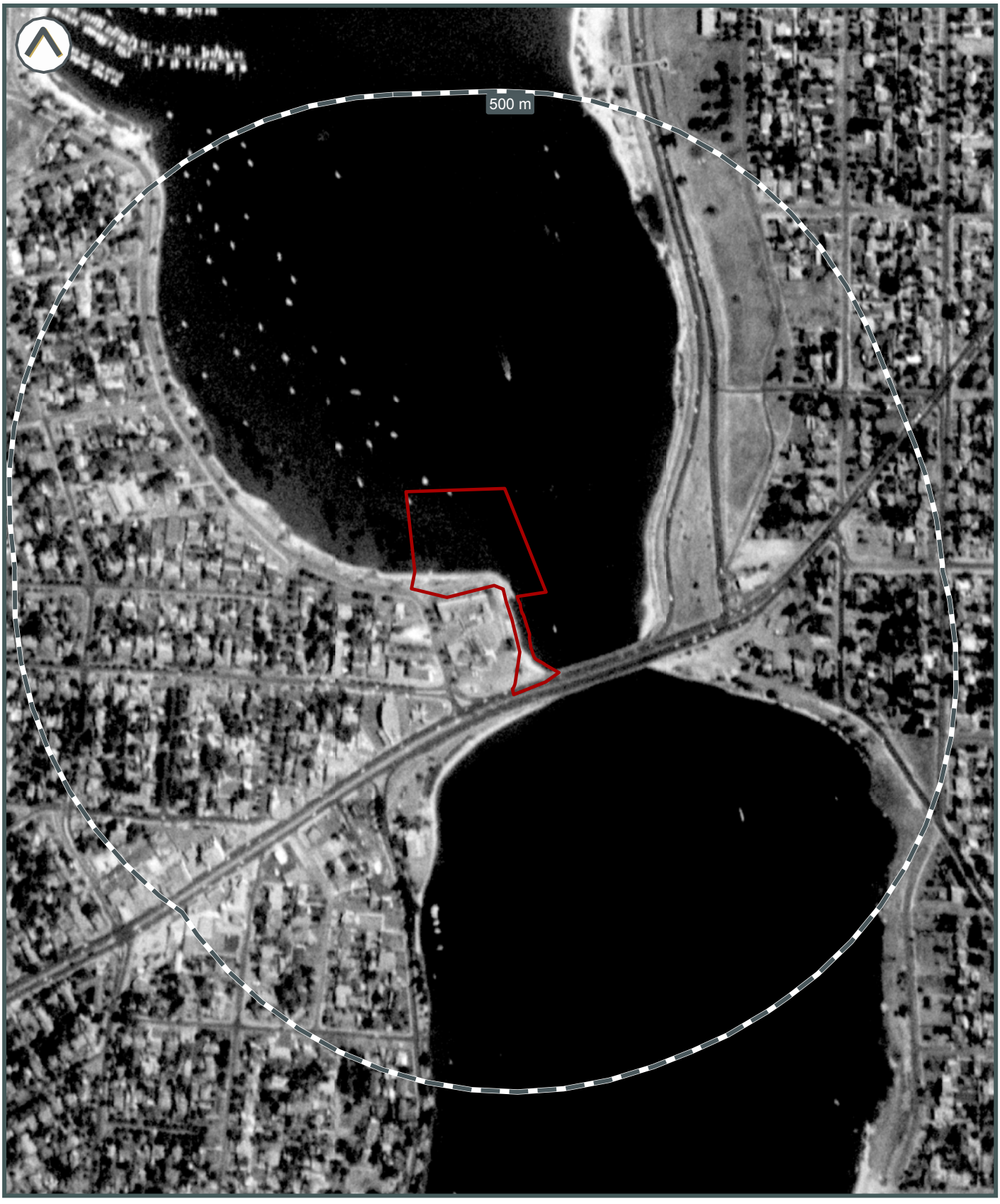
MAP B4

Historic Aerial Photograph – 1975



Subject area

0 60 120 180 240 300m

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MAP B5

Historic Aerial Photograph – 1985

Subject area

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MAP B6

Historic Aerial Photograph – 1995

Subject area

0 60 120 180 240 300m

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MAP B7

Historic Aerial Photograph – 2003

Subject area

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MAP B8

Historic Aerial Photograph – 2008

Subject area

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MAP B9

Historic Aerial Photograph – 2009

Subject area

0 60 120 180 240 300m

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MAP B10

Historic Aerial Photograph – 2011

Subject area

0 60 120 180 240 300m

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MAP B11

Historic Aerial Photograph – 2013

Subject area

0 60 120 180 240 300m

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MAP B12

Historic Aerial Photograph – 2015

Subject area

0 60 120 180 240 300m

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MAP B13

Historic Aerial Photograph – 2017

Subject area

0 60 120 180 240 300m

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MAP B14

Historic Aerial Photograph – 2019

Subject area

0 60 120 180 240 300m

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MAP B15

Historic Aerial Photograph – 2021

Subject area

0 60 120 180 240 300m

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MAP B16

Historic Aerial Photograph – 2023

Subject area

0 60 120 180 240 300m

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MAP B17

Historic Aerial Photograph – 2025

Subject area

0 60 120 180 240 300m

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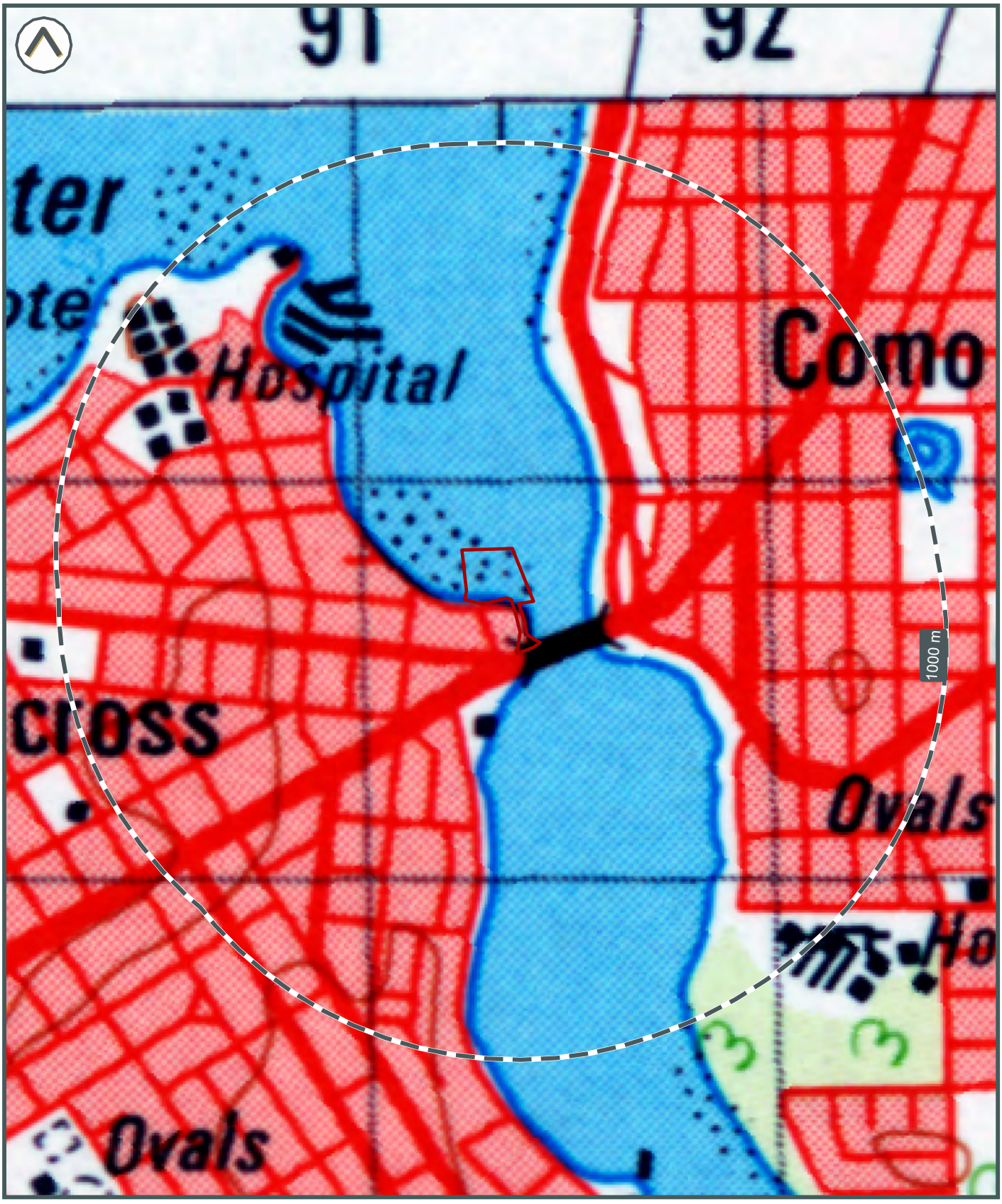
MAP B18

1:100,000 Topographic Map (Freemantle 2033, Edition 1, 1976)



Subject area

0 120 240 360 480 600m

Land Insight

©2025 Land Insight (LI) www.landinsight.co | 23/04/2025 | Data source: Please refer to 'Digital Data Sources' in the Product Guide

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Land
Insight

Appendix G

Basic summary of records

Government of Western Australia
Department of Water and Environmental Regulation

Your ref: 12658388 - Applecross
Our ref: DMO 11564
Enquiries: Registrar
Phone: 1300 762 982
Fax: (08) 6364 7001
Email: info@dwer.wa.gov.au

Att: Katherine Stockwell
GHD Pty Ltd
999 Hay St
Perth WA 6000

Dear Sir/Madam

BASIC SUMMARY OF RECORDS REQUEST

Thank you for your Basic Summary of Records request for the site consisting of the following parcel(s) of land:

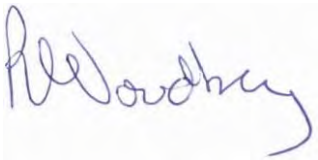
- P ROAD, Land ID 3159415 (PIN 2184137), Applecross WA 6153

which Department of Water and Environmental Regulation (the department) received on 06/05/2025.

A search of the department's records of known and suspected contaminated sites was undertaken however, our records indicate that as of 13/05/2025 this site has not been reported to the department as a known or suspected contaminated site either prior to or after the commencement of the *Contaminated Sites Act 2003*.

For general enquiries, please contact the Registrar on 1300 762 982.

Yours sincerely



Penny Woodberry, Manager

CONTAMINATED SITES REGULATION
Delegated Officer under section 91
of the *Contaminated Sites Act 2003*

13/05/2025

Enc. Receipt Number RR045150

Appendix H

FOI information

Office of the Information Commissioner

Freedom of information for Western Australia

Review of agency decisions

If you are dissatisfied with a decision made by an agency about your access application or an application where you are a third party, you have the right to apply for review of that decision. Similarly, if you have applied to an agency for amendment of your personal information and you are disatisfied with the agency's decision, you have the right to apply for review of that decision.

In most cases you can apply to the agency for an **internal review**. If you disagree with the internal review decision, or if an internal review is not available to you, you can apply to the Information Commissioner for **external review** of the decision.

Internal Review

If you disagree with a decision made by an agency about your access application or amendment application, or an access application where you are a third party, you have the right to apply to the agency for an internal review.

If the initial decision was made by the principal officer of the agency or a Minister, internal review is not available (section 39(3)). In that case, you can apply directly to the Information Commissioner for external review of the agency's decision (see below).

An internal review must be conducted by an officer of the agency who is not subordinate to the person who made the initial decision (section 41).

You can apply for internal review of a decision in relation to an access application when (section 39(2)):

- The agency refuses to deal with your access application.
- You have been refused access to some or all of the requested documents.
- You have only been given access to an edited document and you want access to the parts that were deleted.
- The agency has deferred giving you access.
- The agency has decided that medical or psychiatric information about you will only be given to you through a nominated medical practitioner.
- The agency has decided to impose a charge or require a deposit that you consider unreasonable.
- As a third party (whether consulted or not), you disagree with an agency's decision to give access to your personal or business information contained in documents requested by someone else.

You can apply for internal review of a decision in relation to an amendment application when (section 54(1)):

- The agency decides not to amend information in accordance with your amendment application.
- The agency decides not to comply with your request to make a notation or attach information.

You must apply for internal review in writing within 30 days after being given the agency's notice of decision. (The principal officer of the agency may allow you to lodge your application after the 30 days has elapsed (section 40(3)).

The agency is required to give you its internal review notice of decision within 15 days (or any longer period that is agreed to between the access or amendment applicant and the agency). It also needs to tell you that if you are dissatisfied with the decision you have a right to apply to the Information Commissioner for an external review of the agency's decision.

External Review

After internal review, if you still disagree with the agency's decision, you may lodge a complaint with the Information Commissioner seeking external review of the agency's decision. A complaint is also referred to as an application for external review. The decisions that you can apply for external review of are set out in section 65(1) (relating to access applications) and section 65(3) (relating to amendment applications).

The Commissioner is independent of executive government and reports directly to Parliament. A complaint to the Information Commissioner must:

- be in writing and include an Australian address;
- give particulars of the decision to be reviewed including details of the part(s) of the decision you want the Commissioner to review; and
- include a copy of the internal review notice of decision sent to you by the agency. If you have not received the agency's internal review decision, attach a copy of the initial notice of decision. If the initial decision was made by the agency's principal officer or a Minister, include a copy of the initial notice of decision (as there is no avenue for internal review)

If you are the access or amendment applicant, you must apply for external review within 60 days after being given the agency's decision.

If you are a third party who objects to disclosure of your information, you must apply for external review within 30 days after being given the agency's decision.

In exceptional circumstances, the Commissioner may allow a complaint to be lodged after these periods have elapsed (section 66).

Review based on delay

If an agency does not give you a decision with the timeframes allowed under the FOI Act, you may be able to seek review of a 'deemed decision'. For more information, see

our publication – *What if an agency delays making a decision?* - available on our website at https://www.oic.wa.gov.au/en-au/FTP016.

If you have any general enquiries about the FOI process, please see our website or contact our office.

Note: This Information Sheet is intended as a general guide only and should not be viewed as legal advice. The Information Commissioner considers each complaint on its merits and according to the relevant circumstances.

Office of the Information Commissioner
Phone: (08) 6551 7888
Freecall (WA country): 1800 621 244
Fax: (08) 6551 7889
Email: info@foi.wa.gov.au
Web: www.oic.wa.gov.au
Address: Albert Facey House, 469 Wellington Street, Perth WA 6000

From:	Melville Information Officer
To:	Fax-Manager
Subject:	FW: HARMFUL ALGAE CAUTION SIGNS - ALEXANDRIUM - TO BE INSTALLED BY 29 NOVEMBER 2024 - Reminder
Date:	Thursday, 14 November 2024 3:55:21 PM
Attachments:	42859 DBCA Algal Bloom Public Health Warning_585x420mm_Oct 2022_D2.pdf 2023_2024 Crab caution signs proposed locations.xlsx
Importance:	High

FW FS

From: [redacted]

Sent: Thursday, 14 November 2024 3:24 PM

To: [redacted] Melville Information Officer [redacted] @melville.wa.gov.au>; [redacted] Michael Turner [redacted] @melville.wa.gov.au> [redacted]

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[redacted] Tsyr Chiat Chew (Chiat Chew) [redacted]@melville.wa.gov.au [redacted]

Cc: [redacted]

Subject: HARMFUL ALGAE CAUTION SIGNS - ALEXANDRIUM - TO BE INSTALLED BY 29 NOVEMBER 2024 - Reminder

Importance: High

This Message Is From an External Sender

This message came from outside your organization, do not click on links or open attachments unless you are expecting them from the sender.

Report Suspicious

OFFICIAL

Attn: Local Government Environmental Health Officer,

Following significant *Alexandrium* algal blooms in 2020 and 2021 impacting recreational and commercial fishing in the Swan and Canning Rivers, the Department of Biodiversity, Conservation and Attractions (DBCA), the Department of Primary Industries and Regional Development (DPIRD) and the Department of Health (DoH) will continue to follow the Swan and Canning Rivers *Alexandrium* management approach of recent years. As the main emphasis of this approach, a 'Harmful Algae' caution sign (attached) will need to be installed at locations around the rivers advising of the risk of eating crab viscera (stomach portion of the crab).

'Harmful Algae' caution signs will be delivered to local governments by Wednesday 20 November 2024.

For this purpose DBCA, DPIRD and DoH would appreciate if local government authorities could please arrange to **install these 'Harmful Algae' caution signs by Friday 29 November 2024** (prior to the crabbing season start - 1 December 2024). The 'Harmful Algae' caution sign QR code will link to a video that demonstrates how to clean blue swimmer crabs prior to freezing, cooking and eating.

Please let DBCA know ASAP if you need to order some new 'Harmful Algae' caution signs by emailing: rivers.systems@dbca.wa.gov.au or calling [redacted] to arrange delivery.

The 'Harmful Algae' signs should be installed from Middle Swan Bridge (Reid Hwy) to Kent St Weir and down to the Fremantle traffic/rail line bridge. A list of suggested sign installation locations have been provided in the attached worksheet, but if you have any alternate or other recommended locations please advise. If permanent signage is in place with Alexandrium messaging then a temporary sign is not required in close proximity.

Please attach 'Harmful Algae' caution signs with cable ties to existing sign poles or new star pickets so that signs are visible at normal viewing height.

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Note: DBCA Marine and Riverpark Operations officers will install the 'Harmful Algae' caution signs along the North Fremantle (i.e. City of Fremantle) side of the river from the Water Police down to the Fremantle Traffic Bridge and also on relevant road bridges.
If you could please also confirm to DBCA all locations where signs have been installed once completed that would be appreciated.
It may also be necessary to periodically check on installed 'Harmful Algae' caution sign locations through-out the season to ensure sign integrity, any acts of vandalism, or the need to replace signs. Further details regarding this management approach can be found on the following DPIRD and DBCA websites:
www.fish.wa.gov.au/alerts
www.dbca.wa.gov.au/algal-bloom
Thank you to those local governments which have already installed the **'Harmful Algae'** caution signs.
Regards,

[redacted]
Water Unit | Environmental Health Directorate
Public and Aboriginal Health Division | Department of Health
Level 3, A Block, 189 Royal St, EAST PERTH WA 6004
PO Box 8172, PERTH BUSINESS CENTRE WA 6849
[redacted]
www.health.wa.gov.au | www.healthywa.wa.gov.au

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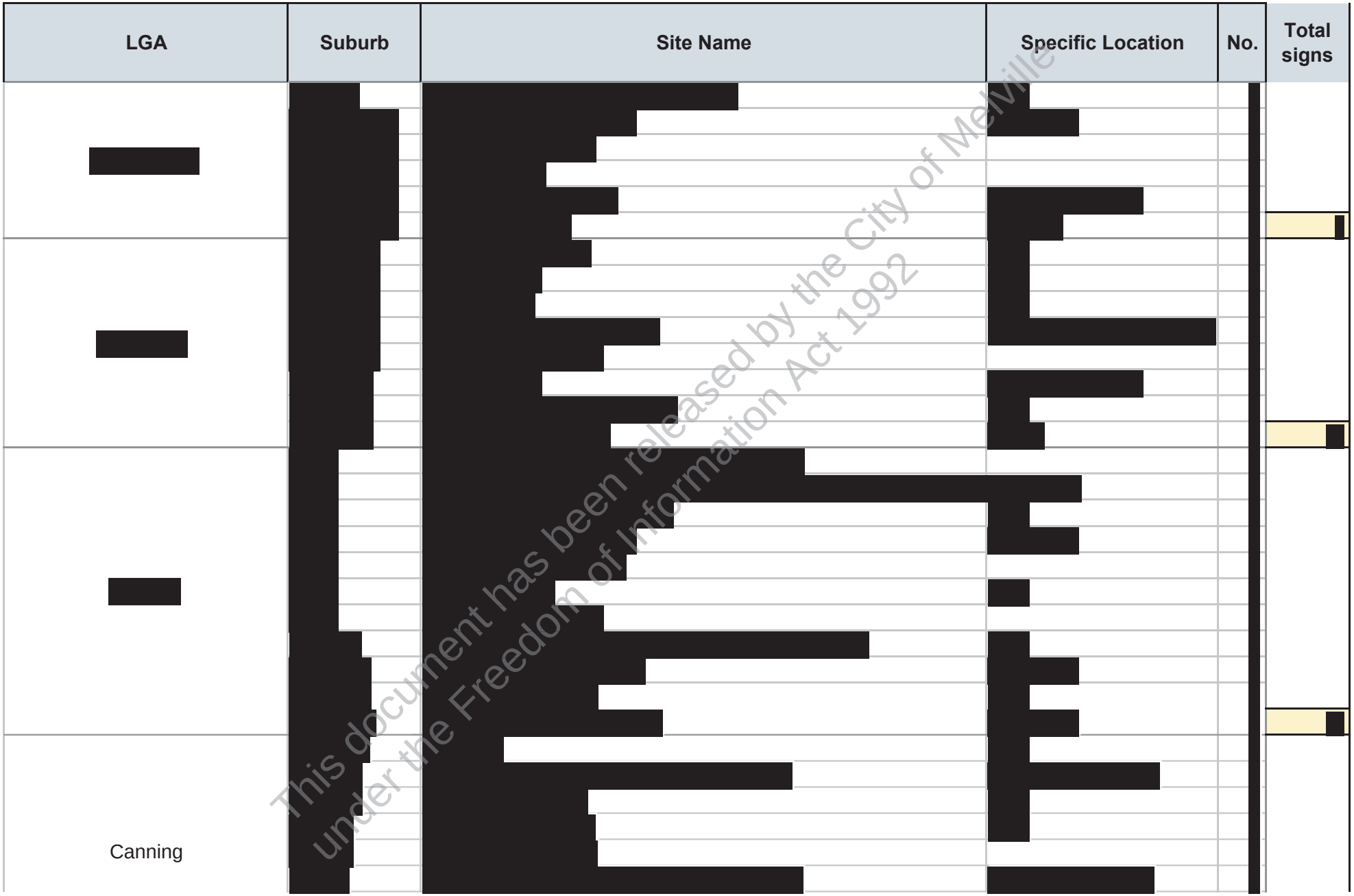
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Wilson	Riverton Jetty Park – Fern Road	Loquay Café	1	
Wilson	Riverton Bridge	Bridge	1	
Wilson	Shelley Bridge	Bridge	1	9
Claremont	Chester Rd Boat Ramp	boat ramp	1	
Claremont	Claremont Yacht Club	jetty and ramp	2	
Claremont	Jetty St Jetty	Jetty	1	4
Bicton	East Freo Yacht Club	jetty and ramp	2	
Bicton	HMAS Leeuwin boat ramp and jetty	boat ramp and jetty	2	
East Freo	Swan Yacht Club	jetty and ramp	2	6
Applecross	Raffles Hotel Foreshore	Foreshore	1	
	Rd			

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CAUTION

THIS WATER MAY CONTAIN HARMFUL ALGAE

DO NOT EAT MUSSELS OR CRAB GUTS

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If you collect crabs from the Swan and Canning rivers remove head, guts (mustard) and gills. Wash before freezing, cooking or eating.

GOVERNMENT OF WESTERN AUSTRALIA

Department of **Biodiversity, Conservation and Attractions**

Department of **Primary Industries and Regional Development**

FOR FURTHER INFORMATION

www.fish.wa.gov.au/alerts

www.dbca.wa.gov.au/algal-bloom

24250051

PATHWAY CUSTOMER REQUEST

Request Number:	1133546	Request Status:	Completed
Date Received:	17-December-2024 11:20:38	Priority:	3
Receiving Officer:	Michelle Rodriguez		
Requestor Type:	**Resident**		
Contact Type:	Telephone	Actioning Officer:	David Puddey
Request Type:	**Bollard Replacement/New Bollard**	Respond By Date:	10-January-2025

CUSTOMER DETAILS:

Name: [redacted]
Address:

Home phone:
Business phone:
Mobile phone: [redacted]

INCIDENT LOCATION:

Property: Raffles, 70-72 Canning Beach Road, APPLECROSS WA 6153
Property Owner:
Street:

QUESTIONNAIRE DETAILS:

INCIDENT DETAILS:

Date	Details
17-Dec-2024 11:23:20	Michelle Rodriguez - Initial Bollards has been ripped out of the concrete - near seating and river - one bollard is in the river - one is on the ground.
20-Dec-2024 11:36:36	Ian Kerton - Initial one for your team
20-Dec-2024 12:25:32	Tim Henry - Initial Hi Dave/Vince, These are at Raffles. Thanks Tim
02-Jan-2025 15:09:39	David Puddey - Final note for Request I have inspected and requested a quote for contractor to replace missing bollards and repair the current ones there as well.

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From: Melville Information Officer
To: [redacted]
Subject: City of Melville - Bollard repair concern
Date: Monday, 13 January 2025 12:31:00 PM
Attachments: image001.png
image002.png
image003.png
image004.jpg

Hello [redacted]

Thank you for your additional email correspondence.

Recent notes indicate:

I have inspected and requested a quote for contractor to replace missing bollards and repair the current ones there as well.

Your Reference number is: 1133546.

Your feedback is important to us. Please click on the link below to answer the one question survey in regards to the service the City of Melville provided you today.
Customer Service Survey

Please do not hesitate to contact us should you require any further assistance.

Kind regards,

Officer - Michelle
Customer Relations Officer
melinfo@melville.wa.gov.au
www.melvillecity.com.au
Ph. 1300 635 845
City of Melville, 10 Almondbury Road, Booragoon, Western Australia 6154

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From: [redacted]
Sent: Friday, 10 January 2025 5:04 PM
To: Melville Information Officer <Melville.InformationOfficer@melville.wa.gov.au>
Subject: Re: City of Melville - Bollard repair concern

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Report Suspicious

Dear Michelle,

Just advising that nothing was actioned around the bollards, smashed concrete, completely destroyed grass which is now a sand pit.
The council rubbish trucks once again used it as a short cut .
Next week Canning Beach Rd is closed because of the crane removal so I guess it will be another fortnight at least before it's looked at.

Regards,
[redacted]

Sent from my iPhone

On 27 Dec 2024, at 12:47 pm, Melville Information Officer <Melville.InformationOfficer@melville.wa.gov.au> wrote:

Dear[redacted]

Thank you for contacting The City regarding bollard repair concern.

This has already been reported by a third party.

The Maintenance Department are currently investigating this issue.

This will be actioned no later than the 10th January 2025.

Your reference number is: 1133546.

Your feedback is important to us. Please click on the link below to answer the one question survey in regards to the service the City of Melville provided you today.
Customer Service Survey

Please do not hesitate to contact us should you require any further assistance.

Kind regards,

Officer - Michelle
Customer Relations Officer
melinfo@melville.wa.gov.au
www.melvillecity.com.au
Ph. 1300 635 845
City of Melville, 10 Almondbury Road, Booragoon, Western Australia 6154

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Subscribe to eNews

From: [redacted]
Sent: Thursday, 26 December 2024 11:47 AM
To: Melville Information Officer <Melville.InformationOfficer@melville.wa.gov.au>
Subject: Damages , removed bollards and Rubbish trucks.

To whom it may concern,

Prior to Christmas I contacted the council to advise that bollards with cement attached had been removed maliciously and one was thrown in the river and another on the verge …..dangerous for walkers, cyclists and people using the beach. You can see them in the photos attached. One of the bollards is on the sand.
I did not see any council workers come and inspect or replace the bollards. Then this morning the Council rubbish truck thought they would add to the City of Melvilles bill by driving over the verge, the grass, the footpath with walkers and cyclists . Besides being reckless, dangerous they have no doubt caused further damage to the road, curbing, path and retic and that becomes a community cost.

Hopefully this gets reported to the appropriate department and the area is repaired as the amenity is heavily utilised by the public and despairingly some of the damage has been caused by the City of Melville!!

[redacted]
<image005.jpg>

<image006.jpg>

<image007.jpg>

Sent from my iPhone

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PATHWAY CUSTOMER REQUEST

Request Number:	1157095	Request Status:	Completed
Date Received:	13-March-2025 11:27:59	Priority:	3
Receiving Officer:	Bettina Sinagra		
Requestor Type:	**Resident**		
Contact Type:	Telephone	Actioning Officer:	Ian Kerton
Request Type:	**Jetties and Boardwalks**	Respond By Date:	27-March-2025

CUSTOMER DETAILS:

Name: [redacted]
Address: [redacted]

Home phone:
Business phone: [redacted]
Mobile phone:

INCIDENT LOCATION:

Property: Raffles, 70-72 Canning Beach Road, APPLECROSS WA 6153
Property Owner:
Street:

QUESTIONNAIRE DETAILS:

What is the location of the jetty? - Raffles Jetty

Please see main notes
Describe the details of your request. -
Is the jetty unsafe? - Yes
Contact Civil Assets Maintenance Coordinator. - Yes
Would you like someone get back to you about this? - No
What is the best way for us to contact you? -
Do you have any further comments? -

INCIDENT DETAILS:

Date	Details
13-Mar-2025 11:38:57	Bettina Sinagra - Initial Customer [redacted] called to report that one of the hand rails on the Raffles Jetty has been broken by children. [redacted] unsure if the rail is still on the jetty or possibly fallen into the river. [redacted] notes it as being a safety hazard. [redacted] description of the location: the Raffles Jetty is and L shape the broken rail is on the long length of the L jetty. (walk straight on the jetty, turn right) I have called and spoken to IKerton due to potential hazard.
14-Mar-2025 09:16:49	Ian Kerton - Initial quote is being sought
19-Mar-2025 07:43:23	Ian Kerton - Final note for Request po raised, job will be completed 20/03/25

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From: [redacted]
To: [redacted] Melville Information Officer; [redacted]
Cc:
Subject: **Subject:** Concerns Regarding the Proposed Jetty Location
Date: Thursday, 1 May 2025 11:57:12 AM
Attachments: Ferry_Service_Expansion_project_early_engagement_29_April_2025.pdf

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Report Suspicious

Dear Sir/Madam,

After reviewing the proposal, it appears that our plan resembles the Elizabeth Quay model —which works due to ample space and the absence of adjacent residential areas. Our concern is not with ferry operations in principle but with the specific location proposed for our jetty. Please find my primary areas of concern detailed below:

****1. Environmental Sustainability****

- Physical Environment: Salt Spray, Corrosion, and Structural Concerns**
- Electric ferries, despite eliminating diesel emissions, operate in marine settings where saltwater is naturally present.
- When ferries dock or maneuver near apartment complexes, splashes and aerosols carry salt particles onto building facades, balconies, and walkways.
- Over time, persistent exposure can lead to corrosion of metal window frames, railings, and other infrastructure unless proper maintenance and corrosion-resistant materials are used.

****Wildlife and Habitat Considerations****

- - Increased ferry activity at the current location risks compromising water quality and disturbing sediment layers vital for local flora and fauna.
- - Sensitive wildlife (e.g., swans, ducks, birds, and dolphins) may experience disruption—both from operational noise and potential electromagnetic interference.
- - Relocating operations away from densely populated, environmentally delicate areas (for example, positioning them across from the Raffles Hotel where pre-existing infrastructure can be leveraged) would help preserve aquatic and terrestrial habitats.

****Noise, Vibrations, and Electromagnetic Fields (EMFs)****

- Electric ferries are quieter than diesel-powered ones, reducing overall noise disturbance.
- However, brief operational noises—from docking maneuvers, acceleration, or braking —can produce temporary mechanical/hydrodynamic sounds and minor vibrations.
- In densely built-up areas, these cumulative effects may necessitate urban design measures (e.g., buffer zones or sound insulation) to maintain acceptable disturbance levels.
- Additionally, low-level EMFs from the vessel's electrical systems may have implications for both human habitability and nearby fauna.

****Additional Corrosion Concerns**** .

- Footpaths and Building :** Structures near ferry routes can accelerated corrosion from salt-laden humidity.

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2. Security Concerns

Residential Vulnerability

- The present jetty location exposes ground-floor apartments to increased risks due to additional visitor traffic and the logistics of ferry operations.
- There is potential for unauthorized access and aggressive loitering, posing safety concerns for the Raffles community.

Crowd Management and Public Safety

- A surge in visitor numbers—especially during peak periods—could overwhelm existing security measures.
- Upgraded security protocols (e.g., controlled entry points, dedicated surveillance, and coordinated security patrols) will be necessary to mitigate potential risks.

***Accountability and Funding**

- There is uncertainty over who would fund and manage the enhanced security measures.
- Without established funding and accountability, the responsibility for additional security and its associated costs (e.g., petrol for security patrols) could fall onto the Raffle community.

***Public Amenities and Infrastructure**

- The placement of facilities such as public toilets must balance user convenience with the need to maintain sanitation standards and prevent unwanted activity.
- Clarification is needed regarding the planned location of these amenities.

Additional Notes:

- Suggestions for this proposal may have originated from UWA

Positioning the jetty platforms near Canning Bridge offers a strategic advantage. This location provides closer access to major transport links—such as train and bus stations—leverages existing infrastructure, and offers significant opportunities for targeted development to enhance the land adjacent to the freeway. Given the detailed environmental and security challenges outlined above, I strongly recommend that the COO revisit the proposed jetty location.

THANK YOU

Regard
[redacted]

Regards
On Tuesday 29 April 2025 at 10:35:30 pm AWST, [redacted] wrote:

[redacted],

The proposed plans for the new jetty outside the Raffles complex are outlined in the attached document. The Council of Owners intends to submit a response on behalf of all residents within the Strata scheme.

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To assist in forming this response, the Council is requesting that each resident participate in a simple **Yes** I support the jetty location or **No** I oppose the jetty location vote via the survey. Can we have your response by Monday 5th May.

A comment section is also included for residents to raise any concerns or provide additional feedback. This input will help the Council draft a submission that reflects the majority opinion.

[redacted] encouraged to review the attached document and share their views by completing the survey that will be sent out [redacted] Wednesday the 30th of April.

Many thanks [redacted]

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[redacted]

24250051

Connecting
people and places

Ferry Service Expansion Project

29 April 2025

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24250051

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Acknowledgement of Country

The Transport Portfolio acknowledges the traditional custodians throughout Western Australia and their continuing connection to the land, waters and community.

We pay our respects to all members of the Aboriginal communities and their cultures; and to Elders both past and present.

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Agenda

- Introductions
- Purpose of the Meeting
- Project Overview
- Ferry Design
- Ferry Operations
- Stage 1
- Next steps

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Purpose of Meeting

- To provide a preliminary briefing of the project, including potential terminals and routes.
- To gain insights from key stakeholders to be considered in project planning.

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Project Overview

- Election commitment of additional ferry routes to meet the increasing demand in public transport.
- Identify potential future landing locations and required design work, geotechnical, civil and marine engineering, and passenger journey requirements.

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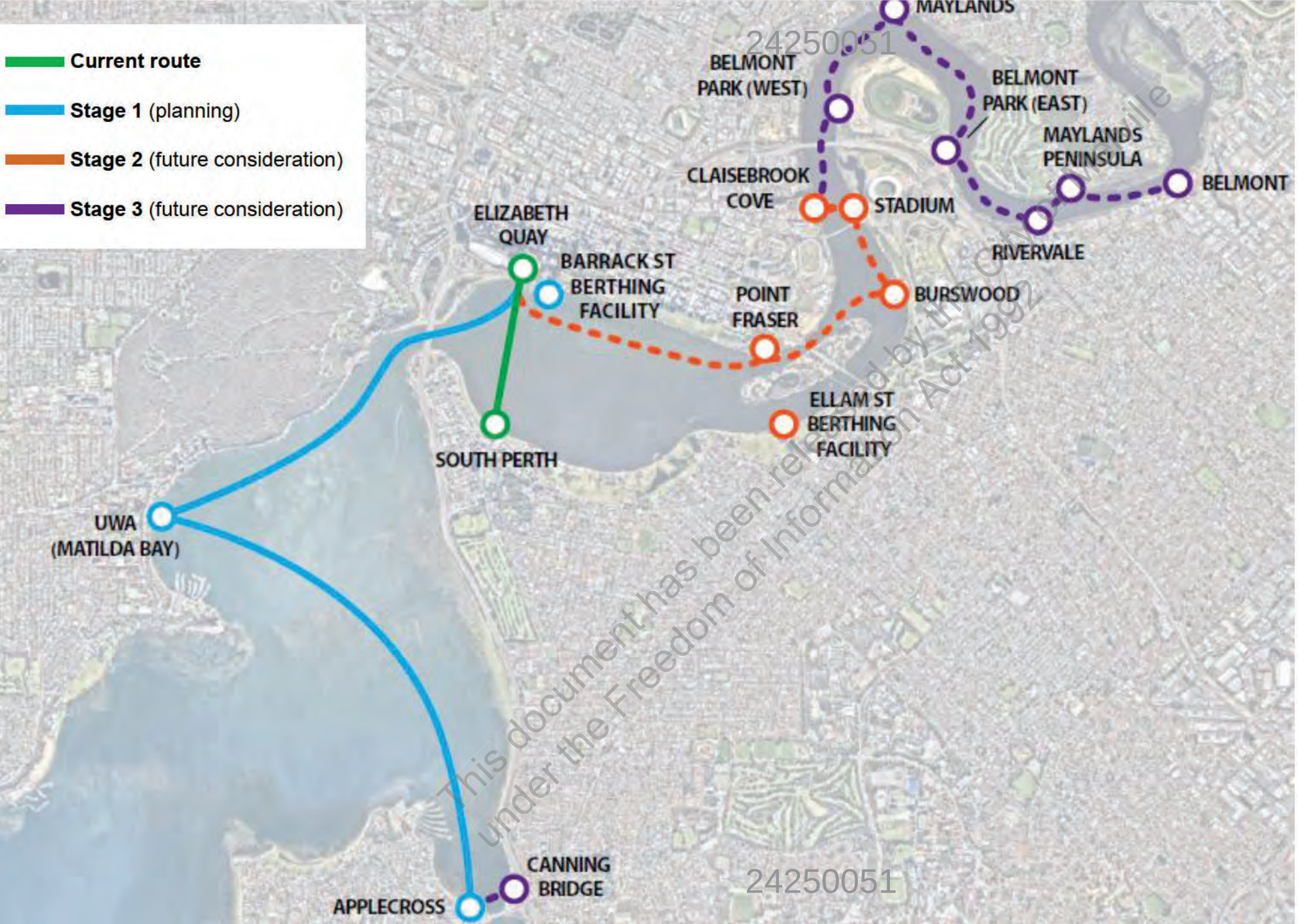

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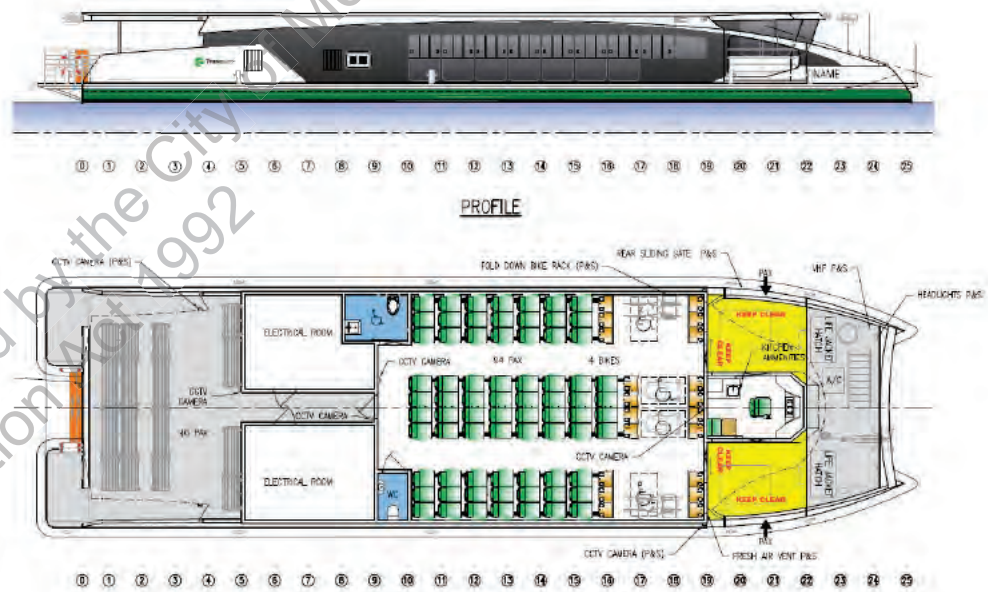
Ferry Design



- Electricity-powered
- ≥ 100 passengers
- <24m length
- Beam ≤7.2m
- Crew of two
- Max. cruising speed of 25 knots in open waters
- On-board toilet, wheelchair spaces, bike rack, CCTV

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Artist impression

24250051

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Ferry Operations

- ~25-minute frequency
- ~15-minute trip between terminals
- 6am to 12.30am operations, including travel to berthing location
- International Regulations for Preventing Collisions at Sea (1972) are applicable to all craft

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Stage 1

- Two new ferry terminals at UWA and Applecross
- Five new electric ferries
- Charging infrastructure for electric ferries at UWA terminal
- Back-up charging infrastructure at all other terminals
- Berthing facility at Barrack Square
- Modifications to existing Elizabeth Quay jetty

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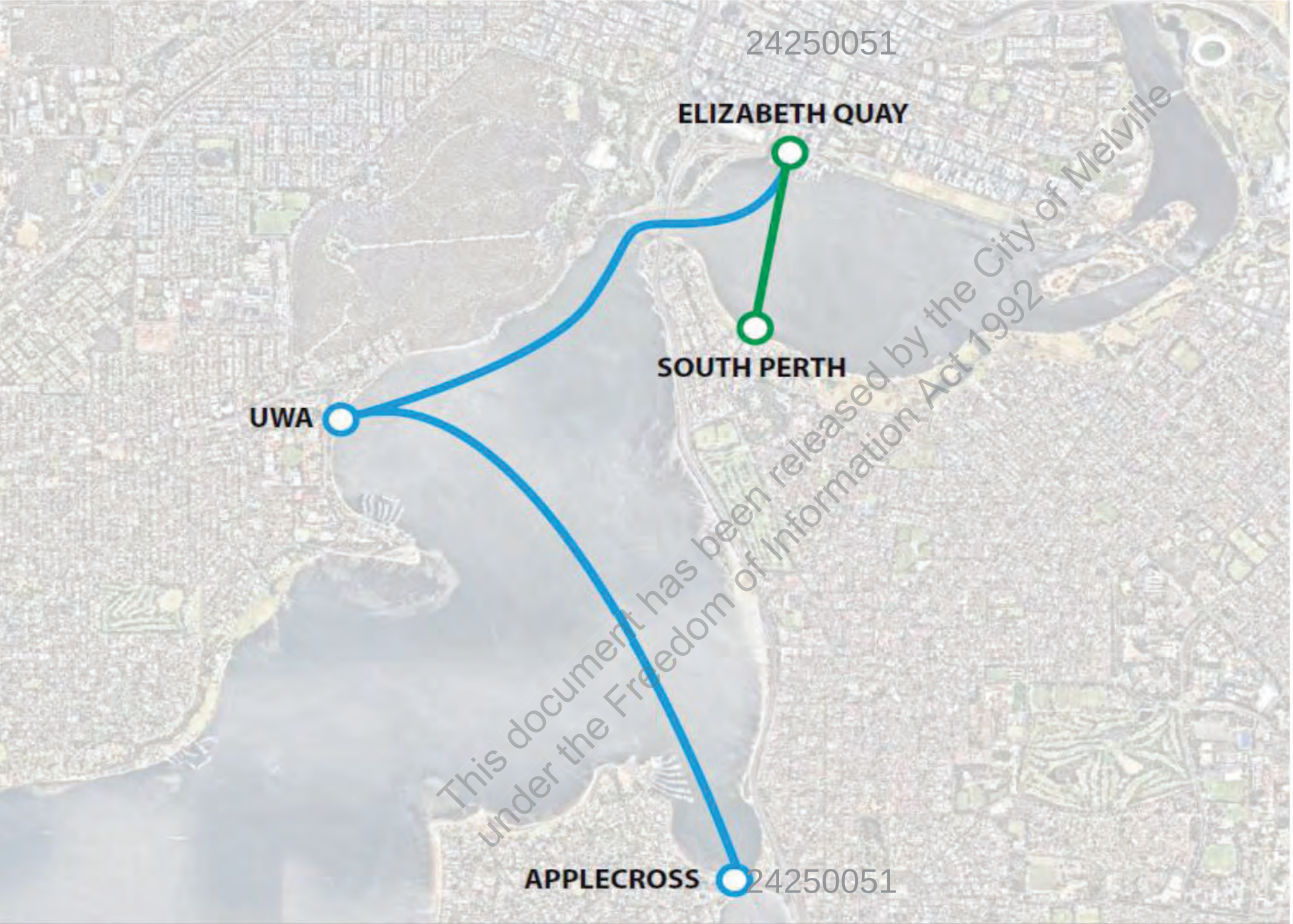

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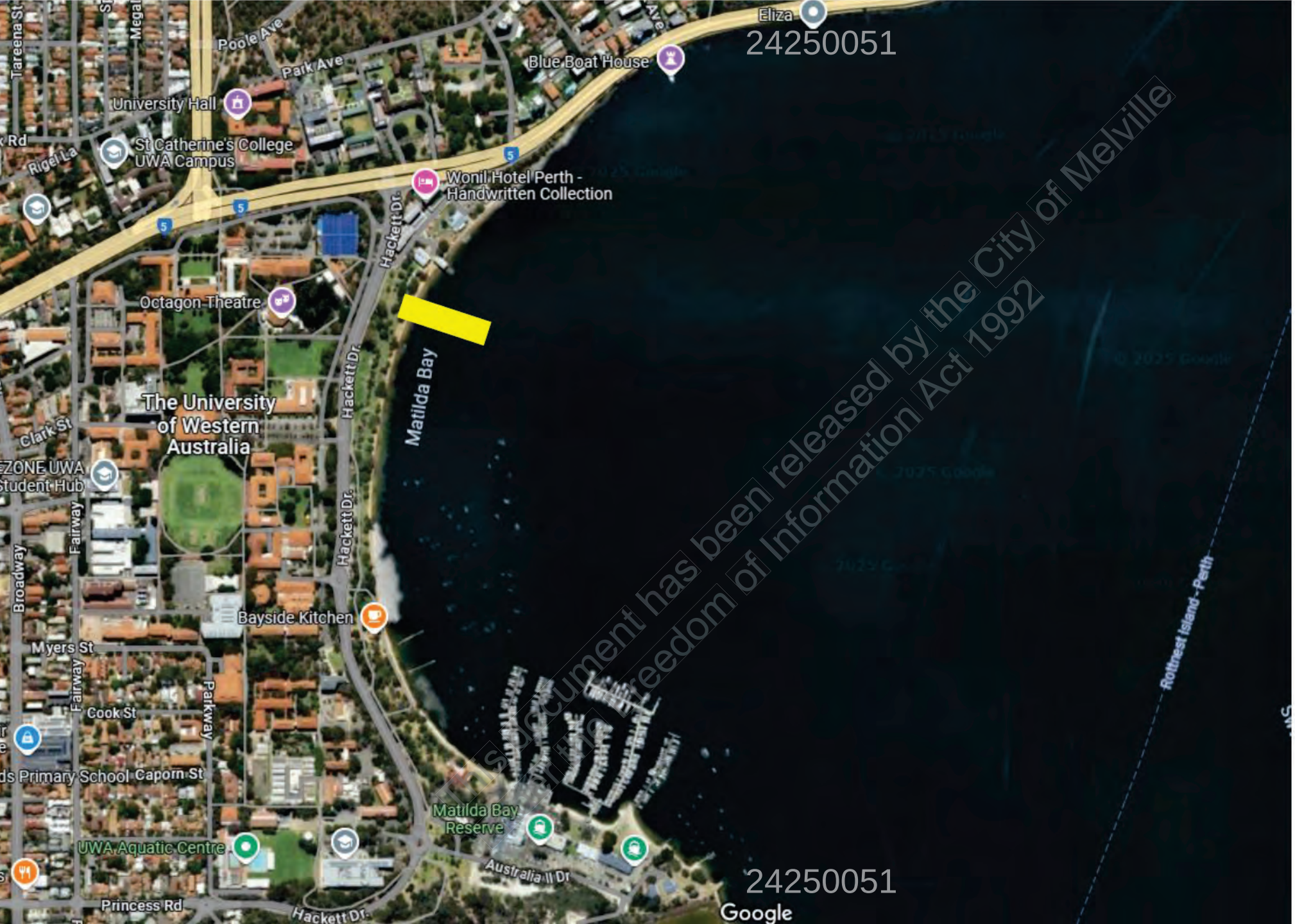

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Artist impression

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Next Steps

- We will share this presentation
- Please submit any additional feedback
  - by **Friday, 16 May 2025**
  - to [redacted]

Thank you!

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Thank you!

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Learn more at

[redacted]

24250051

Erin Bond

From: Jem Stirling
Sent: Friday, 2 May 2025 11:13 AM
To: Bruce Taylor
Subject: Re: Raffles Waterfront Apartments- Foreshore Erosion

Thank for clarifying Bruce.
I'll go out and have a better look with the Foreshore Crew and see what we can do.
Nevertheless, the area is on the radar!

Cheers,
Jem

Jem Stirling
Foreshore Officer [redacted]

From: Bruce Taylor [redacted]
Sent: Friday, May 2, 2025 11:10 AM
To: Jem Stirling [redacted]
Subject: RE: Raffles Waterfront Apartments- Foreshore Erosion

Hi Jen

Thanks for responding to customer I think they also wanted the rocks that had been removed ad in the water put back

Bruce Taylor
Research and Liaison Advisor | [redacted]

From: Jem Stirling [redacted]
Sent: Friday, 2 May 2025 10:59 AM
To: [redacted]
Cc: [redacted] Bruce Taylor [redacted]
Subject: Re: Raffles Waterfront Apartments- Foreshore Erosion

Happy Friday [redacted]

I trust this email finds you well.

Thank you for email. It has been passed onto me, the Foreshore Officer for the City. Part of my role is manage the integrity of the City's estuarine banks.
To help fulfil this task, the City has a Foreshore Restoration Strategy document that is updated every five years. Every time this document is reviewed, an independent qualified coastal surveyor will complete an audit of the City's foreshore and report back their findings. Major concerns are then prioritised, and projects devised accordingly to reduce risks. Flood and climate change risks are accounted for as part of this process. You can access the latest version of the Foreshore Restoration Strategy here.

We are currently in the review process of our Foreshore Restoration Strategy and the City's foreshore was re-surveyed in March this year.
The foreshore along Canning Beach Road was picked up as an area that would warrant further investigation to better stabilise the foreshore banks. The City will be adhering to this advice.
The updated document will be shared publicly when complete and will be known as the Foreshore Management Plan 2025. It will be complete in the second half of this year.

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I'll also note that Department of Biodiversity, Conservations and Attractions (DBCA), statutory authority for the river, are in the process of completing their own estuary wide work of determining erosional hotspots and risk areas for the Swan-Canning. This information when available will also assist the City in long-term foreshore management planning.

I can't speak for the specifics of the approvals for the new complex, but I hope the above information is helpful in informing how the City is managing its vested foreshore.

Please reach out if you have any further questions.

Cheers,
Jem

From: [redacted]
Sent: Wednesday, April 30, 2025 8:52 AM
To: Bruce Taylor; Melville Information Officer
Cc: [redacted]
Subject: [redacted] - Foreshore Erosion

This Message Is From an External Sender
This message came from outside your organization, do not click on links or open attachments unless you are expecting them from the sender.

Report Suspicious

Good Morning,
I would like to bring to your attention the ongoing deterioration of the barrier installed to prevent foreshore erosion, particularly given the area's classification as a floodplain.
It has come to our attention that some fishermen are removing and throwing rocks from the barrier into the water while searching for bait. This behaviour is compromising the structural integrity of the barrier and accelerating erosion, which may have serious long-term consequences for the shoreline and surrounding infrastructure.
Given the recent approval for a complex to be constructed in such close proximity to the foreshore, I would appreciate clarification on the current flood management process. Specifically, could you please advise what measures or assessments have been implemented to mitigate flood risk in this area, and how these were considered as part of the development approval?
It is critical that a comprehensive flood management plan is not only in place but also supported by regular inspections and ongoing maintenance of erosion control measures to ensure the long-term protection of both the natural environment and nearby developments.
Thank you for your attention to this matter. I look forward to your response.

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Warm Regards

[redacted]

Erin Bond

From: Melville Information Officer
Sent: Friday, 2 May 2025 1:40 PM
To: Fax-Manager
Subject: FW: Feedback on Proposed Applecross Jetty – Ferry Service Expansion Project

Follow Up Flag: Follow up
Flag Status: Flagged

FW FS

From: [redacted]
Sent: Friday, 2 May 2025 11:11 AM
To: [redacted]
Cc [redacted] Melville Information Officer
Subject: RE: Feedback on Proposed Applecross Jetty – Ferry Service Expansion Project

This Message Is From an External Sender

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Report Suspicious

Good morning [redacted]

Thank you for your email and enquiry regarding the Ferry Service Expansion project on behalf of your [redacted]

I have addressed your queries as per the categories in your email below.

Community and consultation
Consultation is underway with key stakeholders for the proposed Applecross jetty, including residents at The Raffles Waterfront Apartments. Two information sessions were held recently, and each session was attended by a member of the Council or Owners. The council members have informed us that they have shared the information provided, including the slide set you have attached to your email, and are seeking feedback from the wider group of residents. Feedback will be collated and provided back to the Public Transport Authority/Department of Transport by 16 May. The feedback will then be considered in the planning phase of the project.

Use of existing infrastructure
The existing public jetty on the eastern side of the complex has been assessed as not suitable for public transport purposes. It will remain in place and available for the public to use.

Alternative locations
A ferry terminal on the eastern side of the river near Canning Bridge is considered in potential future expansions. Unfortunately, the terminal cannot be realised until major construction for the Canning Bridge Bus Interchange project is undertaken. There are plans to integrate a ferry terminal into these works, however the timeframe for these works to finish does not align with the Ferry Service Expansion project's timeline.

The existing jetty at Jeff Joseph Reserve has been considered in previous studies, however has been deemed not suitable.

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Environment and amenity impact
Strict protections are in place for the Swan and Canning rivers, requiring the assessment and management of potential environmental impacts, including impacts to water quality, shoreline erosion, benthic habitat, and marine fauna.
Several environmental investigations are undertaken to understand and manage impacts during construction and future ferry operations. These environmental investigations will support the required environmental and planning approvals.

Noise modelling forms part of these investigations.

Please note that the operating hours of 6am to 12.30pm include a window of travel for vessels to reach their berthing location at Barrack Square. It is expected that operating hours will mirror those of the existing ferry services, where the last passenger services leave around 10.30pm Monday to Friday.

The project team will take the points you raised into consideration, and we will continue to engage with the residents near the proposed terminal as the project planning continues.

Kind regards,
[redacted]

Email: [redacted]

From: [redacted]
Sent: Thursday, 1 May 2025 9:25 AM
To: Projects <Projects@pta.wa.gov.au>; melinfo@melville.wa.gov.au
Cc: [redacted]
Subject: Feedback on Proposed Applecross Jetty – Ferry Service Expansion Project
Importance: High

[redacted]

To Whom It May Concern,

Reference: *Ferry_Service_Expansion_Project_Early_Engagement_29_April_2025.pdf*

I am writing to raise some queries [redacted] located directly in front of the proposed new Applecross jetty [redacted]

[redacted]

Key Issues and Questions:

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1. **Community Consultation**
   Has there been any direct consultation [redacted], particularly those whose properties will be most directly affected by this proposal?
2. **Use of Existing Infrastructure**
   Why is the existing jetty on the eastern side of the Raffles not under consideration? Utilising existing infrastructure would appear more efficient and cost-effective.
3. **Alternative Locations**
   Has the Authority considered placing the jetty closer to the Canning Bridge train station HUB, where integration with other transport services and supporting infrastructure would be stronger?
   Similarly, the Jeff Joseph Reserve area already features a jetty and offers more space, with potentially less impact on residential amenity.
4. **Environmental and Amenity Impact**
   The proposed location is home to diverse local wildlife, including swans and dolphins, which are frequently observed in this area. Have environmental studies been conducted to assess the impact on these species?
   Furthermore, the expected operating hours (0600 – 1230) raise concerns about noise, privacy, and increased risks associated with student-related anti-social behaviour in a high-density residential area.

[redacted].

[redacted] respectfully request that the Authority reconsider the proposed location and to engage more directly with the residents who will be most affected.

Thank you for your time and consideration. I look forward to your response.

Kind regards,
[redacted]

[redacted]
Existing jetty and suggested location of jetty closer to Canning Bridge train station HUB – circled in **blue**

This document has been released by the City of Melville under the Freedom of Information Act 1992

Existing jetty at Jeff Joseph Reserve – circled in **blue**

[redacted]

[redacted]

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Government of Western Australia
Department of Water and Environmental Regulation

Your ref: 12658388
Our ref: DWERVT18613
Enquiries: Ping Williams
Phone: 6364 6645
Email: ping.williams@dwer.wa.gov.au

Ms Solene Lao
GHD Pty Ltd
L 10, 999 Hay Street
PERTH WA 6000

Email: Solene.lao@ghd.com

Dear Ms Lao

FREEDOM OF INFORMATION (FOI) APPLICATION: DWERVT18613

I refer to the FOI application received by the Department of Water and Environmental Regulation on 28 April 2025 and validated on the same date.

I have attached a Notice of Decision outlining your request and my access decision.

If you have any questions, please contact the FOI Officer, whose details are above.

Yours sincerely

DAVID CROGHAN
DIRECTOR, OPERATIONAL ASSURANCE APPROVALS

15 JULY 2025

Encl. Notice of Decision
Schedule of Documents
Access Documents
Review of Decisions made by Agencies

DEPARTMENT OF WATER AND ENVIRONMENT REGULATION
WESTERN AUSTRALIA

NOTICE OF DECISION – SECTION 30

***FREEDOM OF INFORMATION ACT 1992* (FOI Act)**

APPLICANT:	Ms Solene Lao GHD Pty Ltd
FOI REFERENCE NO:	DWERVT18613
DECISION MAKER:	David Croghan Director, Operational Assurance, Approvals
DATE OF DECISION:	15 July 2025
DECISION:	For the reasons outlined below, I have made the following decision: Full Access: Documents 1 to 15 in the format agreed to and in accordance with the FOI Act. Access Refused: Photos to Documents 7-9 and 11-13

BACKGROUND:

1. The Department of Water and Environment Regulation (DWER) received a Freedom of Information (FOI) application, validated on 28 April 2025, with the $30.00 application fee.

2. The request was for access to documents under the FOI Act on the following:

   "The site is located at the forefront of E301/70 Canning Beach Road in Applecross 6153 WA.
   Lot P ROAD and Land ID Number is 3159415
   Seeking information regarding pollution incidents, licences, odour complaints, investigation reports, inspection reports, plans, any non-conformances held for the site, monitoring and other data and any other documents related to the contamination of the site. All available dates."

3. On 6 May 2025, the FOI Officer (FOIO) requested clarification for the correct site location, being either one of the following site locations:

   COT 2623/113 refers to Lot 113 on Plan 48545, 70 Canning Beach Road, Applecross
   COT 2623/13 refers to E301/70 Canning Beach Road, Applecross

4. By email response on the same date, you provided a map and stated the following:

   "There is not CoT available – please refer to attached figure which shows site boundaries (in red) and screenshot attached of what's seen on our end."

5. On 10 June 2025, the FOI Officer requested an extension to 11 July 2025. Accordingly, you consented on 11 June 2025.

6. On 4 July 2025, the FOI Officer requested an extension to 18 July 2025 advising third party consultation was in progress. As no response was received by the requested time frame of 8 July 2025, DWER presumes that you have consented.

7. Following receipt of your application, the search terms used to identify the documents are as follows:

   - E301/70 Canning Beach Road, Applecross
   - Lot P Road Canning Beach Road, Applecross
   - Lot 3159415 Canning Beach Road, Applecross
   - CoT: 2623/113

8. The systems interrogated with the above search terms include:

   - Hewlett-Packard Enterprises Content Manager (DWER's electronic record-keeping system)
   - Incident Complaints Management System
   - Environmental Filed Notice/Environmental Field Report
   - Infringement database
   - Enforcement Tracking database
   - Prosecution databases
   - Compliance Database
     - *618/Industry Regulation Compliance Branch*
   - Environmental Response Database
     - Incidents and Inspections
     - Program Work
     - Teams
     - Spatial Viewer – Pollution Response Layers
   - Contaminated Sites Database
   - Industry Regulation Environmental Online

9. The officers and business units that undertook the searches include:

   - FOI Officer – FOI Services
   - Environmental Officer – Contaminated Sites
   - Administration Officer – Process Industry
   - Project Support Officer – Assurance Services
   - Environmental Officer – Environmental Response
   - Senior Compliance Officer – Waste Programs
   - Manager - Waste Crime
   - Compliance Officer – Waste Assurance

DECISION:

10. In consideration of the above, on this date, I, David Croghan, Director, Operational Assurance, Approvals, have made the following decision regarding the documents requested in your application as outlined in paragraph two (2) and further discussed in paragraphs three (3) and four (4).:

    Full Access: Documents 1 to 15 in the format agreed to and in accordance with the FOI Act.

    Access Refused: Photos to Documents 7-9 and 11-13

MATERIAL ON WHICH FINDINGS OF FACT ARE BASED:

11. The material findings of fact are based on the following:

    - the provisions of the FOI Act and, in particular, sections 13 and 26
    - the information set out in your FOI application dated 28 April 2025
    - the information exchanged between the business units and this office

FULL ACCESS:

12. **Documents 1 to 15**

13. Following the consent provided in your application, any personal information of third parties and prescribed officer details, as well as any identifying information related to third-party businesses or companies has been edited from the documents. As this is the only information edited, the documents are considered as released in full.

REFUSED ACCESS:

3. **Photos to Documents 7-9 and 11-13**

4. I note the searches conducted by staff as outlined in paragraphs seven (7) to nine (9). I am satisfied that all reasonable steps have been undertaken to find the photos from the six documents; however, they cannot be found.

5. As the photos to documents 7-9 and 11-13 are either in the agency's possession and cannot be found or do not exist, access to the documents has been refused under sections 26(1)(a) & (b) of the FOI Act, which states:

Section 26. Documents that cannot be found or do not exist, notice of

(1) The agency may advise the applicant, by written notice, that it is not possible to give access to a document if —

(a) all reasonable steps have been taken to find the document; and

(b) the agency is satisfied that the document —

(i) is in the agency's possession but cannot be found; or

(ii) does not exist.

(2) For the purposes of this Act the sending of a notice under subsection (1) in relation to a document is to be regarded as a decision to refuse access to the document, and on a review or appeal under Part 4 the agency may be required to conduct further searches for the document.

6. In *Chu v Telstra Corporation* [2005] FCA 1730 Justice Finn considered the interpretation of section 24A of the *Freedom of Information Act 1982* (Cth), which is almost identical to section 26 of the FOI Act. He stated in paragraph 35 (excerpt below) that while steps taken to search for documents do not need to be exhaustive, all reasonable steps are to be taken.

"…A person requesting access to a document that has been in the agency's or Minister's possession should only be able to be denied on the s 24A ground when the agency (or the Minister) is properly satisfied that it has done all it could reasonably be required of it to find the document in question. Taking the steps necessary to do this in some circumstances may require the agency or Minister to confront and overcome inadequacies in its investigative processes. Section 24A is not meant to be a refuge for the disordered or disorganised…"

7. As such, access to the photos in the six documents requested in your application is refused under section 26 of the FOI Act.

RIGHT OF REVIEW:

14. If you disagree with this Notice of Decision and wish to have it reviewed, you have the right to do so under section 39(2) of the FOI Act. The attached document, 'Review of agency decisions', provides details regarding the review process for your reference.

DAVID CROGHAN
DIRECTOR, OPERATIONAL ASSURANCE
APPROVALS

DATE OF DECISION 15 JULY 2025

SCHEDULE OF DOCUMENTS

OUR REF: DWERVT18613 - SOLENE LAO - GHD PTY LTD - DECISION MAKER: DAVID CROGHAN - DIRECTOR - OPERATIONAL ASSURANCE - APPROVALS

DOCUMENT NUMBER	PAGE NUMBER	DATE	DESCRIPTION	DECISION	EXEMPTION CLAUSE	REASONS FOR DECISION
1	1-2	9/02/2025	Incident Report 88838	Full Access	NIL	Information redacted is outside the application scope.
2	3-7	16/11/2024	Incident Report 84997 with photos	Full Access	NIL	As above
3	8-9	18/11/2024	Email Correspondence to Incident Report 84997	Full Access	NIL	As above
4	10-11	7/11/2024	Incident Report 84766	Full Access	NIL	As above
5	12-14	12/11/2024	Email Correspondence to Incident Report 84766	Full Access	NIL	As above
6	15-17	23/11/2020	Incident Report 59499	Full Access	NIL	As above
7	18-20	29/05/2015	Incident Report 36972	Full Access	NIL	As above
			Photos	Access Refused	s26	Cannot be found
8	21-22	23/05/2014	Incident Report 33212	Full Access	NIL	Information redacted is outside the application scope.
			Photos	Access Refused	s26	Cannot be found
9	23-30	20/09/2010	Incident Report 19368	Full Access	NIL	Information redacted is outside the application scope.
			Photos	Access Refused	s26	Cannot be found

10	31-32	6/05/2010	Incident Report 18517	Full Access	NIL	Information redacted is outside the application scope.
11	33-34	5/05/2010	Incident Report 18339	Full Access	NIL	As above
			Photos	Access Refused	NIL	As above
12	35-36	16/08/2009	Incident Report 15995	Full Access	NIL	As above
			Photos	Access Refused	NIL	As above
13	37-39	28/05/2007	Incident Report 9247	Full Access	NIL	As above
			Photos	Access Refused	NIL	As above
14	40	3/02/2006	Incident Report 5540	Full Access	NIL	As above
15	41	20/12/2004	Incident Report 1987	Full Access	NIL	As above

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UNLESS NOTED WITH AN EXEMPTION CLAUSE, REDACTED INFORMATION IS OUTSIDE THE APPLICATION SCOPE
DOCUMENT 1

Incident Report (IR)

ICMS Number: 88838 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]	[redacted]	[redacted]	N

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 17-FEB-2025 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	Pollution Watch - phone	09-FEB-2025 07:02	No

Incident Type: Complaint

Alleged Source of Emission (More details available - see system)	
Organisation:	Lic/Reg File No:
Address: [redacted] CANNING BEACH RD	Suburb: APPLECROSS
LGA:	PC: 6153
Contact Name: [redacted]	Position:
Phone:	Fax:

Description of incident 08-FEB-2025 15:10
Environment Watch-[redacted]call - Applecross-[redacted] - Swimming pool
Reference Number: DEC03535
Time call received: 8/02/2025 3:10:00PM
Operator ID: 1640
Caller: [redacted]
Phone: [redacted]
Address: , WA, 6153
Location: [redacted]Canning Beach Road Applecross
Details: Swimming pool water into Canning River
Response:
08-Feb-25 15:10 SMS - Hold 10 Duty Officer [redacted]
08-Feb-25 15:10 Agent: SMS sent hold 10
8/02/2025 3:12:00PM Acknowledged by: [redacted]

Category:	Emission	Sub-category: Unauthorised Discharge

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:Yes ([redacted] 17-FEB-2025)	Yes [redacted]-17-FEB-2025)
Comment:	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	08-FEB-2025	Phone Call	- [redacted] called about someone emptying their swimming pool via a hose over/through the fence thus discharging water onto the road, then running off into the river. [redacted] wanted to check whether [redacted] needed to stop them / was potentially "illegal". I initially told [redacted] this is not likely "legal" and if safe to do so approach the occupier and tell them to stop until I get more info to [redacted] mentioned [redacted] was trying to get hold of [redacted] as well. I called the [redacted] and

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DOCUMENT 1

			discussed the issue and [redacted] agreed it "didn't look good" and should be stopped. I called [redacted] back with that info and [redacted] was happy to stop it and handle from there.
[redacted]	10-FEB-2025	Priority	Priority set to 'Priority 3 (Low)'.
	10-FEB-2025	Status	Status set to 'Received'.
	10-FEB-2025	Re-allocated	Re-allocated to [redacted]
	10-FEB-2025	Re-allocated	ONMENTAL RESPONSE, BRANCH' [redacted]
	10-FEB-2025	Status	Status set to 'Under Investigation'.
	17-FEB-2025	Incident / Complaint / Compliance Activity Confirmed	Complaint confirmed set to 'Yes'.
[redacted]	17-FEB-2025	Source Confirmed	Source confirmed set to 'Yes'.
	17-FEB-2025	Closed	Closed by [redacted]

ADVICE TO COMPLAINANTS

Name	Method	Date
[redacted] advised by [redacted]	Phone	08-FEB-2025

[redacted] Sign Off: BRANCH ENVIRONMENTAL RESPONSE Date: 17/2/2025

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UNLESS NOTED WITH AN EXEMPTION CLAUSE, REDACTED INFORMATION IS OUTSIDE THE APPLICATION SCOPE
DOCUMENT 2

Incident Report (IR)

ICMS Number: 84997 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]	[redacted]	[redacted]	N

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 25-NOV-2024 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	Pollution Watch - email	16-NOV-2024 06:57	No

Incident Type: Complaint

Alleged Source of Emission	
Organisation:	Lic/Reg File No:
Address:	Suburb:
LGA:	PC:
Contact Name:	Position:
Phone:	Fax:

Description of incident 16-NOV-2024 18:45
Environment Watch - Applecross - Canning River - Bogged vehicle near Black Swan nesting grounds - [redacted]
Report pollution
Name [redacted]
Address Street address: [redacted] Canning Beach Road
Suburb: Applecross
Post code: 6153
Phone number [redacted]
Email [redacted]
Incident details [redacted] the Canning River, I watch a Hilux with [redacted] reverse onto the shore with a boat trailer to remove a boat from the river. They then got bogged, making large tire marks in the small beach and being very loud
Details of any impacts This has happened right next to a very popular spot for the black swans to lay eggs, as well as ruining majority of a small bay
Incident date and time 16-11-2024 18:45
Incident location [redacted] Canning Beach road
Identifying landmark Large tree surrounded by reeds to the left of site
Suspect details White dual cab Hilux under license plate [redacted] Person who drive away was [redacted], who I did not see drinking but others were.
IMG_0145.jpeg
IMG_0146.jpeg
IMG_0147.jpeg

Category:	Other - Not specified

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:No [redacted] -18-NOV-2024)	No [redacted] -18-NOV-2024)
Comment: System comment - As incident is not confirmed, source confirmed is set to NO	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment

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DOCUMENT 2

[redacted]	16-NOV-2024	Email	Online pollution report received from complainant via Department of Premier and Cabinet Portal.
	18-NOV-2024	Priority	Priority set to 'Priority 3 (Low)'.
	18-NOV-2024	Status	Status set to 'Received'.
	18-NOV-2024	Re-allocated	Re-allocated to [redacted]
	18-NOV-2024	Email	Email acknowledgement and closure sent TO complainant directing to contact relevant agencies
	18-NOV-2024	Email	Email referrals City of Melville and the Department of Biodiversity, Conservation and Attractions
	18-NOV-2024	Incident / Complaint / Compliance Activity Confirmed	Complaint confirmed set to 'No'.
[redacted]	18-NOV-2024	Source Confirmed	Source confirmed set to 'No'.
	18-NOV-2024	Closed	Closed by [redacted]

ADVICE TO COMPLAINANTS

Name	Method	Date
[redacted] advised by [redacted]	Email	18-NOV-2024

[redacted] Sign Off: [redacted] Date: 18/11/2024

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DOCUMENT 3

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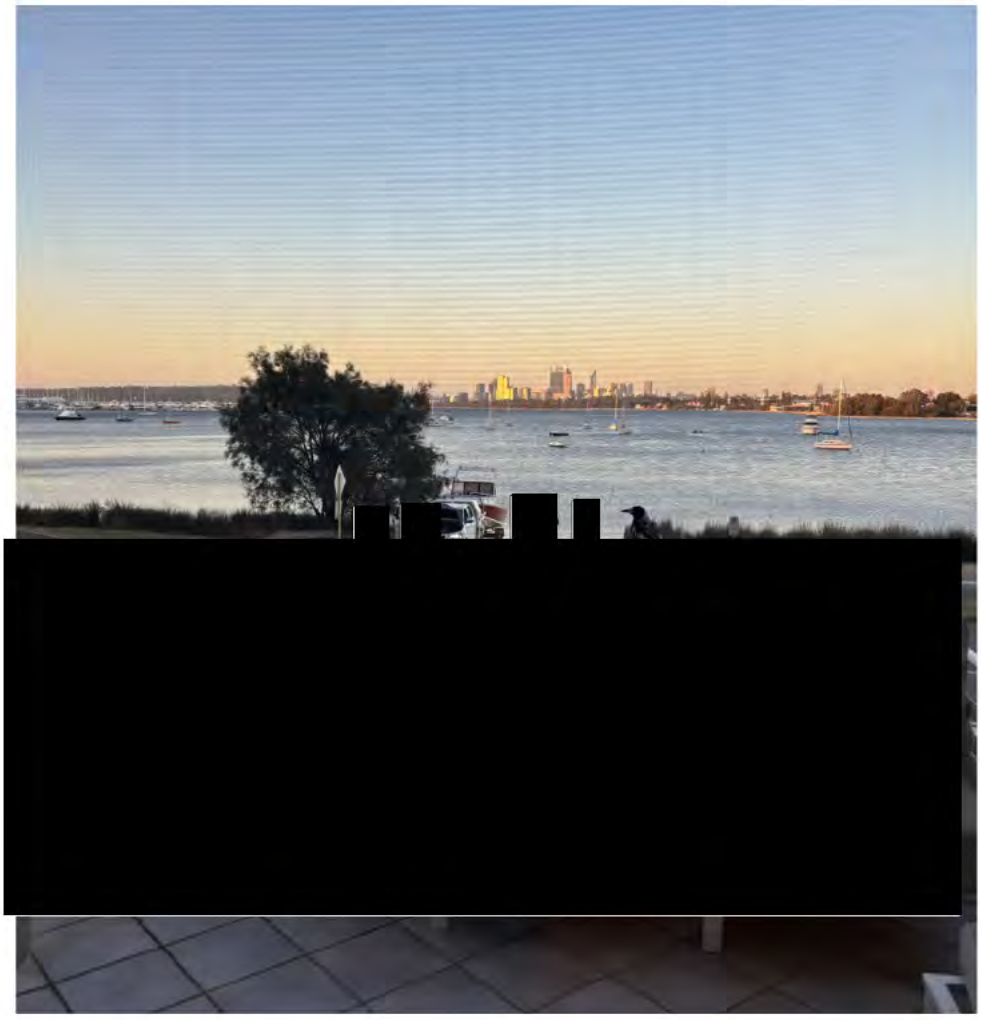
UNLESS NOTED WITH AN EXEMPTION CLAUSE, REDACTED INFORMATION IS OUTSIDE THE APPLICATION SCOPE
DOCUMENT 3



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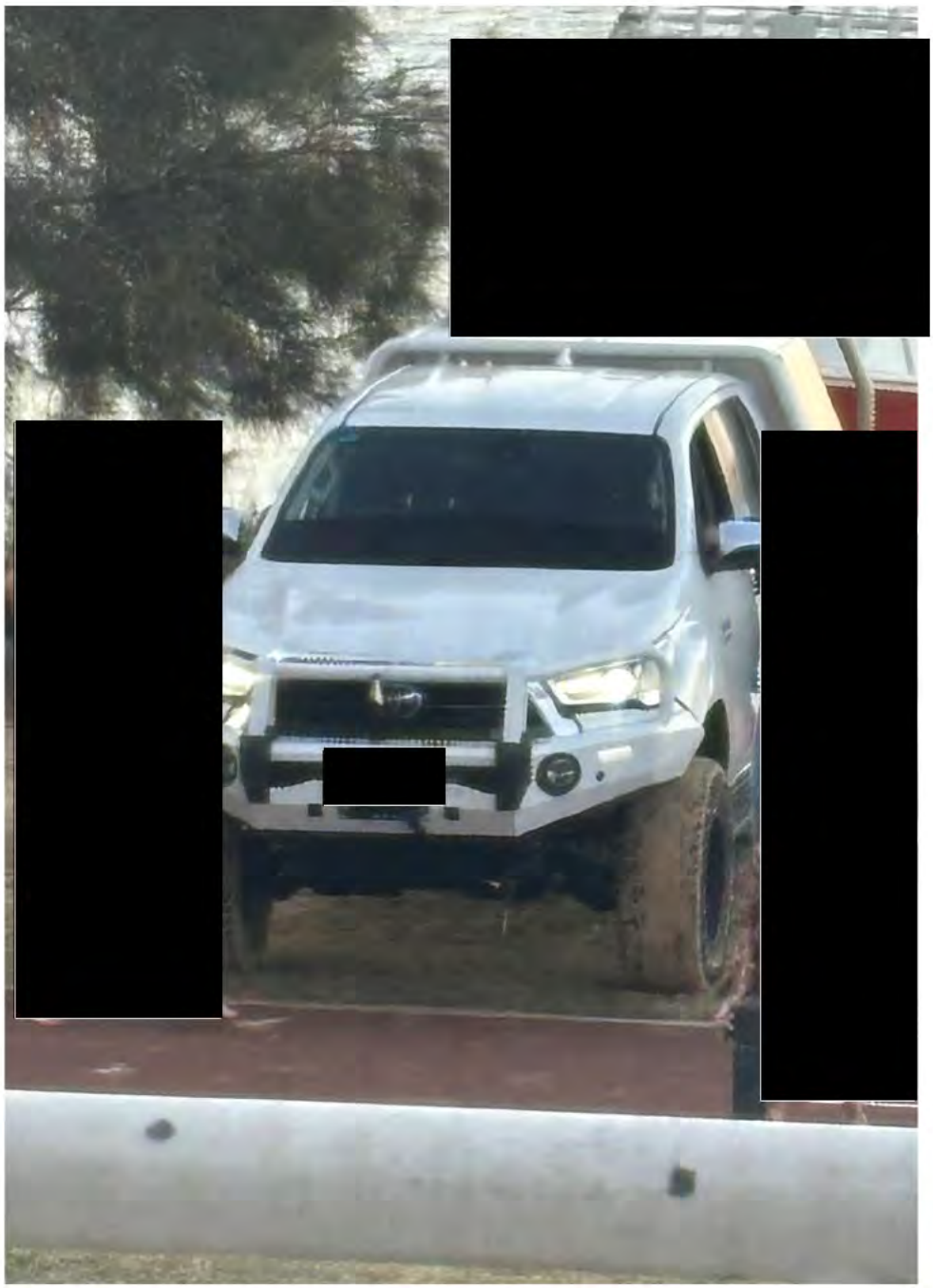
DOCUMENT 3



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DOCUMENT 3

From: Environment Watch
To: [redacted]
Subject: ICMS 84997 - Report pollution - Bogged vehicle near black swan laying area.
Date: Monday, 18 November 2024 2:57:00 PM
Attachments: IMG_0145.jpeg
IMG_0146.jpeg
IMG_0147.jpeg
~WRD4060.jpg
image003.jpg

Thank you for submitting report to the Environment Watch Service on 16 November 2024.

Your reference number for your report is ICMS 84997

The matter you have reported falls under the jurisdiction of City of Melville and the Department of Biodiversity, Conservation and Attractions. The Department of Water and Environmental Regulation (the department) will forward your details and the information you have reported to the City of Melville and the Department of Biodiversity, Conservation and Attractions. An officer from the City of Melville and the Department of Biodiversity, Conservation and Attractions may contact you regarding this matter.

The Department has recorded your report for intelligence purposes and the report is now closed. Please contact the City of Melville and the Department of Biodiversity, Conservation and Attractions regarding this matter.

Please continue to report any environment issues that you experience to the Environment Watch service on our Website, via email at environmentwatch@dwer.wa.gov.au, or by phone on 1300 784 782.

Kind regards

Environment Watch
Environmental Assurance

Department of Water and Environmental Regulation
Prime House, 8 Davidson Terrace, JOONDALUP WA 6027
Locked Bag 10, Joondalup DC, WA 6919
T: 1300 784 782
E: environmentwatch@dwer.wa.gov.au | www.dwer.wa.gov.au
Twitter: @DWER_WA Facebook: Environment WAtch | Joondalup WA | Facebook

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From: Department of the Premier and Cabinet - Western Australia

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DOCUMENT 3

<noreply@formresponse.com>
Sent: Saturday, 16 November 2024 6:57 PM
To: Environment Watch <environmentwatch@dwer.wa.gov.au>
Subject: Re: Report pollution -

Report pollution

Name	[redacted]
Address	Street address: [redacted] Canning Beach Road Suburb: Applecross Post code: 6153
Phone number	[redacted]
Email	[redacted]
Incident details	[redacted] the Canning River, I watch a Hilux with [redacted] reverse onto the shore with a boat trailer to remove a boat from the river. They then got bogged, making large tire marks in the small beach and being very loud
Details of any impacts	This has happened right next to a very popular spot for the black swans to lay eggs, as well as ruining majority of a small bay
Incident date and time	16-11-2024 18:45
Incident location	[redacted] Canning Beach road
Identifying landmark	Large tree surrounded by reeds to the left of site
Suspect details	White dual cab Hilux under license plate [redacted] Person who drive away was [redacted] who I did not see drinking but others were.
	IMG_0145.jpeg IMG_0146.jpeg IMG_0147.jpeg

You can edit this submission and view all your submissions easily.

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DOCUMENT 4

Incident Report (IR)

ICMS Number: 84766 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]	[redacted]	[redacted]	N

INCIDENT DETAILS

PRIORITY: Priority 2 (Response within 2 days) DUE DATE: 09-NOV-2024 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	Pollution Watch - email	07-NOV-2024 09:37	No

Incident Type: Complaint

Alleged Source of Emission	
Organisation:	Lic/Reg File No:
Address: 70 CANNING BEACH RD	Suburb: APPLECROSS
LGA:	PC: 6153
Contact Name: [redacted]	Position:
Phone:	Fax:

Description of incident 07-NOV-2024 09:37
Environment Watch Voicemail - Applecross - [redacted] - Emissions dust and algae change in colour - [redacted]
Location: near inlet near 70 canning beach road applecross
Description of event
The past week the algae is brown in colour and grasses are coated in grey dust.
Has collected samples. [redacted] has spoken to city of Melville who says it is a build up of salt
Massive building site is near apartments and inlet been there for past 3 years.
[redacted] noticed the amount of pelicans have declined.
[redacted] didn't detect an odour [redacted].
Appears to look like effluent [redacted] noted there is a sewage treatment pump nearby.
Inital voicemail transcript
From: [redacted]>
Sent: Thursday, 7 November 2024 9:37 AM
To: Environment Watch Hotline Voicemail <queue-pollution-watch@dwer.wa.gov.au>
Subject: Shared Voicemail (Environment Watch Hotline Queue)
[redacted], Cement dust pollution on the algae in the river in front of [redacted] the building complex [redacted], I believe is toxic with the cement dust. Could you have a look at that? Or I have actually got samples. So if you could call me on [redacted], I believe it is urgent. Thank you.
You received a voice mail from [redacted]

Category:	Emission	Sub-category: Dust

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:No [redacted] -12-NOV-2024)	No ([redacted] -12-NOV-2024)
Comment: System comment - As incident is not confirmed, source confirmed is set to NO	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	07-NOV-2024	Email	Voicemail pollution report received from complainant via email

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DOCUMENT 4

[redacted]	07-NOV-2024	Phone Call	Returned call to complainant Description of event The past week the algae is brown in colour and grasses are coated in grey dust. Has collected samples. [redacted] has spoken to city of Melville who says it is a build up of salt Massive building site is near apartments and inlet been there for past 3 years. [redacted] noticed the amount of pelicans have declined. [redacted] didn't detect an odour [redacted] Appears to look like effluent. [redacted] noted there is a sewage treatment pump nearby.
[redacted]	07-NOV-2024	Priority	Priority set to 'Priority 2 (Medium)'.
	07-NOV-2024	Status	Status set to 'Received'.
	07-NOV-2024	Re-allocated	Re-allocated to [redacted]
	07-NOV-2024	Email	Sent acknowledgement email
	08-NOV-2024	Email	Resent acknowledgement email
	08-NOV-2024	Re-allocated	Re-allocated to 'ENVIRONMENTAL RESPONSE. BRANCH' [redacted]).
	08-NOV-2024	Status	Status set to 'Under Investigation'.
	08-NOV-2024	Email	undeliverable receipt email received
	12-NOV-2024	Re-allocated	Re-allocated to [redacted]
	12-NOV-2024	Further Management	REPORTED OFFENCE Unauthorised Discharge - Report of dust Concerns over change in algae RESPONSE Complainant has already contacted City of Melville and they have already provided advice. ASSESSMENT Report being added to ICMS to allow department to review number and frequency of reports. IMPACTS IDENTIFIED Low environmental impact OUTCOME Recorded for intelligence purposes. City of Melville provided advice to complainant
[redacted]	12-NOV-2024	Email	Closure email sent to complainant
	12-NOV-2024	Incident / Complaint / Compliance Activity Confirmed	Complaint confirmed set to 'No'.
[redacted]	12-NOV-2024	Source Confirmed	Source confirmed set to 'No'.
	12-NOV-2024	Closed	Closed by [redacted]'.

ADVICE TO COMPLAINANTS

Name	Method	Date
[redacted] advised by [redacted]	Email	12-NOV-2024

Manager Sign Off: [redacted] Date: 12/11/2024

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DOCUMENT 5

From: [redacted]
To:
Subject: RE: ICMS 84766 - Pollution report
Date: Tuesday, 12 November 2024 10:33:00 AM
Attachments: image001.jpg

Good Morning [redacted]

This relates to the report to the Environment Watch Service on 7 November 2024.

The matter you have reported falls under the jurisdiction of City of Melville. It has been noted that you have already contacted City of Melville so your report will not be referred to them.

It has been mentioned that you have taken some samples and looking for some recommendations on where to take the samples for analysis. The best way is to google "Perth sample laboratories" or something similar and contact the labs directly. Different labs have different prices and can sample for different things. Different labs also have different ways of collecting and storing samples and if contacted directly, can provide you the appropriate advice.

The Department has recorded your report for intelligence purposes and the report is now closed. Please continue to liaise with City of Melville regarding any updates.

Please continue to report any environment issues that you experience to the Environment Watch service on our Website, via email at environmentwatch@dwer.wa.gov.au, or by phone on 1300 784 782.

Kind regards,

[redacted]
[redacted]
Environmental Response Unit, Environmental Assurance

Department of Water and Environmental Regulation
Prime House, 8 Davidson Terrace, JOONDALUP WA 6027
Locked Bag 10, Joondalup DC, WA 6919
E: [redacted] | www.dwer.wa.gov.au
Twitter: @DWER_WA

Environment Watch Hotline 1300 784 782

From: Environment Watch
Sent: Friday, 8 November 2024 4:01 PM
To: [redacted]
Subject: ICMS 84766 - Pollution report

RELEASED UNDER THE FREEDOM OF INFORMATION ACT 1992 13
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DOCUMENT 5

Apologies for the delay, thank you for submitting a report with the Environment Watch Service on 7 November 2024.

Your reference number for this report is ICMS **84766.**

The Department of Water and Environmental Regulation (the department) has recorded the information provided which will be assessed using its risk-based approach. A response will be determined from assessment of the Environment Watch report.

Please continue to report any environment issues that you experience to the Environment Watch service on our Website, via email at environmentwatch@dwer.wa.gov.au, or by phone on 1300 784 782.

Kind regards

Environment Watch
Environmental Assurance

Department of Water and Environmental Regulation
Prime House, 8 Davidson Terrace, JOONDALUP WA 6027
Locked Bag 10, Joondalup DC, WA 6919
T: 1300 784 782
E: environmentwatch@dwer.wa.gov.au | www.dwer.wa.gov.au
Twitter: @DWER_WA Facebook: Environment WAtch | Joondalup WA | Facebook

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From: Environment Watch
Sent: Thursday, 7 November 2024 6:23 PM
To [redacted]
Subject: ICMS 84766 - Pollution report

Thank you for submitting a report with the Environment Watch Service on 7 November 2024.

Your reference number for this report is ICMS **84766.**

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DOCUMENT 5

The Department of Water and Environmental Regulation (the department) has recorded the information provided which will be assessed using its risk-based approach. A response will be determined from assessment of the Environment Watch report.

Please continue to report any environment issues that you experience to the Environment Watch service on our Website, via email at environmentwatch@dwer.wa.gov.au, or by phone on 1300 784 782.

Kind regards

Environment Watch
Environmental Assurance

Department of Water and Environmental Regulation
Prime House, 8 Davidson Terrace, JOONDALUP WA 6027
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DOCUMENT 6

Incident Report (IR)

ICMS Number: 59499 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]			N

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 03-DEC-2020 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	Pollution Watch - email	23-NOV-2020 13:11	No

Incident Type: Complaint

Alleged Source of Emission	
Organisation:	Lic/Reg File No:
Address: [redacted] RIVERSIDE RD	Suburb: MOSMAN PARK
LGA:	PC: 6012
Contact Name: DEPARTMENT OF BIODI TY, CONSERVATION AND ATTRACTIONS [redacted]	Position:
Phone:	Fax:

Description of incident 22-NOV-2020 00:00
Pollution Watch - Perth - Swan River - Plastic Pollution in River - [redacted]
.
Hi there ,

As a concerned citizen of our beautiful city I am worried about plastic pollution in the swan river and its detrimental effects on its fauna and flora. I recently was participating in water sports at the mount pleasant boat ramp and was astonished by the amount of visible plastic debris making its way down the river . Can just imagine the amount that flows underwater with the current! I came across this ingenious idea put forward by a Dutch company . Maybe this is something that the council can adopt to prevent all plastic debris making its way to the ocean . I've attached a link for you to see and hope that the city will consider this idea .

Kind regards,

[redacted]

https://fb.watch/1VvXK2Jgs9/

Category: Emission Sub-category: Solid Waste

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:No ([redacted]-08-DEC-2020)	No ([redacted]-08-DEC-2020)
Comment: System comment - As incident is not confirmed, source confirmed is set to NO	Comment: Complaint not received by DWER. Response from City of Perth providing information.

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	23-NOV-2020	Email	Email from City of Perth referring to Swan River Trust Good Afternoon [redacted]

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DOCUMENT 6

			Thank you for contacting the City of Perth. I have logged your enquiry with the Parks unit who will respond accordingly. Your Ref. No. 236808/20 The Swan River Trust looks after the Swan River – I have also copied them in to this email for their information. From 1 July 2015, the role and functions of the Swan River Trust were merged with the Department of Parks and Wildlife. Parks and Wildlife has created a new Rivers and Estuaries Division which, working with other divisions, will ensure a focus on the highest priorities in river science, protection, conservation and management. The new offices are co-located with Parks and Wildlife. Please contact the Swan River Trust advisory body via the Rivers and Estuaries Division. I suggest your read their website which is very interesting. I have enclosed their website link for your convenience:- https://swanrivertrust.dpaw.wa.gov.au/ FYI - The water quality (Algal Blooms) in the Narrows lakes is the responsibility of Main Roads WA, as outlined in the MoU we have with them and I have copied them in to this email for their information. The Department of Water and Environmental Regulation supports Western Australia's community, economy and environment by managing and regulating the state's environment and water resources. The department is responsible for environment and water regulation, serving as a 'one stop shop' for industry and developers, with the aim of streamlining and simplifying regulation. I have also included them in this email and enclose their website link FYI. https://www.water.wa.gov.au/home Please don't hesitate to contact us should you have any further queries or you haven't received a response within 10 working days. I hope you have found this helpful. Thank you, [redacted] Customer Experience Centre
[redacted]	26-NOV-2020	Priority	Priority set to 'Priority 3 (Low)'.
	26-NOV-2020	Status	Status set to 'Received'.
	26-NOV-2020	Re-allocated	Re-allocated to [redacted]
	26-NOV-2020	Re-allocated	Re-allocated to '[redacted]
	26-NOV-2020	Status	Status set to 'Under Investigation'.
	08-DEC-2020	Incident / Complaint / Compliance Activity Confirmed	Complaint confirmed set to 'No'.

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DOCUMENT 6

[redacted]	08-DEC-2020	Source Confirmed	Source confirmed set to 'No'.
[redacted]	08-DEC-2020	Closed	Closed by [redacted]'.

ADVICE TO COMPLAINANTS

Name	Method	Date
[redacted] advised by [redacted]	Indicated no feedback required	08-DEC-2020

[redacted] Sign Off: [redacted] Date: 8/12/2020

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DOCUMENT 7

Incident Report (IR)

ICMS Number: 36972 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]			Y

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 11-JUN-2015 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	[redacted]	29-MAY-2015 13:45	No

Incident Type: Complaint

Alleged Source of Emission	
Organisation:	Lic/Reg File No:
Address:	Suburb:
LGA:	PC:
Contact Name:	Position:
Phone:	Fax:

Description of incident 29-MAY-2015 13:45
White fibreglass dinghy stored on the foreshore [redacted] Canning Beach Rd Applecross.

Category: SRT & Peel/Harvey Rivers & Waterways Mgnt Sub-category:
General complaints

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:No ([redacted] 07-JUL-2015)	Yes ([redacted] -04-JUN-2015)
Comment:	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	29-MAY-2015	Site Visit	[redacted] visit to the foreshore [redacted] Canning Beach Rd Applecross near the South Perth Yacht Club. [redacted] noted a white fibreglass dinghy upturned and stored on the foreshore next to a large tree. The dinghy was not attached to anything and there was no identifying registration numbers on the dinghy. [redacted] took some photos.
[redacted]	03-JUN-2015	Provide Advice	[redacted] discussed the white fibreglass dinghy being stored on the foreshore [redacted] Canning Beach Rd Applecross. [redacted] advised [redacted] to contact [redacted] to deal with the dinghy under council bylaws. [redacted] asked [redacted] about attaching a SRT dinghy notice to the dinghy? [redacted] advised [redacted] to go ahead and attached SRT dinghy

Photos: Access Refused Section 26

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DOCUMENT 7

			notice to the dinghy too, as this gives the option to remove the dinghy if not gone before the 4 week period.
[redacted]	04-JUN-2015	Incident / Complaint / Compliance Activity Confirmed	Complaint confirmed set to 'Yes'.
[redacted]	04-JUN-2015	Site Inspection	[redacted] visit to foreshore [redacted] Canning Beach Rd Applecross. [redacted] noted that the white fibreglass dinghy is still being stored on the foreshore. [redacted] attached a 1b dingy notice to the dinghy. Photos: Access Refused Section 26 [redacted] took some photos.
[redacted]	04-JUN-2015	Priority	Priority set to 'Priority 3 (Low)'.
	04-JUN-2015	Re-allocated	Re-allocated to [redacted]
[redacted]	04-JUN-2015	Status	Status set to 'Received'.
	04-JUN-2015	Status	Status set to 'Under Investigation'.
	04-JUN-2015	Phone Call	Phone call to City of Melville [redacted] talked to [redacted] Contact Centre). [redacted] informed [redacted] that there is a white fibreglass dinghy being stored on the foreshore [redacted] Canning Beach Rd Applecross. [redacted] asked [redacted] if the dinghy is in the water or on the foreshore? [redacted] informed [redacted] that the dinghy is being stored on a grassed area on the foreshore. [redacted] asked [redacted] how long the dinghy has been at this location? [redacted] informed [redacted] for about one week. [redacted] informed [redacted] that [redacted] will forward this onto a environmental officer to action. [redacted] asked for [redacted] contact details and the location of the dinghy [redacted] informed [redacted] that [redacted] informed [redacted] that a SRT dinghy notice has been attached to the dinghy giving the owner 4 weeks to remove the dinghy. [redacted] gave [redacted] n the following City of Melville reference number 398710 for the job.
[redacted]	15-JUN-2015	Phone Call	Phone call from [redacted] City of Melville to discuss the white dinghy being stored at Canning Beach Pde Applecross. [redacted] asked [redacted] if SRT are going to remove the dinghy when the required time period for the dinghy to be removed has expired? [redacted] was just wanting clarification on the process [redacted] informed [redacted] that SRT was hoping that City of Melville would remove the dingy under their bylaws. [redacted] informed [redacted] that SRT will remove the dinghy if it is still at the location after the dinghy notice expires. [redacted] asked [redacted] if the dinghy is still at the location. [redacted] informed [redacted] that he has not been to check so he is not sure. [redacted] asked [redacted] his contact details and asked [redacted] informed [redacted] that he is [redacted] contact number [redacted] informed [redacted] that [redacted] have wiped their hands of the

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DOCUMENT 7

			dinghy and have handed it over to Environmental services to deal with.
[redacted]	15-JUN-2015	Site Inspection	[redacted] visit to foreshore [redacted] Canning Beach Rd Applecross to see if the dinghy is still there. [redacted] noted that the dinghy is still at the location with the dinghy notice still attached to the bow.
[redacted]	03-JUL-2015	Site Inspection	Visit to the foreshore [redacted] Canning Beach Rd Applecross to see if a white dinghy is still being stored at this location. [redacted] noted that the white dinghy has been removed from this location. [redacted] walked along the foreshore and did not see the white dinghy.
[redacted]	03-JUL-2015	Phone Call	Phone call to [redacted] from City of Melville. [redacted] left [redacted] a message to call him back about the white fibreglass dinghy that was being stored on the foreshore [redacted] Canning Beach Rd Applecross.
[redacted]	06-JUL-2015	Phone Call	Phone call to [redacted] City of Melville. I left a message to call me back.
	07-JUL-2015	Re-allocated	Re-allocated to [redacted] '
	07-JUL-2015	Source Confirmed	Source confirmed set to 'No'.
	07-JUL-2015	Phone Call	Return phone call from [redacted] City of Melville [redacted] informed [redacted] that the white fibreglass dinghy being stored on the foreshore at Applecross has been removed. [redacted] asked [redacted] if CoM removed the dinghy? [redacted] informed [redacted] that CoM did not remove this dinghy but did remove a dinghy on wheels near Deep Water Point. [redacted] informed [redacted] that the dinghy being stored at Applecross was on wheels also. [redacted] informed [redacted] it sounds like the same dinghy, looks like someone was having fun with this dinghy and left it in the water at Deep Water Point. [redacted] r informed [redacted] that CoM received a report of a sunk dinghy in the river near Deep Water Point. CoM removed the dinghy from the river. [redacted] asked [redacted] if the dinghy is being stored by CoM? [redacted] informed [redacted] yes the dinghy is with CoM and will be held for 2 weeks before disposal.
[redacted]	07-JUL-2015	Re-allocated	Re-allocated to [redacted]
	08-JUL-2015	Closed	Closed by [redacted] '.

ADVICE TO COMPLAINANTS

Name	Method	Date

[redacted] Sign Off: [redacted] Date: 8/7/2015

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DOCUMENT 8

Incident Report (IR)

ICMS Number: 33212 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]			Y

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 30-MAY-2014 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	Phone	23-MAY-2014 09:00	No

Incident Type: Incident

Alleged Source of Emission	
Organisation:	Lic/Reg File No:
Address:	Suburb:
LGA:	PC:
Contact Name:	Position:
Phone:	Fax:

Description of incident 23-MAY-2014 09:00
Eight small trees all damaged infront of apartment block 70 Canning Beach Road, Applecross [redacted])

Category: SRT & Peel/Harvey Rivers & Waterways Mgnt Sub-category:
Destruction of vegetation

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:No [redacted] -12-JUN-2014)	Yes ([redacted] -23-MAY-2014)
Comm	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	23-MAY-2014	Site Inspection	[redacted] attended the site after noticing some damage to the trees while riding past on the weekend. There are eight trees along the North facing edge of the property and eight along the East facing edge of the property. All of the trees are within the DCA, and on Crown Land. All of the trees appear to have been planted at the same time. They are all of the same species (unknown), and similar size. Further inspection of the site showed that all eight trees along the boundary of 70 Canning Beach Road (North facing edge) have been damaged with at least one branch having been broken off. Two of these trees are dead. Each tree has had damage done

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DOCUMENT 8

			at various stages. Some of the damage appears to be very recent (branch snapped, but still attached with green leaves), and some quite old. All the trees along the Eastern edge of the property were undamaged and a lot taller than those along the Northern edge of the property (despite appearing to be the same age) - it is likely the trees along the Northern edge would be the same size as the Eastern edge trees if there were not damaged. Two of the trees are dead.
[redacted]	23-MAY-2014	Incident / Complaint / Compliance Activity Confirmed	Incident confirmed set to 'Yes'.
[redacted]	23-MAY-2014	Priority	Priority set to 'Priority 3 (Low)'.
	23-MAY-2014	Status	Status set to 'Received'.
	23-MAY-2014	Re-allocated	Re-allocated to [redacted].
	29-MAY-2014	Re-allocated	Re-allocated to [redacted]).
	29-MAY-2014	Status	Status set to 'Under Investigation'.
	30-MAY-2014	Re-allocated	Re-allocated to [redacted]
[redacted]	12-JUN-2014	Site Visit Photos: Access Refused Section 26	Attended site. I walked around the Perimeter of the [redacted] building. These does appear to be some newer damage on some of the tree particularly on the north facing side of the building. The damage does not appear to be significant compared to previous damage in the area. Photos Taken. I attended the front office of the building where I met [redacted]. I asked if I could place some standard vegetation letters in the letter boxes of the apartments. [redacted] said I could not and that the apartments would not take mail outs however [redacted] said [redacted] would take a copy of the letter and distribute it to the residents in the resident's newsletter. I gave [redacted] a copy of the letter
[redacted]	12-JUN-2014	Other	This ICMS relates to minor vegetation damage outside the [redacted] apartments. This has been an ongoing issue of a minor nature. Standard vegetation damage letter have been distributed to the residents in the area. No further action required at this time
[redacted]	12-JUN-2014	Source Confirmed	Source confirmed set to 'No'.
	12-JUN-2014	Re-allocated	Re-allocated to [redacted]
[redacted]	12-JUN-2014	Closed	Closed by [redacted]

ADVICE TO COMPLAINANTS

Name	Method	Date

[redacted] Sign Off: [redacted] Date: 12/6/2014

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Incident Report (IR)

ICMS Number: 19368 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]			Y

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 28-SEP-2010 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	Email	20-SEP-2010 11:54	No

Incident Type: Incident

Alleged Source of Emission	
Organisation:	Lic/Reg File No:
Address:	Suburb:
LGA:	PC:
Contact Name:	Position:
Phone:	Fax:

Description of incident 20-SEP-2010 10:00
Vegetation damage - large tree cut down at base, [redacted] Canning Beach Road Applecross.

Category: SRT & Peel/Harvey Rivers & Waterways Mgnt Sub-category:
Destruction of vegetation

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:Yes [redacted] -22-SEP-2010)	Yes [redacted] -22-SEP-2010)
Comme	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	21-SEP-2010	Email	Email sent from [redacted] SRT to [redacted] SRT as follows: Hi [redacted] as discussed could you please look into this matter and it appears the address is [redacted] Canning Beach Rd, Applecross. An ICMS was not created. [redacted] [redacted] Swan River Trust P - [redacted]

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F – 08 9278 0980

7 Ellam St

Victoria Park WA 6100

PO Box 6829

East Perth 6892

[redacted]

Web: http://www.swanrivertrust.wa.gov.au
CARING FOR THE SWAN CANNING RIVERPARK

From: [redacted]
Sent: Monday, 20 September 2010 11:58 AM
To [redacted]
Cc
Subject: FW: Missing tree

Hi [redacted]

Can you please have a look at this – [redacted] said [redacted] saw it yesterday – there has been a pathway installed under 4 permits from the Trust, but this was not included as part of any of the permits – and i did not notice it having being removed the last inspection i conducted there a few weeks ago – tell me if you need any more information

thanks

[redacted]

From: [redacted]
Sent: Monday, 20 September 2010 11:54 AM
To: [redacted]
Subject: Missing tree

Hi [redacted]

Photos: Access Refused Section 26

Here are the pics of the missing tree in front of [redacted] Canning beach Road, Mount Pleasant for your

			follow-up/site visit etc Let me know if there's anything else you need. Cheers [redacted] [redacted] [redacted] - Statutory Planning Swan River Trust P - [redacted] F – 08 9325 7149 Level 1, 20 Terrace Road Hyatt Centre, East Perth PO Box 6829 East Perth 6892 [redacted] Web: http://www.swanrivertrust.wa.gov.au Social: http://www.swanrivertrust.wa.gov.au/socialnetworking CARING FOR THE SWAN CANNING RIVERPARK Follow us on:
[redacted]	21-SEP-2010	Email	Email sent by [redacted] SRT to [redacted] City of Melville, as follows: Hi [redacted], Hope you're going well. I believe [redacted], so I'll ask you about this one. It's been brought to our attention that a tree has been removed (pictures attached) [redacted] Canning Beach Road, Applecross. Are you aware of this tree at all, and do you know if the council had

			any involvement in its removal? I believe the council is constructing a footpath in the area. Thanks [redacted] [redacted] Riverpark Operations [redacted] Swan River Trust
[redacted]	21-SEP-2010	Priority	Priority set to 'Priority 3 (Response within 7 days)'.
	21-SEP-2010	Status	Status set to 'Received'.
	21-SEP-2010	Re-allocated	Re-allocated to [redacted].
	21-SEP-2010	Email	Email received from [redacted], City of Melville, as follows: Hi [redacted], Thanks for sending this through. I will pass this onto our Parkes reserve / streetscape coordinators as I believe this area is maintained by them. Our [redacted] believes this was our parks guys removing the tree (flame tree we think) and there are 4 or 5 new natives being planted on this site to replace. I will confirm this information as soon as possible and get back to you. Cheers [redacted] [redacted]
[redacted]	22-SEP-2010	Email	Email received from [redacted] City of Melville as follows: Hi [redacted] Just following up on your query about the trees removed in Applecross. We have had this tree removed from the foreshore because it was diseased and 2 other flame trees removed, all being replaced 2 for 1 with melaluca raph. We have taken the advice from the letter recieved from the Trust in July, regarding the removal and replacement of dead/dying trees. (attached a copy in case you weren't aware of this one) I guess there is a balance required here from our point of view - in that we appreciate the recognition of our best judgement in the removal of trees, and we would contact the Trust if we felt unsure at any time regarding the removal of trees. I think one way we can assist is perhaps notifying you guys in Ops at the Trust (informally via email / phone) that we are removing certain trees and explain the reasoning etc - but I am a little reluctant to ask this of all our operational staff as it may then create additional

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			workload in terms of permits etc. This also involves the efficient processing of permits etc through [redacted] in Stat. Assessment section when/if required. We are working pretty well with the few permits required recently, so that process is getting better too. Let me know if you need any more info in this particular case and what your thoughts are on the best approach for future situations where we are removing dead/dying trees etc. I'm happy to put our heads together and get the best outcome for all of us. Cheers [redacted] [redacted]
[redacted]	22-SEP-2010	Source Confirmed	Source confirmed set to 'Yes'.
[redacted]	22-SEP-2010	Incident / Complaint / Compliance Activity Confirmed	Incident confirmed set to 'Yes'.
[redacted]	22-SEP-2010	Site Visit	On the way back from another job, [redacted], stopped in at the site. Observed that as well as the tree in question, three others had been removed, and one paperbark had been trimmed right back. While there, we met with a council Parks crew member who told us the original tree had been a willow, three of the removed trees were flame trees and the paperbark had been cut back because those bits were dying or dead. Photos taken.
[redacted]	22-SEP-2010	Email	Email sent by [redacted] SRT to [redacted], CC [redacted], as follows: Hi [redacted], Just getting back to you about the tree you reported having been cut down [redacted] Canning Beach Road in Applecross. I've looked into it, and it turns out that Melville Council had previously received a letter from the Trust in July 2010 (attached) which gives them permission to remove dead/dying/dangerous trees without a permit, using their best judgment. I wasn't aware of this letter, and I'm not sure whether it has gone to every local council. I guess it was a bit embarrassing from my point of view to be told about this letter by the council. I know the letter wasn't from yourself, which is why I've CC'd [redacted] in on this.

			I've attached pictures of the several trees which have been removed in that area (the one in question originally was a willow, and there were three flame trees, and a paperbark was trimmed right back) to show the extent of what can be done without a permit. This email is just for your information really. I don't know whether or not you knew about the Trust letter to the council, but seeing as it originated from Stat Planning and that's where this tree damage complaint also originated, I just feel like Riverpark Ops got left out of the loop a bit on this one. Thanks, [redacted] [redacted] Swan River Trust
[redacted]	22-SEP-2010	Email	Email sent from [redacted] SRT Sata Planning to [redacted], City of Melville CC [redacted] SRT as follows: Hi [redacted] The removal and replacement of the trees undertaken at the above address appears generally consistent with the letter, however we would stress that the extent to which the paperbark was cutback from over the water appears excessive and unnecessary, see attached. These trees along the riverbank (regardless of health) provide important habitat for birds and help stabilise the bank and protect your pathway infrastructure. We appreciate the interpretation issues, and Riverbank will be providing additional information in relation to our expectations regarding good judgment in the near future. In the meantime, I would encourage you contact the Trust if you plan to undertake similar works in your area. Thanks

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			[redacted] [redacted] - Statutory Planning Swan River Trust
[redacted]	22-SEP-2010	Email	Email sent by [redacted] City of Melville to [redacted] SRt CC [redacted] SRT as follows: Hi [redacted] Thank you for your comments and sending through this photograph. This photo wasn't in the original email from [redacted] and I wasn't aware that pruning and removal has occured so close to the banks but I would agree that this type of pruning / removal should warrant notification to the Trust (even if it is just for information/notification). I will clarify with all our parks and enviro. coordinators that when in doubt, to contact the Trust. We will consider the implications of instigating a consistent approach - such as anything on the river side of footpaths for instance, should be notifiable to the Trust. I completely agree and acknowledge the importance of these trees in bank stabilisation and infrastructure protection. I will talk our staff and work through the reasoning behind this particular case. Thanks again for your guidance and direction, please let me know if there is anything further you need from me. Cheers [redacted]
[redacted]	22-SEP-2010	Phone Call	Phone call to [redacted], City of Melville to clear up any misunderstandings about what the Trust was asking. I explained that I had for not previously been aware of the letter from the Trust to the council, [redacted] understood that the new arrangement which left it up to the council's judgement as to which trees could be removed without a permit, would need some fine tuning. As per his last email, he will speak with his Parks crew.
[redacted]	29-SEP-2010	Re-allocated	Re-allocated to [redacted].
	29-SEP-2010	Status	Status set to 'Under Investigation'.
	27-OCT-2010	LEEG Comments	LEEG Comment added.
	07-DEC-2010	LEEG Comments	LEEG Comment added.
	07-DEC-2010	Re-allocated	Re-allocated to [redacted]
	07-DEC-2010	Email	Email to [redacted] as below... Hi [redacted] with reference to the vegetation damage caused by the City of Melville along Canning Beach Road in Applecross, you mentioned at LEEG that there are some meeting notes. Could you please provide me with a copy for the ICMS folder?

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			Thank You [redacted] Swan River Trust
[redacted]	07-DEC-2010	Closed	Status set to 'Closed'.

ADVICE TO COMPLAINANTS

Name	Method	Date

[redacted] Sign Off: [redacted] Date: 7/12/2010

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DOCUMENT 10

Incident Report (IR)

ICMS Number: 18517 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]			Y

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 09-JUN-2010 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	Compliance Inspection	06-MAY-2010 00:00	No

Incident Type: Compliance Activity

Alleged Source of Emission	
Organisation:	Lic/Reg File No:
Address:	Suburb:
LGA:	PC:
Contact Name:	Position:
Phone:	Fax:

Description of incident 06-MAY-2010 00:00
Site inspection identified non compliances with condition 4 and condition 5 of Permits P10239 - P10242.

Category: SRT & Peel/Harvey Rivers & Waterways Mgnt Sub-category:
General complaints

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:Yes [redacted] -06-MAY-2010)	Yes [redacted] -06-MAY-2010)
Comme Source confirmed during site inspection on 6 may 2010 as City of Melville, works associated with Permits P10239 - P10242	Comment: Site inspection on 6/5/10 confirmed non compliance s with conditions 4 and 5 of Permits P10239 - P10242

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	06-MAY-2010	Incident / Complaint / Compliance Activity Confirmed	Compliance Activity confirmed set to 'Yes'.
[redacted]	06-MAY-2010	Site Inspection	Site inspection conducted to determine compliance with permits P10239, P10240, P10241 and P10242. Non-compliances were identified with codntiiosn 4 and 5 of the above permits.
[redacted]	06-MAY-2010	Source Confirmed	Source confirmed set to 'Yes'.
[redacted]	18-MAY-2010	Letter	Letter sent to City of Melville requesting explanation of non compliances identified in 6 May 2010 inspection.
[redacted]	31-MAY-2010	Letter	Response letter received from City of Melville - view is that the infringements are only of a 'relatively minor nature' and will 'have a minor impact against the neighbouring vegetation.' The

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			CIty admits that "there was only very limited working space available" for the works, but didnt not provide reasoning as to why the path was not constructed as required by condition 4 - ie with the pathway not being within 0.6 metres of any tree or foreshore vegetation.
[redacted]	31-MAY-2010	Phone Call	Phone call to [redacted] r for this project, City of Melville and requested further information as to why this tree was removed and why the SRT was not notified and did not approve the removal. [redacted] phoned back 1/6/2010 and siad that the tree had fallen over on the weekend "a couple of weeks ago" and had to be removed.
[redacted]	31-MAY-2010	Site Visit	Site visit conducted on 31/5/10 and a tree located in the middle of the proposed path had been removed. No notification had been received or approval given to do so by the Swan River Trust
[redacted]	02-JUN-2010	Priority	Priority set to 'Priority 3 (Response within 7 days)'.
	02-JUN-2010	Status	Status set to 'Received'.
	02-JUN-2010	Re-allocated	Re-allocated to [redacted].
	03-JUN-2010	LEEG Comments	LEEG Comment added.
	25-JUN-2010	Site Inspection	Site inspection conducted to determine compliance with all permit conditions.
	29-JUN-2010	Letter	SRT LEEG decided to write a letter as a part of a compliance inspection for all four permits on 25 June 2010
[redacted]	22-JUL-2010	LEEG Comments	LEEG Comment added.
	19-AUG-2010	Site Inspection	Site inspection was conducted to determine compliance with permit conditions
	07-SEP-2010	LEEG Comments	LEEG Comment added.
	09-SEP-2010	Re-allocated	Re-allocated to [redacted].
	09-SEP-2010	Status	Status set to 'Finalised'.
	13-SEP-2010	Further Investigations	Discussions with [redacted] and [redacted] determined that no Infringement Notices were issued after 2 June 2010 LEEG meeting due to misunderstandings of enforcement actions to be undertaken
[redacted]	13-SEP-2010	Re-allocated	Re-allocated to [redacted].
	13-SEP-2010	Status	Status set to 'Under Investigation'.
	27-OCT-2010	Other	See also ICMS 19368
	27-OCT-2010	LEEG Comments	LEEG Comment added.
	27-OCT-2010	Re-allocated	Re-allocated to [redacted]
	11-NOV-2010	Closed	Status set to 'Closed'.

ADVICE TO COMPLAINANTS

Name	Method	Date

[redacted] Sign Off: [redacted] Date: 11/11/2010

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DOCUMENT 11

Incident Report (IR)

ICMS Number: 18339 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]			Y

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 18-MAY-2010 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	[redacted]	05-MAY-2010 12:00	No

Incident Type: Complaint

Alleged Source of Emission	
Organisation:	Lic/Reg File No:
Address:	Suburb:
LGA:	PC:
Contact Name:	Position:
Phone:	Fax:

Description of incident 05-MAY-2010 12:00
Dinghy chained to tree [redacted] Canning Beach Road Applecross.

Category: SRT & Peel/Harvey Rivers & Waterways Mgnt Sub-category:
Destruction of vegetation

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:No ([redacted]-07-MAY-2010)	Yes ([redacted]-07-MAY-2010)
Comme	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	07-MAY-2010	Incident / Complaint / Compliance Activity Confirmed	Complaint confirmed set to 'Yes'.
[redacted]	07-MAY-2010	Site Visit	Visit to site. Observed around ten dinghies stored in this location. most of them are chained to council bollards. But one blue plastic dinghy is chained to base of a paperbark. Evidence of bark rubbing. Notice 1v attached. Photos taken.
[redacted]	07-MAY-2010	Source Confirmed	Source confirmed set to 'No'.
	11-MAY-2010	Priority	Priority set to 'Priority 3 (Response within 7 days)'.
	11-MAY-2010	Status	Status set to 'Received'.
	11-MAY-2010	Re-allocated	Re-allocated to [redacted]
	17-JUN-2010	Site Inspection	Visit to site. Dinghy still present, but the chain has been removed from the tree and is now attached to

Photos: Access Refused Section 26

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DOCUMENT 11

			the council bollard, along with all the others. No further action required.
[redacted]	17-JUN-2010	Re-allocated	Re-allocated to [redacted].
[redacted]	17-JUN-2010	Status	Status set to 'Under Investigation'.
[redacted]	21-JUN-2010	Closed	Status set to 'Closed'.

ADVICE TO COMPLAINANTS

Name	Method	Date

[redacted] Sign Off: [redacted] Date: 21/6/2010

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DOCUMENT 12

Incident Report (IR)

ICMS Number: 15995 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]			Y

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 23-AUG-2009 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	In Person	16-AUG-2009 13:35	Yes

Incident Type: Incident

Alleged Source of Emission	
Organisation:	Lic/Reg File No:
Address:	Suburb:
LGA:	PC:
Contact Name:	Position:
Phone:	Fax:

Description of incident 16-AUG-2009 13:35
Tenders (Min 2) attached to vegetation by chains [redacted] Canning Beach Rd Applecross.

Category: SRT & Peel/Harvey Rivers & Waterways Mgnt Sub-category:
Destruction of vegetation

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:Yes [redacted] -16-AUG-2009)	Yes [redacted] -16-AUG-2009)
Comment:	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	16-AUG-2009	Site Visit	Whilst conducting weekend patrols in this area, I located the vessels attached to the vegetation at this location. Photo's taken and boats to be targeted with other vessels around the river.
	Photos: Access Refused Section 26		
[redacted]	01-SEP-2009	Site Visit	Visited site with [redacted] SRT in order to attach boat notices to vessels. Photographs and dcumentary evidence also taken.
[redacted]	01-SEP-2009	Further Investigations	Dinghy. Fibreglass. Yellow. Reg [redacted] Chained to tree. Notice 1v attached.
[redacted]	01-SEP-2009	Further Investigations	Dinghy. Fibreglass. White. [redacted] 5. Chained to tree. Notice 1v attached.
[redacted]	01-SEP-2009	Further Investigations	Dinghy. Fibreglass. White. [redacted] Chained tightly to tree. Notice 1v attached.
[redacted]	01-SEP-2009	Further Investigations	Dinghy. fibreglass. White, blue gunwales. Tender to [redacted]. chained tightly to tree. Notice 1v attached.
[redacted]	01-SEP-2009	Phone Call	Phone call to [redacted] at the City of Melville to advise of the boat notices attached to dinghies.

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[redacted]	06-OCT-2009	Site Visit	Visited site with [redacted] SRT to inspect dinghies. Any which were still not complying were to have a second notice attached, informing them they have four weeks to remove the chain or picket, or it will be removed by the Trust.
[redacted]	06-OCT-2009	Further Investigations	Dinghy. Fibreglass. White. Blue gunwales. Tender to [redacted] chained very tightly to tree. Notice 1v still attached. Removed this, attached 2v. Departed site at 12:30.
[redacted]	13-NOV-2009	Site Inspection	Visited site with [redacted] SRT to inspect dinghies. No dinghies were found attached to vegetation. Departed at 11:15
[redacted]	07-DEC-2009	No Further Action	No further action required.

ADVICE TO COMPLAINANTS

Name	Method	Date

[redacted] Sign Off: [redacted] Date: 16/12/2009

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DOCUMENT 13

Incident Report (IR)

ICMS Number: 9247 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]			Y

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 11-JUN-2007 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	Email	28-MAY-2007 16:30	No

Incident Type: Complaint

Alleged Source of Emission (More details available - see system)	
Organisation:	Lic/Reg File No: 9693-16
Address:	Suburb:
LGA:	PC:
Contact Name:	Position:
Phone:	Fax:

Description of incident 28-MAY-2007 16:37
Multiple trees reported to be damaged at the [redacted] development site.

Category: SRT & Peel/Harvey Rivers & Waterways Mgnt Sub-category:
Destruction of vegetation

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:No [redacted] -01-JUN-2007)	Yes [redacted] -01-JUN-2007)
Comm	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	28-MAY-2007	Email	[redacted] at the Trust sent an email to me detailing that a number of tree's had beem damaged at the [redacted] development site.
[redacted]	01-JUN-2007	Site Inspection	Observed 2 landscape trees that have been poisoned, and the majority of the trees had the tops snapped off at the same level as the brick wall to allow maximum viewing from the apartments behind. Three trees also appear to be missing, most likely removed by vandals
[redacted]	07-JUL-2007	Other	Matter referred to LEEG for further action.
[redacted]	07-JUL-2007	Other	LEEG group resolved to investigate if surviellance is possible and to ask [redacted] to replace the trees if the surviellace goes ahead.
[redacted]	22-AUG-2007	Other	[redacted] replaces 6 plants in total at the [redacted] site for the purpose of the Trust undertaking surviellance. See the survillance report for further information.

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[redacted]	22-AUG-2007	Further Investigations	Conducted a surviellance opertation overnight on the 22 August and 23 August 2007. The surviellance did not catch any offenders.
[redacted]	28-AUG-2007	Letter	Letter sent to residents of the [redacted] site regarding the investigation of the damage and removal of trees, the importance of these trees to the environment etc, and requesting of any information into the damaged trees that would aid with the investigation.
[redacted]	06-SEP-2007	Site Visit	Met on site with City of Melville [redacted]) to discuss palcement of tree damage signage at the [redacted] site.
[redacted]	13-SEP-2007	Letter	Letter sent to all [redacted] informing that the SRT in conjunction with City of Melville intended to install A4 size signs adjacent to all damaged trees and that the next incident of damage woudl result in a 1.8 x 3m sign installed at the site.
[redacted]	20-SEP-2007	Site Visit	SRT officers installed 8 'tree damage' signs against damaged trees [redacted].
	03-OCT-2007	Site Visit	Inspected trees and signs, all still intact.
	18-OCT-2007	Site Visit	trees and signs still intact
	25-OCT-2007	Email	Received email from [redacted]t regarding the tree damage and installation of signs. Hardcopy is attached to the
	26-OCT-2007	Site Visit	Trees and signs still intact.
	03-DEC-2007 Photos: Access Refused Section 26	Site Inspection	Inspected the trees which had previosly been vandalisde. Two trees were found to have to have been damaged again. One tree had been snapped off at the base, while the other had the top part of it removed. Two other trees had the stakes that support them pushed over, these trees showed no signs of damage. Note, the four locations mentioned are four of the sites that previoulsy had signs installed "see action 20/9/2007" of this ICMS. Photos were taken and are attached. I removed the damage and discarded stake from the site for public safety reasons.
[redacted]	03-DEC-2007	Phone Call	Left a message with [redacted] to return my call regarding the [redacted] trees.
[redacted]	04-DEC-2007	Phone Call	[redacted] returned my call, I advised him of the tree and stake damage. He indicated he would see to the trees being replaced, however it probably wouldn't be this week [redacted] The trees would be replaced the following week.
[redacted]	05-DEC-2007	Email	Notification of further tree damage at [redacted] to [redacted]. As below Hi [redacted], Just to keep you in the loop we received a report of tree damage at [redacted] on Monday (I apologise for the delay in letting you both know) The Damage was two trees with branches snapped off and a stakes removed.) Both of the trees were next to tree damage signs. It is highly likely they were damaged by [redacted] leaving the hotel and no tools were used in the damage. We have notified [redacted] of the damage. We are opportunistically keeping an eye on the area and I will let you know if we receive any further reports. Thanks [redacted] Swan River Trust

RELEASED UNDER THE FREEDOM OF INFORMATION ACT 1992
UNLESS NOTED WITH AN EXEMPTION CLAUSE, REDACTED INFORMATION IS OUTSIDE THE APPLICATION SCOPE
DOCUMENT 13

			[redacted] Level 1 Hyatt Centre 20 Terrace Road East Perth [redacted]
[redacted]	20-DEC-2007	Site Visit	Confirmed that the damaged trees and stakes had been replaced/reparied.
	11-JAN-2008	Site Visit	Trees and signs still intact
	14-FEB-2008	Site Visit	Trees and signs intact
	18-MAR-2008	Email	After hours number contacted and message left: Wooden posts that hold up trees have been kicked over.
[redacted]	19-MAR-2008	Phone Call	Rang [redacted], he said he would have staff visit the site tomorrow morning and replace the posts.
[redacted]	20-MAR-2008	Phone Call	Attempted to contact complainant.
[redacted]	15-JUL-2008	Site Inspection	Site inspection with [redacted]. All appeared correct.
[redacted]	29-AUG-2009	Site Inspection	Site inspection conducted and 16 x trees located situated around [redacted] apartments and all the trees appeard to be in good condition. Only 7 x small A4 size signs located in front of the trees.
[redacted]	01-SEP-2009	Phone Call	Phone call to [redacted] at the City of Melville [redacted] and we discussed the 'Veg Damage' signs at this location. City of Melville have had no further complaints of damage and support and Trust decison to remove them.
[redacted]	12-NOV-2009	Phone Call	Phone call to [redacted] at the City of Melville [redacted] and apologised for the delay in the removal of the sign, however advised [redacted] tha the signs will be remvoved Wed/Thurs 18th-19th Nov 2009. [redacted] thanked the Trust and would advise [redacted].
[redacted]	18-NOV-2009	Other	Vegetation damage sign removed from this site and ICMS 10753 and 9938 (Attadle) without incident.
[redacted]	19-NOV-2009	Phone Call	Phone call to [redacted] at the City of Melville [redacted] to confirm that the signs have been removed. Message with detail left on answering machine.
[redacted]	07-DEC-2009	No Further Action	No further action required at this time, will continue to monitor these sites.

ADVICE TO COMPLAINANTS

Name	Method	Date

[redacted] Sign Off: [redacted] Date: 16/12/2009

RELEASED UNDER THE FREEDOM OF INFORMATION ACT 1992 40
UNLESS NOTED WITH AN EXEMPTION CLAUSE, REDACTED INFORMATION IS OUTSIDE THE APPLICATION SCOPE
DOCUMENT 14

Incident Report (IR)

ICMS Number: 5540 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]	[redacted]	[redacted]	Y

INCIDENT DETAILS

PRIORITY: Priority 3 (Response within 7 days) DUE DATE: 10-FEB-2006 00:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	Phone	03-FEB-2006 12:14	No

Incident Type: Complaint

Alleged Source of Emission	
Organisation: [redacted]	Lic/Reg File No:
Address:	Suburb:
LGA:	PC:
Contact Name:	Position:
Phone:	Fax:

Description of incident 03-FEB-2006 12:16
Concerned about [redacted] development dewatering entering the river on the north side of the building. Looks like it has lots of minerals in it.

Category: SRT & Peel/Harvey Rivers & Waterways Mgnt Sub-category:
Industrial discharge/dewatering

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:Yes [redacted] 17-FEB-2006)	Yes [redacted] 17-FEB-2006)
Comment:	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	28-FEB-2006	Letter	Letter to [redacted] RE water quality dicharge issue
	20-OCT-2006	Other	Matter to be reolved through [redacted] for landscaping, refer [redacted]

ADVICE TO COMPLAINANTS

Name	Method	Date
Not For Broadcast (NFB) advised by [redacted] [redacted]	Phone	20-OCT-2006

[redacted] Sign Off: [redacted] Date: 20/10/2006

RELEASED UNDER THE FREEDOM OF INFORMATION ACT 1992
UNLESS NOTED WITH AN EXEMPTION CLAUSE, REDACTED INFORMATION IS OUTSIDE THE APPLICATION SCOPE
DOCUMENT 15

Incident Report (IR)

ICMS Number: 1987 Complaints File Number: _____

COMPLAINANT DETAILS

Name	Physical Address	Contact Details	NFB (Y/N)
[redacted]	[redacted]	[redacted]	N

INCIDENT DETAILS

PRIORITY: Other DUE DATE: 25-DEC-2004 13:00

Receiving Officer	Report Medium	Date/Time	A/H
[redacted]	Phone	20-DEC-2004 15:40	No

Incident Type: Complaint

Alleged Source of Emission	
Organisation:	Lic/Reg File No: 9693-11
Address:	Suburb:
LGA:	PC:
Contact Name:	Position:
Phone:	Fax:

Description of incident 20-DEC-2004 12:41
A large grey blanket is in the water near the [redacted] and runs along the foreshore. Complainant can also smell a foul odour.

Category: SRT & Peel/Harvey Rivers & Waterways Mgnt Sub-category:
General complaints

INCIDENT FOLLOWUP

Emission Source Confirmed:	Incident Confirmed:
:No ([redacted]-21-DEC-2004)	No ([redacted]-21-DEC-2004)
Comment: System comment - As incident is not confirmed, source confirmed is set to NO	Comment:

Referred to other agency	Date Referred

Actions taken:

Officer	Date of Investigation	Action Undertaken	Officer Comment
[redacted]	21-DEC-2004	No Further Action	No further action required.
	21-DEC-2004	Site Inspection	The grey blanket is geotextile fabric used to minimise erosion. There was no odour present when I was onsite.

ADVICE TO COMPLAINANTS

Name	Method	Date
[redacted] advised by [redacted]	Phone	24-DEC-2004

[redacted] Sign Off: [redacted] Date: 10/2/2005

Appendix I

Calibration certificate

PID Calibration Certificate 14.0 1442025P

Instrument Tiger XT
Serial No. XT-100654

Air-Met Scientific Pty Ltd
1800 000 744

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	✓	10.6 eV			
Alarms	Beeper	✓	**Low**	**High**	**TWA**	**STEL**
	Settings	✓	50ppm	100ppm	100ppm	250ppm
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		92ppm Isobutylene	NIST	WA427		92ppm Isobutylene

Calibrated by: Reuben Priest

Calibration date: **14/04/2025**

Next calibration due: **11/10/2025**

Appendix J

Bore logs

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

SOIL BORE GHD_Applecross_HA01

Client Perth Transport Authority
Project PTA Ferry Expansion PSI
Project No. 12658388
Site PTA Swan River
Monitoring Zone GHD_Applecross
Date Drilled 01/05/2025 - 01/05/2025

Drill Co. -
Driller -
Rig Type -
Drill Method Hand augur
Total Depth (m) 1.50
Diameter (mm) 50

Latitude 32° 0'35.93
Longtitude 115°51'3.83"E
Grid Ref -
Elevation -
Logged By ZL & CA
Checked By ZL

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
	HA					GRASS			Grass over dark brown sands, with organics	
0.1		0.2	GHD_APPLECROSS_HA01_0.1			SAND medium, poorly graded, subangular to subrounded, grey, angular to subangular, medium to coarse, gap graded gravel, trace fine to coarse gravel, trace organics (FILL)	SM	MD		-0.1
0.2										-0.2
0.3		0	GHD_APPLECROSS_HA01_0.3							-0.3
0.4						SAND medium, poorly graded, subangular to subrounded, orange (FILL)	SM	MD		-0.4
0.5										-0.5
0.6		0	GHD_APPLECROSS_HA01_0.6			SAND medium to coarse, poorly graded, subangular to subrounded, grey (NATURAL - SOIL)	W	MD	Becomes more saturated with depth	-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3		0	GHD_APPLECROSS_HA01_1.25			SAND medium to coarse, poorly graded, subangular to subrounded, grey (NATURAL - SOIL)	S	MD		-1.3
1.4										-1.4
1.5						Termination Depth at: 1.50 m. Target depth achieved.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

SOIL BORE GHD_Applecross_HA02

Client Perth Transport Authority
Project PTA Ferry Expansion PSI
Project No. 12658388
Site PTA Swan River
Monitoring Zone GHD_Applecross
Date Drilled 01/05/2025 - 01/05/2025

Drill Co. -
Driller -
Rig Type -
Drill Method Hand augur
Total Depth (m) 1.50
Diameter (mm) 50

Latitude 32° 0'36.72"S
Longtitude 115°51'6.90"E
Grid Ref -
Elevation -
Logged By ZL & CJ
Checked By ZL

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
	HA					GRASS				
0.1		0	GHD_APPLECROSS_HA02_0.1			SAND medium, poorly graded, subangular to subrounded, pale brown, angular to subangular, coarse, gap graded gravel, trace cobbles (FILL)	D	L		-0.1
0.2										-0.2
0.3										-0.3
0.4		0	GHD_APPLECROSS_HA02_0.4			SAND medium, well graded, subangular to subrounded, pale yellow mottled dark grey, subangular to subrounded, medium, well graded sand, angular to subangular, medium to coarse, gap graded gravel, some medium to coarse gravel (FILL)	D	L		-0.4
0.5										-0.5
0.6		0	GHD_APPLECROSS_HA02_0.6			SAND medium, uniform, subrounded, pale grey (possible NATURAL - SOIL)	SM	MD		-0.6
0.7										-0.7
0.8		0	GHD_APPLECROSS_HA02_0.8			SAND medium to coarse, uniform, subrounded, pale grey (possible NATURAL - SOIL)	W	MD		-0.8
0.9										-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4
1.5						Termination Depth at: 1.50 m. Target depth achieved.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

SOIL BORE GHD_Applecross_HA03

Client Perth Transport Authority
Project PTA Ferry Expansion PSI
Project No. 12658388
Site PTA Swan River
Monitoring Zone GHD_Applecross
Date Drilled 01/05/2025 - 01/05/2025

Drill Co. -
Driller -
Rig Type -
Drill Method Hand augur
Total Depth (m) 1.00
Diameter (mm) 50

Latitude 32° 0'39.81"S
Longtitude 115°51'7.73"E
Grid Ref -
Elevation -
Logged By ZL & CA
Checked By ZL

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
0	HA					GRASS				0
0.1		0	GHD_APPLECROSS_HA03_0.1			SAND medium, poorly graded, subangular to subrounded, brown, subangular, coarse, poorly graded gravel, trace coarse gravel, trace rootlets (FILL)	SM	L		-0.1
0.2		0	GHD_APPLECROSS_HA03_0.2			SAND fine to medium, well graded, subangular to subrounded, orange (FILL)	SM	L		-0.2
0.5		0	GHD_APPLECROSS_HA03_0.5							-0.5
1						Termination Depth at: 1.00 m. Target depth achieved.				-1

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

Appendix K

Laboratory documentation

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

GHD
Level 10, 999 Hay Street Perth WA 6000
PO Box 3106 Perth WA 6832
Reception Ph: 08 6222 8222

Project ID *(as per ESdat set up; no spaces)* 12658388	**PO Number** (to be invoiced) 12658388
Laboratory Quote No.	**Turnaround Time** Standard
Project Manager (Invoice) & GHD accounts AccountsPayableAU@ghd.com	**Email Address (Results)** GHD.LabReports@ghd.com

Laboratory: Eurofins | ARL
Address: 46-48 Banksia Rd, Welshpool WA 6106
Laboratory Contact:

GHD Sample ID	Lab Sample ID	Date	Time	Sample Matrix S-Soil/ SL-Sludge/ W-Water/ A-Air	Container: Type B-Bottle/J-Jar/V-Vial/Bag/G-Glass/P-Plastic	Container: Preservative Unpreserved/ HCl/ H2SO4/HNO3/Other	Container: No	Analyses: Metals (8), TRH, BTEXN, PAH, Chlorinated hydrocarbons, VOC/SVOC	Analyses: VOC/SVOC	Analyses: Hold	Analyses: HOLD	Remarks
RIN1		1/05/2025		W				X				Metals (8) arsenic, cadmium, chromium, copper, nickel, lead, zinc, and mercury. Please report as GHD-QC06
RIN2		2/05/2025		W				X				Please report as GHD-QC07
FIELD1		2105/2025		W				X				Please report as GHD-QC08
FIELD2		2/05/2025		W				X				Please report as GHD-QC09
DUP1		1/05/2025		S				X				Please report as GHD-QC10
DUP2		1/05/2025		S				X				Please report as GHD-QC11
DUP3		2/05/2025		S						X		Please report as GHD-QC12
TRIP1		5/05/2025		S					X			Please report as GHD-QC13

Sampled by: Zak L & Connor A	Date/Time: 1-2/05/25	Relinquished by: Zak L & Connor A	Date/Time: 5/5/2025
Received by:	Date/Time:	Relinquished by:	Date/Time:

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

GHD
Level 10, 999 Hay Street Perth WA 6000
PO Box 3106 Perth WA 6832
Reception Ph: 08 6222 8222

Project ID *(as per ESdat set up; no spaces)* 12658388	**PO Number** (to be invoiced) 12658388
Laboratory Quote No.	**Turnaround Time** Standard
Project Manager (Invoice) & GHD accounts AccountsPayableAU@ghd.com	**Email Address (Results)** GHD.LabReports@ghd.com

Laboratory:
Address:
Laboratory Contact:

GHD Sample ID	Lab Sample ID	Date	Time	Sample Matrix S-Soil/ SL-Sludge/ W-Water/ A-Air	Container: Type B-Bottle/J-Jar/V-Vial/Bag/G-Glass/P-Plastic	Container: Preservative Unpreserved/ HCl/ H2SO4/HNO3/Other	Container: No	Analyses: Metals (8), TRH, BTEXN, PAH, Chlorinated hydrocarbons	Analyses: VOC/SVOC	Analyses: HOLD	Remarks
GHD_MatBay1_HA01_0.1		2/05/2025		S				X			Metals (8) arsenic, cadmium, chromium, copper, nickel, lead, zinc, and mercury.
GHD_MatBay1_HA01_0.2		2/05/2025		S				X			
GHD_MatBay1_HA01_0.8		2/05/2025		S				X			
GHD_MatBay1_HA02_0.1		2/05/2025		S				X			
GHD_MatBay1_HA02_0.3		2/05/2025		S				X			
GHD_MatBay1_HA02_0.7		2/05/2025		S				X			
GHD_MatBay1_HA03_0.1		2/05/2025		S				X			
GHD_MatBay1_HA03_0.3		2/05/2025		S				X			
GHD_MatBay1_HA03_0.6		2/05/2025		S				X			
GHD_MatBay2_HA01_0.1		2/05/2025		S				X			
GHD_MatBay2_HA01_0.3		2/05/2025		S				X			
GHD_MatBay2_HA01_0.5		2/05/2025		S				X			
GHD_MatBay2_HA02_0.1		2/05/2025		S				X			
GHD_MatBay2_HA02_0.3		2/05/2025		S				X			
GHD_MatBay2_HA02_0.5		2/05/2025		S				X			
GHD_MatBay2_HA03_0.1		2/05/2025		S				X			
GHD_MatBay2_HA03_0.2		2/05/2025		S				X			
GHD_MatBay2_HA03_0.5		2/05/2025		S				X			

Sampled by: Zak L & Connor A	Date/Time: 1-2/05/25	Relinquished by: Zak L & Connor A	Date/Time: 5/5/2025
Received by:	Date/Time:	Relinquished by:	Date/Time:

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

GHD
Level 10, 999 Hay Street
Perth WA 6000
PO Box 3106
Perth WA 6832
Reception Ph: 08 6222 8222

Project ID *(as per ESdat set up; no spaces)* 12658388	**PO Number** (to be invoiced) 12658388
Laboratory Quote No.	**Turnaround Time** Standard
Project Manager (Invoice) & GHD accounts AccountsPayableAU@ghd.com	**Email Address (Results)** GHD.LabReports@ghd.com

Laboratory: Eurofins | ARL
Address: 46-48 Banksia Rd, Welshpool WA 6106
Laboratory Contact:

GHD Sample ID	Lab Sample ID	Date	Time	Sample Matrix S-Soil/ SL-Sludge/ W-Water/ A-Air	Container: Type B-Bottle/J-Jar/V-Vial/Bag/G-Glass/P-Plastic	Container: Preservative Unpreserved/ HCl/ H2SO4/HNO3/Other	Container: No	Analyses: Metals (8), TRH, BTEXN, PAH, Chlorinated hydrocarbons	Analyses: BTEXN, VOC/SVOC	Analyses: ACM ID	Analyses: asbestos fibre presence	Analyses: HOLD	Remarks
GHD_Applecross_HA01_0.1		1/05/2025		S				X					Metals (8) arsenic, cadmium, chromium, copper, nickel, lead, zinc, and mercury.
GHD_Applecross_HA01_0.3		1/05/2025		S				X					
GHD_Applecross_HA01_0.6		1/05/2025		S				X					
GHD_Applecross_HA01_1.25		1/05/2025		S				X					
GHD_Applecross_HA02_0.1		1/05/2025		S				X					
GHD_Applecross_HA02_0.4		1/05/2025		S				X					
GHD_Applecross_HA02_0.6		1/05/2025		S				X					
GHD_Applecross_HA02_0.8		1/05/2025		S				X					
GHD_Ellam_St_HA01_0.0		1/05/2025		S				X					
GHD_Ellam_St_HA01_0.2		1/05/2025		S				X					
GHD_Ellam_St_HA01_0.4		1/05/2025		S				X		X			
GHD_Ellam_St_HA02_0.1		1/05/2025		S				X					
GHD_Ellam_St_HA02_0.3		1/05/2025		S				X					
GHD_Ellam_St_HA02_0.5		1/05/2025		S				X					
GHD_Ellam_St_HA03_0.1		1/05/2025		S				X					
GHD_Ellam_St_HA03_0.4		1/05/2025		S				X					
GHD_Ellam_St_HA03_0.5		1/05/2025		S				X					
GHD_Ellam_St_HA03_0.8		1/05/2025		S				X					

Additional Samples:
GHD_Applecross_HA03_0.1
" _0.2
" _0.5

Note the remarks for RINJ → TRIP1

Sampled by: Zak L & Connor A	Date/Time: 1-2/05/25	Relinquished by: Zak L & Connor A	Date/Time: 5/5/2025
Received by:	Date/Time: 05/05/25 14:55	Relinquished by:	Date/Time:

GHD Pty Ltd WA
999 Hay Street Perth
Perth
WA 6004

NATA Accredited
Accreditation Number 2377
Site Number 2370 & 2554

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

Attention: **Zak Langtry**

Report **1215966-S**
Project name
Project ID 12658388
Received Date May 05, 2025

Client Sample ID			**GHD_APPLECROSS_HA01_0.1**	**GHD_APPLECROSS_HA01_0.3**	**GHD_APPLECROSS_HA01_0.6**	**GHD_APPLECROSS_HA01_1.25**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012120**	**L25-My0012121**	**L25-My0012122**	**L25-My0012123**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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
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	%	66	69	64	73
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012120**	**L25-My0012121**	**L25-My0012122**	**L25-My0012123**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Volatile Organics						
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	66	69	64	73
Toluene-d8 (surr.)	1	%	124	98	88	116
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
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

Client Sample ID			GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012120**	**L25-My0012121**	**L25-My0012122**	**L25-My0012123**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	68	74	54	68
p-Terphenyl-d14 (surr.)	1	%	91	94	96	102
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	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
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	68	74	54	68
2-Methylnaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012120**	**L25-My0012121**	**L25-My0012122**	**L25-My0012123**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
2-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2-Picoline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Tribromophenol (surr.)	1	%	91	94	96	102
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
4.4'-DDD	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
a-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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
Acetophenone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aniline	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
b-HCH	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
Benzyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
d-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012120**	**L25-My0012121**	**L25-My0012122**	**L25-My0012123**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
Di-n-octyl phthalate	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
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenzofuran	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dieldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin ketone	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
g-HCH (Lindane)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachloroethane	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
Methoxychlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosopiperidine	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
Nitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Nitrobenzene-d5 (surr.)	1	%	81	79	58	71
Pentachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	50	74	107	117
Pronamide	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
Trifluralin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Metals M8						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	1	mg/kg	4.3	6.0	2.5	1.6
Copper	1	mg/kg	5.1	3.3	1.8	1.2
Lead	1	mg/kg	39	68	17	6.4
Mercury	0.02	mg/kg	0.02	0.03	0.03	0.04

Client Sample ID			GHD_APPLECROSS_HA01_0.1	GHD_APPLECROSS_HA01_0.3	GHD_APPLECROSS_HA01_0.6	GHD_APPLECROSS_HA01_1.25
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012120**	**L25-My0012121**	**L25-My0012122**	**L25-My0012123**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Metals M8						
Nickel	1	mg/kg	1.2	1.7	< 1	< 1
Zinc	5	mg/kg	26	46	16	8.0
% Moisture	1	%	7.4	7.2	13	24

Client Sample ID			GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.4	GHD_APPLECROSS_HA02_0.6	GHD_APPLECROSS_HA02_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012124**	**L25-My0012125**	**L25-My0012126**	**L25-My0012127**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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
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	%	97	69	62	57
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.4	GHD_APPLECROSS_HA02_0.6	GHD_APPLECROSS_HA02_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012124**	**L25-My0012125**	**L25-My0012126**	**L25-My0012127**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Volatile Organics						
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	97	69	62	57
Toluene-d8 (surr.)	1	%	113	83	142	110
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
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

Client Sample ID			GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.4	GHD_APPLECROSS_HA02_0.6	GHD_APPLECROSS_HA02_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012124**	**L25-My0012125**	**L25-My0012126**	**L25-My0012127**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	52	68	64	72
p-Terphenyl-d14 (surr.)	1	%	68	106	100	111
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	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
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	52	68	64	72
2-Methylnaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.4	GHD_APPLECROSS_HA02_0.6	GHD_APPLECROSS_HA02_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012124**	**L25-My0012125**	**L25-My0012126**	**L25-My0012127**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
2-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2-Picoline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Tribromophenol (surr.)	1	%	68	106	100	111
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
4.4'-DDD	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
a-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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
Acetophenone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aniline	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
b-HCH	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
Benzyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
d-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.4	GHD_APPLECROSS_HA02_0.6	GHD_APPLECROSS_HA02_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012124**	**L25-My0012125**	**L25-My0012126**	**L25-My0012127**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
Di-n-octyl phthalate	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
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenzofuran	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dieldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin ketone	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
g-HCH (Lindane)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachloroethane	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
Methoxychlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosopiperidine	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
Nitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Nitrobenzene-d5 (surr.)	1	%	57	68	58	65
Pentachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	63	96	74	102
Pronamide	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
Trifluralin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Metals M8						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	1	mg/kg	6.5	6.9	1.5	< 1
Copper	1	mg/kg	3.1	2.7	< 1	< 1
Lead	1	mg/kg	9.4	15	1.9	< 1
Mercury	0.02	mg/kg	0.02	0.03	< 0.02	< 0.02

Client Sample ID			GHD_APPLECROSS_HA02_0.1	GHD_APPLECROSS_HA02_0.4	GHD_APPLECROSS_HA02_0.6	GHD_APPLECROSS_HA02_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012124**	**L25-My0012125**	**L25-My0012126**	**L25-My0012127**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Metals M8						
Nickel	1	mg/kg	1.0	1.0	< 1	< 1
Zinc	5	mg/kg	17	19	< 5	< 5
% Moisture	1	%	4.2	4.5	3.2	14

Client Sample ID			GHD_ELLAM_ST_HA01_0.0	GHD_ELLAM_ST_HA01_0.2	GHD_ELLAM_ST_HA02_0.1	GHD_ELLAM_ST_HA02_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012128**	**L25-My0012129**	**L25-My0012131**	**L25-My0012132**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	44	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	1600	110	< 50	< 50
TRH C29-C36	50	mg/kg	1600	140	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	3244	250	< 50	< 50
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	%	71	73	61	66
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_ELLAM_ST_HA01_0.0	GHD_ELLAM_ST_HA01_0.2	GHD_ELLAM_ST_HA02_0.1	GHD_ELLAM_ST_HA02_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012128**	**L25-My0012129**	**L25-My0012131**	**L25-My0012132**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Volatile Organics						
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	71	73	61	66
Toluene-d8 (surr.)	1	%	112	118	78	78
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	110	< 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
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

Client Sample ID			GHD_ELLAM_ST_HA01_0.0	GHD_ELLAM_ST_HA01_0.2	GHD_ELLAM_ST_HA02_0.1	GHD_ELLAM_ST_HA02_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012128**	**L25-My0012129**	**L25-My0012131**	**L25-My0012132**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	80	60	69	67
p-Terphenyl-d14 (surr.)	1	%	90	81	82	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	110	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	2700	210	< 100	< 100
TRH >C34-C40	100	mg/kg	820	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	3630	210	< 100	< 100
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	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
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	80	60	69	67
2-Methylnaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1

Client Sample ID			GHD_ELLAM_ST_HA01_0.0	GHD_ELLAM_ST_HA01_0.2	GHD_ELLAM_ST_HA02_0.1	GHD_ELLAM_ST_HA02_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012128**	**L25-My0012129**	**L25-My0012131**	**L25-My0012132**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
2-Picoline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Tribromophenol (surr.)	1	%	90	81	82	89
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
4.4'-DDD	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
a-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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
Acetophenone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aniline	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
b-HCH	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
Benzyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
d-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-octyl phthalate	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
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_ELLAM_ST_HA01_0.0	GHD_ELLAM_ST_HA01_0.2	GHD_ELLAM_ST_HA02_0.1	GHD_ELLAM_ST_HA02_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012128**	**L25-My0012129**	**L25-My0012131**	**L25-My0012132**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
Dibenzofuran	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dieldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin ketone	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
g-HCH (Lindane)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachloroethane	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
Methoxychlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosopiperidine	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
Nitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Nitrobenzene-d5 (surr.)	1	%	87	73	86	78
Pentachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	51	72	62	53
Pronamide	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
Trifluralin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Metals M8						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	1	mg/kg	3.6	3.2	3.9	4.3
Copper	1	mg/kg	1.6	< 1	< 1	< 1
Lead	1	mg/kg	3.6	2.5	4.6	1.7
Mercury	0.02	mg/kg	0.03	0.02	< 0.02	0.02
Nickel	1	mg/kg	< 1	< 1	< 1	< 1
Zinc	5	mg/kg	10	< 5	16	< 5
% Moisture	1	%	2.8	1.5	< 1	7.7

Client Sample ID			GHD_ELLAM_ST_HA02_0.5	GHD_ELLAM_ST_HA03_0.1	GHD_ELLAM_ST_HA03_0.4	GHD_ELLAM_ST_HA03_0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012133**	**L25-My0012134**	**L25-My0012135**	**L25-My0012136**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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
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	%	67	68	67	67
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_ELLAM_ST_HA02_0.5	GHD_ELLAM_ST_HA03_0.1	GHD_ELLAM_ST_HA03_0.4	GHD_ELLAM_ST_HA03_0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012133**	**L25-My0012134**	**L25-My0012135**	**L25-My0012136**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Volatile Organics						
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	67	68	67	67
Toluene-d8 (surr.)	1	%	89	136	145	120
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_ELLAM_ST_HA02_0.5	GHD_ELLAM_ST_HA03_0.1	GHD_ELLAM_ST_HA03_0.4	GHD_ELLAM_ST_HA03_0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012133**	**L25-My0012134**	**L25-My0012135**	**L25-My0012136**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
2-Fluorobiphenyl (surr.)	1	%	84	56	68	62
p-Terphenyl-d14 (surr.)	1	%	95	68	84	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	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
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	84	56	68	62
2-Methylnaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2-Picoline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Tribromophenol (surr.)	1	%	95	68	84	82
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_ELLAM_ST_HA02_0.5	GHD_ELLAM_ST_HA03_0.1	GHD_ELLAM_ST_HA03_0.4	GHD_ELLAM_ST_HA03_0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012133**	**L25-My0012134**	**L25-My0012135**	**L25-My0012136**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
4.4'-DDD	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
a-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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
Acetophenone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aniline	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
b-HCH	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
Benzyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
d-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-octyl phthalate	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenzofuran	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dieldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin ketone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_ELLAM_ST_HA02_0.5	GHD_ELLAM_ST_HA03_0.1	GHD_ELLAM_ST_HA03_0.4	GHD_ELLAM_ST_HA03_0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012133**	**L25-My0012134**	**L25-My0012135**	**L25-My0012136**
Date Sampled			**May 01, 2025**	**May 01, 2025**	**May 01, 2025**	**May 01, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
g-HCH (Lindane)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachloroethane	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
Methoxychlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosopiperidine	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
Nitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Nitrobenzene-d5 (surr.)	1	%	98	79	71	60
Pentachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	81	83	131	58
Pronamide	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
Trifluralin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Metals M8						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	1	mg/kg	4.4	2.1	3.8	3.0
Copper	1	mg/kg	1.4	1.6	2.2	1.8
Lead	1	mg/kg	2.0	2.7	3.7	2.0
Mercury	0.02	mg/kg	0.03	< 0.02	0.02	< 0.02
Nickel	1	mg/kg	1.4	< 1	< 1	< 1
Zinc	5	mg/kg	7.0	8.6	6.9	6.1
% Moisture	1	%	6.9	1.9	3.3	3.3

Client Sample ID			GHD_ELLAM_ST_HA03_0.8	GHD_MATBAY1_HA01_0.1	GHD_MATBAY1_HA01_0.2	GHD_MATBAY1_HA01_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012137**	**L25-My0012138**	**L25-My0012139**	**L25-My0012140**
Date Sampled			**May 01, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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
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	%	61	68	62	71
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_ELLAM_ST_HA03_0.8	GHD_MATBAY1_HA01_0.1	GHD_MATBAY1_HA01_0.2	GHD_MATBAY1_HA01_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012137**	**L25-My0012138**	**L25-My0012139**	**L25-My0012140**
Date Sampled			**May 01, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Volatile Organics						
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	61	68	62	71
Toluene-d8 (surr.)	1	%	101	91	136	115
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	0.7	0.7	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	1.0	1.1	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.3	1.4	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	0.6	< 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	0.7	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	1.4	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	1.2	< 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	1.4	2.0	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	4.5	3.3	< 0.5

Client Sample ID			GHD_ELLAM_ST_HA03_0.8	GHD_MATBAY1_HA01_0.1	GHD_MATBAY1_HA01_0.2	GHD_MATBAY1_HA01_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012137**	**L25-My0012138**	**L25-My0012139**	**L25-My0012140**
Date Sampled			**May 01, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
2-Fluorobiphenyl (surr.)	1	%	62	62	62	76
p-Terphenyl-d14 (surr.)	1	%	84	84	82	93
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	0.7	0.7	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	4.5	3.3	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	1.0	1.1	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.3	1.4	1.2
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	62	62	62	76
2-Methylnaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2-Picoline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Tribromophenol (surr.)	1	%	84	84	82	93
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_ELLAM_ST_HA03_0.8	GHD_MATBAY1_HA01_0.1	GHD_MATBAY1_HA01_0.2	GHD_MATBAY1_HA01_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012137**	**L25-My0012138**	**L25-My0012139**	**L25-My0012140**
Date Sampled			**May 01, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
4.4'-DDD	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
a-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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
Acetophenone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aniline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
b-HCH	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	0.7	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	1.4	< 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
Benzyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	1.2	< 0.5	< 0.5
d-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-octyl phthalate	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
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenzofuran	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dieldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin ketone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_ELLAM_ST_HA03_0.8	GHD_MATBAY1_HA01_0.1	GHD_MATBAY1_HA01_0.2	GHD_MATBAY1_HA01_0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012137**	**L25-My0012138**	**L25-My0012139**	**L25-My0012140**
Date Sampled			**May 01, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
g-HCH (Lindane)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachloroethane	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
Methoxychlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosopiperidine	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
Nitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Nitrobenzene-d5 (surr.)	1	%	78	78	60	95
Pentachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	95	95	58	69
Pronamide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	1.4	2.0	< 0.5
Trifluralin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Metals M8						
Arsenic	2	mg/kg	8.5	3.4	6.3	< 2
Cadmium	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Chromium	1	mg/kg	35	8.3	15	1.4
Copper	1	mg/kg	19	5.9	11	< 1
Lead	1	mg/kg	17	26	110	1.6
Mercury	0.02	mg/kg	0.06	0.03	0.03	< 0.02
Nickel	1	mg/kg	10	1.2	1.8	< 1
Zinc	5	mg/kg	41	20	79	7.1
% Moisture	1	%	38	7.4	6.7	2.6

Client Sample ID			GHD_MATBAY1_HA02_0.1	GHD_MATBAY1_HA02_0.3	GHD_MATBAY1_HA02_0.7	GHD_MATBAY1_HA03_0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012141**	**L25-My0012142**	**L25-My0012143**	**L25-My0012144**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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
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	%	73	77	73	85
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY1_HA02_0.1	GHD_MATBAY1_HA02_0.3	GHD_MATBAY1_HA02_0.7	GHD_MATBAY1_HA03_0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012141**	**L25-My0012142**	**L25-My0012143**	**L25-My0012144**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Volatile Organics						
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	73	77	73	85
Toluene-d8 (surr.)	1	%	84	71	143	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY1_HA02_0.1	GHD_MATBAY1_HA02_0.3	GHD_MATBAY1_HA02_0.7	GHD_MATBAY1_HA03_0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012141**	**L25-My0012142**	**L25-My0012143**	**L25-My0012144**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
2-Fluorobiphenyl (surr.)	1	%	72	75	71	78
p-Terphenyl-d14 (surr.)	1	%	87	92	85	100
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	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
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	72	75	71	78
2-Methylnaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2-Picoline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Tribromophenol (surr.)	1	%	87	92	85	100
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY1_HA02_0.1	GHD_MATBAY1_HA02_0.3	GHD_MATBAY1_HA02_0.7	GHD_MATBAY1_HA03_0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012141**	**L25-My0012142**	**L25-My0012143**	**L25-My0012144**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
4.4'-DDD	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
a-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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
Acetophenone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aniline	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
b-HCH	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
Benzyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
d-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-octyl phthalate	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
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenzofuran	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dieldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin ketone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY1_HA02_0.1	GHD_MATBAY1_HA02_0.3	GHD_MATBAY1_HA02_0.7	GHD_MATBAY1_HA03_0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012141**	**L25-My0012142**	**L25-My0012143**	**L25-My0012144**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
g-HCH (Lindane)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachloroethane	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
Methoxychlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosopiperidine	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
Nitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Nitrobenzene-d5 (surr.)	1	%	82	87	81	88
Pentachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	66	112	50	64
Pronamide	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
Trifluralin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Metals M8						
Arsenic	2	mg/kg	11	4.3	< 2	< 2
Cadmium	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	1	mg/kg	21	2.5	1.3	5.1
Copper	1	mg/kg	11	2.1	< 1	5.2
Lead	1	mg/kg	53	8.0	1.6	14
Mercury	0.02	mg/kg	0.03	< 0.02	< 0.02	0.03
Nickel	1	mg/kg	1.5	< 1	< 1	1.2
Zinc	5	mg/kg	14	< 5	< 5	20
% Moisture	1	%	8.6	4.4	2.8	8.6

Client Sample ID			GHD_MATBAY1_HA03_0.3	GHD_MATBAY1_HA03_0.6	GHD_MATBAY2_HA01_0.1	GHD_MATBAY2_HA01_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012145**	**L25-My0012146**	**L25-My0012147**	**L25-My0012148**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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
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	%	68	58	81	78
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY1_HA03_0.3	GHD_MATBAY1_HA03_0.6	GHD_MATBAY2_HA01_0.1	GHD_MATBAY2_HA01_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012145**	**L25-My0012146**	**L25-My0012147**	**L25-My0012148**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Volatile Organics						
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	68	58	81	78
Toluene-d8 (surr.)	1	%	56	83	96	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY1_HA03_0.3	GHD_MATBAY1_HA03_0.6	GHD_MATBAY2_HA01_0.1	GHD_MATBAY2_HA01_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012145**	**L25-My0012146**	**L25-My0012147**	**L25-My0012148**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
2-Fluorobiphenyl (surr.)	1	%	67	71	78	74
p-Terphenyl-d14 (surr.)	1	%	95	98	104	98
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	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
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	67	71	78	74
2-Methylnaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2-Picoline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Tribromophenol (surr.)	1	%	95	98	104	98
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY1_HA03_0.3	GHD_MATBAY1_HA03_0.6	GHD_MATBAY2_HA01_0.1	GHD_MATBAY2_HA01_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012145**	**L25-My0012146**	**L25-My0012147**	**L25-My0012148**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
4.4'-DDD	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
a-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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
Acetophenone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aniline	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
b-HCH	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
Benzyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
d-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-octyl phthalate	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
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenzofuran	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dieldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin ketone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY1_HA03_0.3	GHD_MATBAY1_HA03_0.6	GHD_MATBAY2_HA01_0.1	GHD_MATBAY2_HA01_0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012145**	**L25-My0012146**	**L25-My0012147**	**L25-My0012148**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
g-HCH (Lindane)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachloroethane	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
Methoxychlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosopiperidine	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
Nitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Nitrobenzene-d5 (surr.)	1	%	74	83	98	81
Pentachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	84	74	95	81
Pronamide	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
Trifluralin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Metals M8						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	1	mg/kg	6.6	11	1.3	1.0
Copper	1	mg/kg	2.8	1.2	1.7	1.4
Lead	1	mg/kg	7.3	7.3	3.4	2.0
Mercury	0.02	mg/kg	0.04	0.04	< 0.02	< 0.02
Nickel	1	mg/kg	1.4	1.7	< 1	< 1
Zinc	5	mg/kg	45	< 5	6.8	< 5
% Moisture	1	%	11	13	5.2	3.7

Client Sample ID			GHD_MATBAY2_HA01_0.5	GHD_MATBAY2_HA02_0.1	GHD_MATBAY2_HA02_0.3	GHD_MATBAY2_HA02_0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012149**	**L25-My0012150**	**L25-My0012151**	**L25-My0012152**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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
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	%	70	62	70	80
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY2_HA01_0.5	GHD_MATBAY2_HA02_0.1	GHD_MATBAY2_HA02_0.3	GHD_MATBAY2_HA02_0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012149**	**L25-My0012150**	**L25-My0012151**	**L25-My0012152**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Volatile Organics						
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	70	62	70	80
Toluene-d8 (surr.)	1	%	91	74	68	65
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY2_HA01_0.5	GHD_MATBAY2_HA02_0.1	GHD_MATBAY2_HA02_0.3	GHD_MATBAY2_HA02_0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012149**	**L25-My0012150**	**L25-My0012151**	**L25-My0012152**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
2-Fluorobiphenyl (surr.)	1	%	68	67	80	69
p-Terphenyl-d14 (surr.)	1	%	80	104	103	98
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	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
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	68	67	80	69
2-Methylnaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2-Picoline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Tribromophenol (surr.)	1	%	80	104	103	98
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY2_HA01_0.5	GHD_MATBAY2_HA02_0.1	GHD_MATBAY2_HA02_0.3	GHD_MATBAY2_HA02_0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012149**	**L25-My0012150**	**L25-My0012151**	**L25-My0012152**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
4.4'-DDD	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
a-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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
Acetophenone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aniline	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
b-HCH	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
Benzyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
d-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-octyl phthalate	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
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenzofuran	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dieldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin ketone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY2_HA01_0.5	GHD_MATBAY2_HA02_0.1	GHD_MATBAY2_HA02_0.3	GHD_MATBAY2_HA02_0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**L25-My0012149**	**L25-My0012150**	**L25-My0012151**	**L25-My0012152**
Date Sampled			**May 02, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Semivolatile Organics						
g-HCH (Lindane)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachloroethane	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
Methoxychlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosopiperidine	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
Nitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Nitrobenzene-d5 (surr.)	1	%	80	78	90	81
Pentachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	107	63	50	90
Pronamide	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
Trifluralin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Metals M8						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Chromium	1	mg/kg	2.2	2.4	6.2	3.3
Copper	1	mg/kg	4.1	1.5	6.3	1.9
Lead	1	mg/kg	4.3	5.9	30	7.3
Mercury	0.02	mg/kg	0.02	< 0.02	0.03	< 0.02
Nickel	1	mg/kg	< 1	< 1	1.5	< 1
Zinc	5	mg/kg	10.0	5.0	27	5.8
% Moisture	1	%	3.1	5.0	6.1	4.4

Client Sample ID			GHD_MATBAY2_HA03_0.1	GHD_MATBAY2_HA03_0.2	GHD_MATBAY2_HA03_0.5	GHD_QC10
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012153	L25-My0012154	L25-My0012155	L25-My0012160
Date Sampled			May 02, 2025	May 02, 2025	May 02, 2025	May 01, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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	52	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	52	< 50	< 50	< 50
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	%	67	58	72	78
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY2_HA03_0.1	GHD_MATBAY2_HA03_0.2	GHD_MATBAY2_HA03_0.5	GHD_QC10
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012153	L25-My0012154	L25-My0012155	L25-My0012160
Date Sampled			May 02, 2025	May 02, 2025	May 02, 2025	May 01, 2025
Test/Reference	LOR	Unit				
Volatile Organics						
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	67	58	72	78
Toluene-d8 (surr.)	1	%	99	96	128	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY2_HA03_0.1	GHD_MATBAY2_HA03_0.2	GHD_MATBAY2_HA03_0.5	GHD_QC10
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012153	L25-My0012154	L25-My0012155	L25-My0012160
Date Sampled			May 02, 2025	May 02, 2025	May 02, 2025	May 01, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
2-Fluorobiphenyl (surr.)	1	%	84	74	69	70
p-Terphenyl-d14 (surr.)	1	%	103	94	86	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	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
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	84	74	69	70
2-Methylnaphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Naphthylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2-Picoline	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Tribromophenol (surr.)	1	%	103	94	86	89
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY2_HA03_0.1	GHD_MATBAY2_HA03_0.2	GHD_MATBAY2_HA03_0.5	GHD_QC10
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012153	L25-My0012154	L25-My0012155	L25-My0012160
Date Sampled			May 02, 2025	May 02, 2025	May 02, 2025	May 01, 2025
Test/Reference	LOR	Unit				
Semivolatile Organics						
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
4.4'-DDD	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
a-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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
Acetophenone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aniline	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
b-HCH	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
Benzyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
d-HCH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Di-n-octyl phthalate	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
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenzofuran	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dieldrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Endrin ketone	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GHD_MATBAY2_HA03_0.1	GHD_MATBAY2_HA03_0.2	GHD_MATBAY2_HA03_0.5	GHD_QC10
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012153	L25-My0012154	L25-My0012155	L25-My0012160
Date Sampled			May 02, 2025	May 02, 2025	May 02, 2025	May 01, 2025
Test/Reference	LOR	Unit				
Semivolatile Organics						
g-HCH (Lindane)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Hexachloroethane	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
Methoxychlor	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
N-Nitrosopiperidine	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
Nitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Nitrobenzene-d5 (surr.)	1	%	103	85	72	93
Pentachlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	50	89	69	108
Pronamide	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
Trifluralin	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Metals M8						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	1	mg/kg	6.0	4.8	4.5	3.3
Copper	1	mg/kg	6.1	2.1	1.1	1.1
Lead	1	mg/kg	31	7.6	3.1	4.0
Mercury	0.02	mg/kg	0.04	0.03	0.02	0.02
Nickel	1	mg/kg	1.6	1.7	1.1	< 1
Zinc	5	mg/kg	26	5.9	< 5	8.7
% Moisture	1	%	5.7	3.2	2.0	1.2

Client Sample ID			GHD_QC11	GHD_QC13	GHD_APPLECROSS_HA03_0.1	GHD_APPLECROSS_HA03_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012161	L25-My0012162	L25-My0012164	L25-My0012165
Date Sampled			May 01, 2025	May 05, 2025	May 01, 2025	May 01, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	-	< 50	< 50
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	%	67	-	77	59
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5

Client Sample ID			GHD_QC11	GHD_QC13	GHD_APPLECROSS_HA03_0.1	GHD_APPLECROSS_HA03_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012161	L25-My0012162	L25-My0012164	L25-My0012165
Date Sampled			May 01, 2025	May 05, 2025	May 01, 2025	May 01, 2025
Test/Reference	LOR	Unit				
Volatile Organics						
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	67	-	77	59
Toluene-d8 (surr.)	1	%	103	-	114	58
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	1.8
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5

Client Sample ID			GHD_QC11	GHD_QC13	GHD_APPLECROSS_HA03_0.1	GHD_APPLECROSS_HA03_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012161	L25-My0012162	L25-My0012164	L25-My0012165
Date Sampled			May 01, 2025	May 05, 2025	May 01, 2025	May 01, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	-	< 0.5	1.8
2-Fluorobiphenyl (surr.)	1	%	84	-	56	68
p-Terphenyl-d14 (surr.)	1	%	95	-	68	84
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	< 100	< 100
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	-	< 0.5	1.8
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.2	1.2
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-	< 5	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	84	-	56	68
2-Methylnaphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
2-Naphthylamine	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Nitrophenol	1	mg/kg	< 1	-	< 1	< 1
2-Picoline	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5	-	< 5	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	-	< 5	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1	-	< 1	< 1
2.4.6-Tribromophenol (surr.)	1	%	95	-	68	84
2.4.6-Trichlorophenol	1	mg/kg	< 1	-	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2

Client Sample ID			GHD_QC11	GHD_QC13	GHD_APPLECROSS_HA03_0.1	GHD_APPLECROSS_HA03_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012161	L25-My0012162	L25-My0012164	L25-My0012165
Date Sampled			May 01, 2025	May 05, 2025	May 01, 2025	May 01, 2025
Test/Reference	LOR	Unit				
Semivolatile Organics						
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	< 1	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	-	< 5	< 5
4.4'-DDD	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
a-HCH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acetophenone	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aldrin	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aniline	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
b-HCH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzyl chloride	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	1.8
d-HCH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Di-n-octyl phthalate	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenzofuran	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dieldrin	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Endrin	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5

Client Sample ID			GHD_QC11	GHD_QC13	GHD_APPLECROSS_HA03_0.1	GHD_APPLECROSS_HA03_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012161	L25-My0012162	L25-My0012164	L25-My0012165
Date Sampled			May 01, 2025	May 05, 2025	May 01, 2025	May 01, 2025
Test/Reference	LOR	Unit				
Semivolatile Organics						
Endrin ketone	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
g-HCH (Lindane)	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Heptachlor	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Hexachloroethane	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Methoxychlor	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
N-Nitrosopiperidine	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Nitrobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Nitrobenzene-d5 (surr.)	1	%	98	-	79	71
Pentachlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	< 1	-	< 1	< 1
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenol	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	81	-	83	131
Pronamide	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Trifluralin	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Metals M8						
Arsenic	2	mg/kg	< 2	-	< 2	2.4
Cadmium	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Chromium	1	mg/kg	4.1	-	5.3	11
Copper	1	mg/kg	2.6	-	3.2	< 1
Lead	1	mg/kg	5.7	-	8.9	3.0
Mercury	0.02	mg/kg	0.03	-	0.02	0.03
Nickel	1	mg/kg	< 1	-	< 1	< 1
Zinc	5	mg/kg	14	-	20	6.9
% Moisture	1	%	2.6	6.3	6.5	6.2
VOCs in Soil by GCMS						
Benzene	0.1	mg/kg	-	< 0.1	-	-
Carbon tetrachloride	0.1	mg/kg	-	< 0.1	-	-
Chlorobenzene	0.1	mg/kg	-	< 0.1	-	-
DCM	10	mg/kg	-	< 10	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
Hexachlorobutadiene	0.1	mg/kg	-	< 0.1	-	-
Methyl-tert-Butyl Ether	0.1	mg/kg	-	< 0.1	-	-
Styrene	0.1	mg/kg	-	< 0.1	-	-

Client Sample ID			GHD_QC11	GHD_QC13	GHD_APPLECROSS_HA03_0.1	GHD_APPLECROSS_HA03_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			L25-My0012161	L25-My0012162	L25-My0012164	L25-My0012165
Date Sampled			May 01, 2025	May 05, 2025	May 01, 2025	May 01, 2025
Test/Reference	LOR	Unit				
VOCs in Soil by GCMS						
Perchloroethene (PCE)	0.1	mg/kg	-	< 0.1	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
Trichloroethylene(TCE)	0.1	mg/kg	-	< 0.1	-	-
Vinyl Chloride	0.2	mg/kg	-	< 0.2	-	-
Xylenes (Total)	0.2	mg/kg	-	< 0.2	-	-
1.1-Dichloroethane	0.2	mg/kg	-	< 0.2	-	-
1.2-Dichloroethane	0.1	mg/kg	-	< 0.1	-	-
1.1-Dichloroethene	0.2	mg/kg	-	< 0.2	-	-
cis-1.2-Dichloroethene	0.1	mg/kg	-	< 0.1	-	-
trans-1.2-Dichloroethene	0.2	mg/kg	-	< 0.2	-	-
1.1.1-Trichloroethane	0.2	mg/kg	-	< 0.2	-	-
1.1.1.2-Tetrachloroethane	0.1	mg/kg	-	< 0.1	-	-
1.1.2.2-Tetrachloroethane	0.1	mg/kg	-	< 0.1	-	-
1.2-Dichlorobenzene	0.1	mg/kg	-	< 0.1	-	-
1.3-Dichlorobenzene	0.1	mg/kg	-	< 0.1	-	-
1.4-Dichlorobenzene	0.1	mg/kg	-	< 0.1	-	-
1.2.3-Trichlorobenzene	0.1	mg/kg	-	< 0.1	-	-
1.2.4-Trichlorobenzene	0.1	mg/kg	-	< 0.1	-	-
1.3.5-Trichlorobenzene	0.1	mg/kg	-	< 0.1	-	-

Client Sample ID			GHD_APPLECROSS_HA03_0.5
Sample Matrix			Soil
Eurofins Sample No.			L25-My0012166
Date Sampled			May 01, 2025
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
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
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
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	72
Volatile Organics			
1.1-Dichloroethane	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

Client Sample ID			GHD_APPLECROSS_HA03_0.5
Sample Matrix			**Soil**
Eurofins Sample No.			**L25-My0012166**
Date Sampled			**May 01, 2025**
Test/Reference	LOR	Unit	
Volatile Organics			
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
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

Client Sample ID			GHD_APPLECROSS_HA03_0.5
Sample Matrix			**Soil**
Eurofins Sample No.			**L25-My0012166**
Date Sampled			**May 01, 2025**
Test/Reference	LOR	Unit	
Volatile Organics			
Xylenes - Total*	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	72
Toluene-d8 (surr.)	1	%	103
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
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	%	71
p-Terphenyl-d14 (surr.)	1	%	91
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Semivolatile Organics			
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5
Total PAH*	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
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5
1-Chloronaphthalene	0.5	mg/kg	< 0.5
1-Naphthylamine	0.5	mg/kg	< 0.5

Client Sample ID			GHD_APPLECROSS_HA03_0.5
Sample Matrix			**Soil**
Eurofins Sample No.			**L25-My0012166**
Date Sampled			**May 01, 2025**
Test/Reference	LOR	Unit	
Semivolatile Organics			
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5
1.2.3-Trichlorobenzene	0.5	mg/kg	< 0.5
1.2.3.4-Tetrachlorobenzene	0.5	mg/kg	< 0.5
1.2.3.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5
1.2.4.5-Tetrachlorobenzene	0.5	mg/kg	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5
1.3.5-Trichlorobenzene	0.5	mg/kg	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Chloronaphthalene	0.5	mg/kg	< 0.5
2-Chlorophenol	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	71
2-Methylnaphthalene	0.5	mg/kg	< 0.5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Naphthylamine	0.5	mg/kg	< 0.5
2-Nitroaniline	0.5	mg/kg	< 0.5
2-Nitrophenol	1	mg/kg	< 1
2-Picoline	0.5	mg/kg	< 0.5
2.3.4.6-Tetrachlorophenol	5	mg/kg	< 5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5
2.4.5-Trichlorophenol	1	mg/kg	< 1
2.4.6-Tribromophenol (surr.)	1	%	91
2.4.6-Trichlorophenol	1	mg/kg	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5
2.4-Dinitrotoluene	0.2	mg/kg	< 0.2
2.6-Dinitrotoluene	0.2	mg/kg	< 0.2
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.2	mg/kg	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
3-Methylcholanthrene	0.5	mg/kg	< 0.5
3.3'-Dichlorobenzidine	0.5	mg/kg	< 0.5
4-Aminobiphenyl	0.5	mg/kg	< 0.5
4-Bromophenyl phenyl ether	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
4-Chlorophenyl phenyl ether	0.5	mg/kg	< 0.5
4-Nitrophenol	5	mg/kg	< 5
4.4'-DDD	0.5	mg/kg	< 0.5
4.4'-DDE	0.5	mg/kg	< 0.5
4.4'-DDT	0.5	mg/kg	< 0.5
7.12-Dimethylbenz(a)anthracene	0.5	mg/kg	< 0.5
a-HCH	0.5	mg/kg	< 0.5
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Acetophenone	0.5	mg/kg	< 0.5
Aldrin	0.5	mg/kg	< 0.5
Aniline	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5

Client Sample ID			GHD_APPLECROSS_HA03_0.5
Sample Matrix			**Soil**
Eurofins Sample No.			**L25-My0012166**
Date Sampled			**May 01, 2025**
Test/Reference	LOR	Unit	
Semivolatile Organics			
b-HCH	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
Benzyl chloride	0.5	mg/kg	< 0.5
Bis(2-chloroethoxy)methane	0.5	mg/kg	< 0.5
Bis(2-chloroisopropyl)ether	0.5	mg/kg	< 0.5
Bis(2-ethylhexyl)phthalate	0.5	mg/kg	< 0.5
Butyl benzyl phthalate	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
d-HCH	0.5	mg/kg	< 0.5
Di-n-butyl phthalate	0.5	mg/kg	< 0.5
Di-n-octyl phthalate	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Dibenz(a.j)acridine	0.5	mg/kg	< 0.5
Dibenzofuran	0.5	mg/kg	< 0.5
Dieldrin	0.5	mg/kg	< 0.5
Diethyl phthalate	0.5	mg/kg	< 0.5
Dimethyl phthalate	0.5	mg/kg	< 0.5
Dimethylaminoazobenzene	0.5	mg/kg	< 0.5
Diphenylamine	0.5	mg/kg	< 0.5
Endosulfan I	0.5	mg/kg	< 0.5
Endosulfan II	0.5	mg/kg	< 0.5
Endosulfan sulphate	0.5	mg/kg	< 0.5
Endrin	0.5	mg/kg	< 0.5
Endrin aldehyde	0.5	mg/kg	< 0.5
Endrin ketone	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
g-HCH (Lindane)	0.5	mg/kg	< 0.5
Heptachlor	0.5	mg/kg	< 0.5
Heptachlor epoxide	0.5	mg/kg	< 0.5
Hexachlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Hexachlorocyclopentadiene	0.5	mg/kg	< 0.5
Hexachloroethane	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Methoxychlor	0.5	mg/kg	< 0.5
N-Nitrosodibutylamine	0.5	mg/kg	< 0.5
N-Nitrosodipropylamine	0.5	mg/kg	< 0.5
N-Nitrosopiperidine	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Nitrobenzene	0.5	mg/kg	< 0.5
Nitrobenzene-d5 (surr.)	1	%	80
Pentachlorobenzene	0.5	mg/kg	< 0.5
Pentachloronitrobenzene	0.5	mg/kg	< 0.5

Client Sample ID			GHD_APPLECROSS_HA03_0.5
Sample Matrix			**Soil**
Eurofins Sample No.			**L25-My0012166**
Date Sampled			**May 01, 2025**
Test/Reference	LOR	Unit	
Semivolatile Organics			
Pentachlorophenol	1	mg/kg	< 1
Phenanthrene	0.5	mg/kg	< 0.5
Phenol	0.5	mg/kg	< 0.5
Phenol-d6 (surr.)	1	%	93
Pronamide	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Trifluralin	0.5	mg/kg	< 0.5
Metals M8			
Arsenic	2	mg/kg	2.2
Cadmium	0.1	mg/kg	< 0.1
Chromium	1	mg/kg	11
Copper	1	mg/kg	< 1
Lead	1	mg/kg	3.7
Mercury	0.02	mg/kg	0.03
Nickel	1	mg/kg	2.1
Zinc	5	mg/kg	< 5
% Moisture	1	%	10

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Welshpool	May 06, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Welshpool	May 06, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Welshpool	May 06, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Welshpool	May 06, 2025	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Welshpool	May 06, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Welshpool	May 15, 2025	7 Days
- Method: ARL 133 - Purgeable Organics in Soil and Sediment by GCMS			
Semivolatile Organics	Welshpool	May 15, 2025	14 Days
- Method: LTM-ORG-2190 SVOC in Water & Soil by GC-MS			
Metals M8	Welshpool	May 06, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
VOCs in Soil by GCMS	Welshpool	May 06, 2025	7 Days
- Method: ARL133 - Purgeable Volatile Organic Compounds in Soil by GCMS			
% Moisture	Welshpool	May 06, 2025	14 Days
- Method: ARL135 Moisture in Solids			

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Project Name:
Project ID: 12658388

Order No.: 12658388
Report #: 1215966
Phone: 08 6222 8222
Fax: 08 9429 6555

Received: May 5, 2025 2:55 PM
Due: May 12, 2025
Priority: 5 Day
Contact Name: - ALL GHD lab reports

Eurofins Analytical Services Manager : Natalie Hill

Sample Detail						HOLD	Metals M8	Moisture Set	Eurofins Suite B4	Eurofins Suite SVV: SVOC/VOC	Asbestos in Soils (ASC NEPM 2013)	VOCs in Soil by GCMS
Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	GHD_APPLECROSS_HA01_0.1	May 01, 2025		Soil	L25-My0012120		X	X	X	X		
2	GHD_APPLECROSS_HA01_0.3	May 01, 2025		Soil	L25-My0012121		X	X	X	X		
3	GHD_APPLECROSS_HA01_0.6	May 01, 2025		Soil	L25-My0012122		X	X	X	X		
4	GHD_APPLECROSS_HA01_1.25	May 01, 2025		Soil	L25-My0012123		X	X	X	X		
5	GHD_APPLECROSS_HA02_0.1	May 01, 2025		Soil	L25-My0012124		X	X	X	X		
6	GHD_APPLECROSS_HA02_	May 01, 2025		Soil	L25-My0012125		X	X	X	X		

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Project Name:
Project ID: 12658388

Order No.: 12658388
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Phone: 08 6222 8222
Fax: 08 9429 6555

Received: May 5, 2025 2:55 PM
Due: May 12, 2025
Priority: 5 Day
Contact Name: - ALL GHD lab reports

Eurofins Analytical Services Manager : Natalie Hill

Sample Detail						HOLD	Metals M8	Moisture Set	Eurofins Suite B4	Eurofins Suite SVV: SVOC/VOC	Asbestos in Soils (ASC NEPM 2013)	VOCs in Soil by GCMS
Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
	0.4											
7	GHD_APPLECROSS_HA02_0.6	May 01, 2025		Soil	L25-My0012126		X	X	X	X		
8	GHD_APPLECROSS_HA02_0.8	May 01, 2025		Soil	L25-My0012127		X	X	X	X		
9	GHD_ELLAM_ST_HA01_0.0	May 01, 2025		Soil	L25-My0012128		X	X	X	X		
10	GHD_ELLAM_ST_HA01_0.2	May 01, 2025		Soil	L25-My0012129		X	X	X	X		
11	GHD_ELLAM_ST_HA01_0.4	May 01, 2025		Soil	L25-My0012130		X	X	X	X	X	
12	GHD_ELLAM_ST_HA02_0.1	May 01, 2025		Soil	L25-My0012131		X	X	X	X		
13	GHD_ELLAM_ST_HA02_0.3	May 01, 2025		Soil	L25-My0012132		X	X	X	X		
14	GHD_ELLAM_	May 01, 2025		Soil	L25-My0012133		X	X	X	X		

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Company Name: GHD Pty Ltd WA
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Order No.: 12658388
Report #: 1215966
Phone: 08 6222 8222
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Received: May 5, 2025 2:55 PM
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Priority: 5 Day
Contact Name: - ALL GHD lab reports

Eurofins Analytical Services Manager : Natalie Hill

Sample Detail						HOLD	Metals M8	Moisture Set	Eurofins Suite B4	Eurofins Suite SVV: SVOC/VOC	Asbestos in Soils (ASC NEPM 2013)	VOCs in Soil by GCMS
Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
14	GHD_ELLAM_ST_HA02_0.5	May 01, 2025		Soil	L25-My0012133							
15	GHD_ELLAM_ST_HA03_0.1	May 01, 2025		Soil	L25-My0012134		X	X	X	X		
16	GHD_ELLAM_ST_HA03_0.4	May 01, 2025		Soil	L25-My0012135		X	X	X	X		
17	GHD_ELLAM_ST_HA03_0.5	May 01, 2025		Soil	L25-My0012136		X	X	X	X		
18	GHD_ELLAM_ST_HA03_0.8	May 01, 2025		Soil	L25-My0012137		X	X	X	X		
19	GHD_MATBAY1_HA01_0.1	May 02, 2025		Soil	L25-My0012138		X	X	X	X		
20	GHD_MATBAY1_HA01_0.2	May 02, 2025		Soil	L25-My0012139		X	X	X	X		
21	GHD_MATBAY1_HA01_0.8	May 02, 2025		Soil	L25-My0012140		X	X	X	X		
22	GHD_MATBAY1_HA02_0.1	May 02, 2025		Soil	L25-My0012141		X	X	X	X		

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Company Name: GHD Pty Ltd WA
Address: 999 Hay Street Perth
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Project Name:
Project ID: 12658388

Order No.: 12658388
Report #: 1215966
Phone: 08 6222 8222
Fax: 08 9429 6555

Received: May 5, 2025 2:55 PM
Due: May 12, 2025
Priority: 5 Day
Contact Name: - ALL GHD lab reports

Eurofins Analytical Services Manager : Natalie Hill

Sample Detail						HOLD	Metals M8	Moisture Set	Eurofins Suite B4	Eurofins Suite SVV: SVOC/VOC	Asbestos in Soils (ASC NEPM 2013)	VOCs in Soil by GCMS
Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
23	GHD_MATBAY1_HA02_0.3	May 02, 2025		Soil	L25-My0012142		X	X	X	X		
24	GHD_MATBAY1_HA02_0.7	May 02, 2025		Soil	L25-My0012143		X	X	X	X		
25	GHD_MATBAY1_HA03_0.1	May 02, 2025		Soil	L25-My0012144		X	X	X	X		
26	GHD_MATBAY1_HA03_0.3	May 02, 2025		Soil	L25-My0012145		X	X	X	X		
27	GHD_MATBAY1_HA03_0.6	May 02, 2025		Soil	L25-My0012146		X	X	X	X		
28	GHD_MATBAY2_HA01_0.1	May 02, 2025		Soil	L25-My0012147		X	X	X	X		
29	GHD_MATBAY2_HA01_0.3	May 02, 2025		Soil	L25-My0012148		X	X	X	X		
30	GHD_MATBAY2_HA01_0.5	May 02, 2025		Soil	L25-My0012149		X	X	X	X		
31	GHD_MATBAY2_HA02_0.1	May 02, 2025		Soil	L25-My0012150		X	X	X	X		

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Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
32	GHD_MATBAY2_HA02_0.3	May 02, 2025		Soil	L25-My0012151		X	X	X	X		
33	GHD_MATBAY2_HA02_0.5	May 02, 2025		Soil	L25-My0012152		X	X	X	X		
34	GHD_MATBAY2_HA03_0.1	May 02, 2025		Soil	L25-My0012153		X	X	X	X		
35	GHD_MATBAY2_HA03_0.2	May 02, 2025		Soil	L25-My0012154		X	X	X	X		
36	GHD_MATBAY2_HA03_0.5	May 02, 2025		Soil	L25-My0012155		X	X	X	X		
37	GHD_QC06	May 01, 2025		Water	L25-My0012156		X		X	X		
38	GHD_QC07	May 02, 2025		Water	L25-My0012157		X		X	X		
39	GHD_QC08	May 02, 2025		Water	L25-My0012158		X		X	X		
40	GHD_QC09	May 02, 2025		Water	L25-My0012159		X		X	X		
41	GHD_QC10	May 01, 2025		Soil	L25-My0012160		X	X	X	X		
42	GHD_QC11	May 01, 2025		Soil	L25-My0012161		X	X	X	X		

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Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
43	GHD_QC13	May 05, 2025		Soil	L25-My0012162			X				X
44	GHD_QC12	May 02, 2025		Soil	L25-My0012163	X						
45	GHD_APPLECROSS_HA03_0.1	May 01, 2025		Soil	L25-My0012164		X	X	X	X		
46	GHD_APPLECROSS_HA03_0.2	May 01, 2025		Soil	L25-My0012165		X	X	X	X		
47	GHD_APPLECROSS_HA03_0.5	May 01, 2025		Soil	L25-My0012166		X	X	X	X		
Test Counts						1	45	42	45	45	1	1

Internal Quality Control Review and Glossary

General

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

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

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

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**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	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
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 moisture has been determined on a solid sample, the result is expressed on a dry weight 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 represents 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 similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
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 6.0
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 only be used as a guide 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%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as 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 are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/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	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
1-Chloronaphthalene	mg/kg	< 0.5			0.5	Pass	
1-Naphthylamine	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2.3.4-Tetrachlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2.3.5-Tetrachlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2.4.5-Tetrachlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Chloronaphthalene	mg/kg	< 0.5			0.5	Pass	
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2-Methylnaphthalene	mg/kg	< 0.5			0.5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Naphthylamine	mg/kg	< 0.5			0.5	Pass	
2-Nitroaniline	mg/kg	< 0.5			0.5	Pass	
2-Nitrophenol	mg/kg	< 1			1	Pass	
2-Picoline	mg/kg	< 0.5			0.5	Pass	
2.3.4.6-Tetrachlorophenol	mg/kg	< 5			5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			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	
2.4-Dinitrotoluene	mg/kg	< 0.2			0.2	Pass	
2.6-Dinitrotoluene	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
3-Methylcholanthrene	mg/kg	< 0.5			0.5	Pass	
3.3'-Dichlorobenzidine	mg/kg	< 0.5			0.5	Pass	
4-Aminobiphenyl	mg/kg	< 0.5			0.5	Pass	
4-Bromophenyl phenyl ether	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
4-Chlorophenyl phenyl ether	mg/kg	< 0.5			0.5	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
4.4'-DDD	mg/kg	< 0.5			0.5	Pass	
4.4'-DDE	mg/kg	< 0.5			0.5	Pass	
4.4'-DDT	mg/kg	< 0.5			0.5	Pass	
7.12-Dimethylbenz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
a-HCH	mg/kg	< 0.5			0.5	Pass	
Acetophenone	mg/kg	< 0.5			0.5	Pass	
Aldrin	mg/kg	< 0.5			0.5	Pass	
Aniline	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
b-HCH	mg/kg	< 0.5			0.5	Pass	
Benzyl chloride	mg/kg	< 0.5			0.5	Pass	
Bis(2-chloroethoxy)methane	mg/kg	< 0.5			0.5	Pass	
Bis(2-chloroisopropyl)ether	mg/kg	< 0.5			0.5	Pass	
Bis(2-ethylhexyl)phthalate	mg/kg	< 0.5			0.5	Pass	
Butyl benzyl phthalate	mg/kg	< 0.5			0.5	Pass	
d-HCH	mg/kg	< 0.5			0.5	Pass	
Di-n-butyl phthalate	mg/kg	< 0.5			0.5	Pass	
Di-n-octyl phthalate	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.j)acridine	mg/kg	< 0.5			0.5	Pass	
Dibenzofuran	mg/kg	< 0.5			0.5	Pass	
Dieldrin	mg/kg	< 0.5			0.5	Pass	
Diethyl phthalate	mg/kg	< 0.5			0.5	Pass	
Dimethyl phthalate	mg/kg	< 0.5			0.5	Pass	
Dimethylaminoazobenzene	mg/kg	< 0.5			0.5	Pass	
Diphenylamine	mg/kg	< 0.5			0.5	Pass	
Endosulfan I	mg/kg	< 0.5			0.5	Pass	
Endosulfan II	mg/kg	< 0.5			0.5	Pass	
Endosulfan sulphate	mg/kg	< 0.5			0.5	Pass	
Endrin	mg/kg	< 0.5			0.5	Pass	
Endrin aldehyde	mg/kg	< 0.5			0.5	Pass	
Endrin ketone	mg/kg	< 0.5			0.5	Pass	
g-HCH (Lindane)	mg/kg	< 0.5			0.5	Pass	
Heptachlor	mg/kg	< 0.5			0.5	Pass	
Heptachlor epoxide	mg/kg	< 0.5			0.5	Pass	
Hexachlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Hexachlorocyclopentadiene	mg/kg	< 0.5			0.5	Pass	
Hexachloroethane	mg/kg	< 0.5			0.5	Pass	
Methoxychlor	mg/kg	< 0.5			0.5	Pass	
N-Nitrosodibutylamine	mg/kg	< 0.5			0.5	Pass	
N-Nitrosodipropylamine	mg/kg	< 0.5			0.5	Pass	
N-Nitrosopiperidine	mg/kg	< 0.5			0.5	Pass	
Nitrobenzene	mg/kg	< 0.5			0.5	Pass	
Pentachlorobenzene	mg/kg	< 0.5			0.5	Pass	
Pentachloronitrobenzene	mg/kg	< 0.5			0.5	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Pronamide	mg/kg	< 0.5			0.5	Pass	
Trifluralin	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	mg/kg	< 1			1	Pass	
Copper	mg/kg	< 1			1	Pass	
Lead	mg/kg	< 1			1	Pass	
Mercury	mg/kg	< 0.02			0.02	Pass	
Nickel	mg/kg	< 1			1	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.1			0.1	Pass	
Chromium	mg/kg	< 1			1	Pass	
Copper	mg/kg	< 1			1	Pass	
Lead	mg/kg	< 1			1	Pass	
Mercury	mg/kg	< 0.02			0.02	Pass	
Nickel	mg/kg	< 1			1	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	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							
Volatile Organics							
1.1-Dichloroethane	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	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	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
1-Chloronaphthalene	mg/kg	< 0.5			0.5	Pass	
1-Naphthylamine	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2.3.4-Tetrachlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2.3.5-Tetrachlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2.4.5-Tetrachlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Chloronaphthalene	mg/kg	< 0.5			0.5	Pass	
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2-Methylnaphthalene	mg/kg	< 0.5			0.5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Naphthylamine	mg/kg	< 0.5			0.5	Pass	
2-Nitroaniline	mg/kg	< 0.5			0.5	Pass	
2-Nitrophenol	mg/kg	< 1			1	Pass	
2-Picoline	mg/kg	< 0.5			0.5	Pass	
2.3.4.6-Tetrachlorophenol	mg/kg	< 5			5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			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	
2.4-Dinitrotoluene	mg/kg	< 0.2			0.2	Pass	
2.6-Dinitrotoluene	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
3-Methylcholanthrene	mg/kg	< 0.5			0.5	Pass	
3.3'-Dichlorobenzidine	mg/kg	< 0.5			0.5	Pass	
4-Aminobiphenyl	mg/kg	< 0.5			0.5	Pass	
4-Bromophenyl phenyl ether	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
4-Chlorophenyl phenyl ether	mg/kg	< 0.5			0.5	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDD	mg/kg	< 0.5			0.5	Pass	
4.4'-DDE	mg/kg	< 0.5			0.5	Pass	
4.4'-DDT	mg/kg	< 0.5			0.5	Pass	
7.12-Dimethylbenz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
a-HCH	mg/kg	< 0.5			0.5	Pass	
Acetophenone	mg/kg	< 0.5			0.5	Pass	
Aldrin	mg/kg	< 0.5			0.5	Pass	
Aniline	mg/kg	< 0.5			0.5	Pass	
b-HCH	mg/kg	< 0.5			0.5	Pass	
Benzyl chloride	mg/kg	< 0.5			0.5	Pass	
Bis(2-chloroethoxy)methane	mg/kg	< 0.5			0.5	Pass	
Bis(2-chloroisopropyl)ether	mg/kg	< 0.5			0.5	Pass	
Bis(2-ethylhexyl)phthalate	mg/kg	< 0.5			0.5	Pass	
Butyl benzyl phthalate	mg/kg	< 0.5			0.5	Pass	
d-HCH	mg/kg	< 0.5			0.5	Pass	
Di-n-butyl phthalate	mg/kg	< 0.5			0.5	Pass	
Di-n-octyl phthalate	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.j)acridine	mg/kg	< 0.5			0.5	Pass	
Dibenzofuran	mg/kg	< 0.5			0.5	Pass	
Dieldrin	mg/kg	< 0.5			0.5	Pass	
Diethyl phthalate	mg/kg	< 0.5			0.5	Pass	
Dimethyl phthalate	mg/kg	< 0.5			0.5	Pass	
Dimethylaminoazobenzene	mg/kg	< 0.5			0.5	Pass	
Diphenylamine	mg/kg	< 0.5			0.5	Pass	
Endosulfan I	mg/kg	< 0.5			0.5	Pass	
Endosulfan II	mg/kg	< 0.5			0.5	Pass	
Endosulfan sulphate	mg/kg	< 0.5			0.5	Pass	
Endrin	mg/kg	< 0.5			0.5	Pass	
Endrin aldehyde	mg/kg	< 0.5			0.5	Pass	
Endrin ketone	mg/kg	< 0.5			0.5	Pass	
g-HCH (Lindane)	mg/kg	< 0.5			0.5	Pass	
Heptachlor	mg/kg	< 0.5			0.5	Pass	
Heptachlor epoxide	mg/kg	< 0.5			0.5	Pass	
Hexachlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Hexachlorocyclopentadiene	mg/kg	< 0.5			0.5	Pass	
Hexachloroethane	mg/kg	< 0.5			0.5	Pass	
Methoxychlor	mg/kg	< 0.5			0.5	Pass	
N-Nitrosodibutylamine	mg/kg	< 0.5			0.5	Pass	
N-Nitrosodipropylamine	mg/kg	< 0.5			0.5	Pass	
N-Nitrosopiperidine	mg/kg	< 0.5			0.5	Pass	
Nitrobenzene	mg/kg	< 0.5			0.5	Pass	
Pentachlorobenzene	mg/kg	< 0.5			0.5	Pass	
Pentachloronitrobenzene	mg/kg	< 0.5			0.5	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Pronamide	mg/kg	< 0.5			0.5	Pass	
Trifluralin	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
Volatile Organics							
1.1-Dichloroethane	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	
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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
VOCs in Soil by GCMS							
Benzene	mg/kg	< 0.1			0.1	Pass	
Carbon tetrachloride	mg/kg	< 0.1			0.1	Pass	
Chlorobenzene	mg/kg	< 0.1			0.1	Pass	
DCM	mg/kg	< 10			10	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Hexachlorobutadiene	mg/kg	< 0.1			0.1	Pass	
Methyl-tert-Butyl Ether	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.1			0.1	Pass	
Perchloroethene (PCE)	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Trichloroethylene(TCE)	mg/kg	< 0.1			0.1	Pass	
Vinyl Chloride	mg/kg	< 0.2			0.2	Pass	
Xylenes (Total)	mg/kg	< 0.2			0.2	Pass	
1.1-Dichloroethane	mg/kg	< 0.2			0.2	Pass	
1.2-Dichloroethane	mg/kg	< 0.1			0.1	Pass	
1.1-Dichloroethene	mg/kg	< 0.2			0.2	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.2			0.2	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.2			0.2	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.1			0.1	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.1			0.1	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.2.3-Trichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.3.5-Trichlorobenzene	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	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							
Volatile Organics							
1.1-Dichloroethane	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.1			0.1	Pass	
Chromium	mg/kg	< 1			1	Pass	
Copper	mg/kg	< 1			1	Pass	
Lead	mg/kg	< 1			1	Pass	
Mercury	mg/kg	< 0.02			0.02	Pass	
Nickel	mg/kg	< 1			1	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
VOCs in Soil by GCMS							
Benzene	mg/kg	< 0.1			0.1	Pass	
Carbon tetrachloride	mg/kg	< 0.1			0.1	Pass	
Chlorobenzene	mg/kg	< 0.1			0.1	Pass	
DCM	mg/kg	< 10			10	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Hexachlorobutadiene	mg/kg	< 0.1			0.1	Pass	
Methyl-tert-Butyl Ether	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.1			0.1	Pass	
Perchloroethene (PCE)	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Trichloroethylene(TCE)	mg/kg	< 0.1			0.1	Pass	
Vinyl Chloride	mg/kg	< 0.2			0.2	Pass	
Xylenes (Total)	mg/kg	< 0.2			0.2	Pass	
1.1-Dichloroethane	mg/kg	< 0.2			0.2	Pass	
1.2-Dichloroethane	mg/kg	< 0.1			0.1	Pass	
1.1-Dichloroethene	mg/kg	< 0.2			0.2	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.2			0.2	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.2			0.2	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.1			0.1	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.1			0.1	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.2.3-Trichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.3.5-Trichlorobenzene	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.1			0.1	Pass	
Chromium	mg/kg	< 1			1	Pass	
Copper	mg/kg	< 1			1	Pass	
Lead	mg/kg	< 1			1	Pass	
Mercury	mg/kg	< 0.02			0.02	Pass	
Nickel	mg/kg	< 1			1	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
VOCs in Soil by GCMS							
Benzene	mg/kg	< 0.1			0.1	Pass	
Carbon tetrachloride	mg/kg	< 0.1			0.1	Pass	
Chlorobenzene	mg/kg	< 0.1			0.1	Pass	
DCM	mg/kg	< 10			10	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Hexachlorobutadiene	mg/kg	< 0.1			0.1	Pass	
Methyl-tert-Butyl Ether	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.1			0.1	Pass	
Perchloroethene (PCE)	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Trichloroethylene(TCE)	mg/kg	< 0.1			0.1	Pass	
Vinyl Chloride	mg/kg	< 0.2			0.2	Pass	
Xylenes (Total)	mg/kg	< 0.2			0.2	Pass	
1.1-Dichloroethane	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.2-Dichloroethane	mg/kg	< 0.1			0.1	Pass	
1.1-Dichloroethene	mg/kg	< 0.2			0.2	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.2			0.2	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.2			0.2	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.1			0.1	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.1			0.1	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.2.3-Trichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.1			0.1	Pass	
1.3.5-Trichlorobenzene	mg/kg	< 0.1			0.1	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	107			70-130	Pass	
TRH C10-C14	%	101			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	99			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	110			70-130	Pass	
m&p-Xylenes	%	110			70-130	Pass	
o-Xylene	%	100			70-130	Pass	
Xylenes - Total*	%	106			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	98			70-130	Pass	
TRH C6-C10	%	102			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	112			70-130	Pass	
Acenaphthylene	%	111			70-130	Pass	
Anthracene	%	107			70-130	Pass	
Benz(a)anthracene	%	107			70-130	Pass	
Benzo(a)pyrene	%	119			70-130	Pass	
Benzo(b&j)fluoranthene	%	110			70-130	Pass	
Benzo(g.h.i)perylene	%	89			70-130	Pass	
Benzo(k)fluoranthene	%	116			70-130	Pass	
Chrysene	%	109			70-130	Pass	
Dibenz(a.h)anthracene	%	119			70-130	Pass	
Fluoranthene	%	122			70-130	Pass	
Fluorene	%	117			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	114			70-130	Pass	
Naphthalene	%	112			70-130	Pass	
Phenanthrene	%	106			70-130	Pass	
Pyrene	%	107			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	101			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	%	111			25-140	Pass	
2.4-Dimethylphenol	%	91			25-140	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4.6-Trichlorophenol	%	88			25-140	Pass	
4-Nitrophenol	%	83			25-140	Pass	
Pentachlorophenol	%	117			25-140	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	103			70-130	Pass	
Acenaphthylene	%	102			70-130	Pass	
Benz(a)anthracene	%	114			70-130	Pass	
Benzo(a)pyrene	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	%	92			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Fluoranthene	%	88			70-130	Pass	
Fluorene	%	88			70-130	Pass	
Naphthalene	%	90			70-130	Pass	
Phenanthrene	%	80			70-130	Pass	
Pyrene	%	100			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Chlorophenol	%	98			25-140	Pass	
2-Methylphenol (o-Cresol)	%	106			25-140	Pass	
2-Nitrophenol	%	127			25-140	Pass	
2.4-Dichlorophenol	%	100			25-140	Pass	
2.4.5-Trichlorophenol	%	84			25-140	Pass	
2.6-Dichlorophenol	%	77			25-140	Pass	
2.4-Dinitrotoluene	%	126			70-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	103			25-140	Pass	
4-Chloro-3-methylphenol	%	99			25-140	Pass	
Phenol	%	94			25-140	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	%	90			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	90			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	96			80-120	Pass	
Cadmium	%	108			80-120	Pass	
Chromium	%	106			80-120	Pass	
Copper	%	106			80-120	Pass	
Lead	%	100			80-120	Pass	
Mercury	%	105			80-120	Pass	
Nickel	%	107			80-120	Pass	
Zinc	%	108			80-120	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	98			80-120	Pass	
Cadmium	%	105			80-120	Pass	
Chromium	%	96			80-120	Pass	
Copper	%	94			80-120	Pass	
Lead	%	94			80-120	Pass	
Mercury	%	105			80-120	Pass	
Nickel	%	94			80-120	Pass	
Zinc	%	98			80-120	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
BTEX							
Benzene	%	95			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	107			70-130	Pass	
o-Xylene	%	102			70-130	Pass	
Xylenes - Total*	%	106			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	99			70-130	Pass	
1.2-Dichlorobenzene	%	95			70-130	Pass	
1.2-Dichloroethane	%	97			70-130	Pass	
Trichloroethene	%	101			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	106			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	91			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	77			70-130	Pass	
Toluene	%	80			70-130	Pass	
Ethylbenzene	%	94			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
o-Xylene	%	88			70-130	Pass	
Xylenes - Total*	%	93			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	78			70-130	Pass	
TRH C6-C10	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	%	115			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	123			70-130	Pass	
Acenaphthylene	%	122			70-130	Pass	
Anthracene	%	78			70-130	Pass	
Benz(a)anthracene	%	107			70-130	Pass	
Benzo(a)pyrene	%	119			70-130	Pass	
Benzo(b&j)fluoranthene	%	92			70-130	Pass	
Benzo(g.h.i)perylene	%	89			70-130	Pass	
Benzo(k)fluoranthene	%	116			70-130	Pass	
Chrysene	%	120			70-130	Pass	
Dibenz(a.h)anthracene	%	119			70-130	Pass	
Fluoranthene	%	105			70-130	Pass	
Fluorene	%	105			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	114			70-130	Pass	
Naphthalene	%	108			70-130	Pass	
Phenanthrene	%	96			70-130	Pass	
Pyrene	%	120			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	111			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Chlorophenol	%	117			25-140	Pass	
2-Methylphenol (o-Cresol)	%	128			25-140	Pass	
2.4-Dichlorophenol	%	120			25-140	Pass	
2.6-Dichlorophenol	%	92			25-140	Pass	
2.4-Dinitrotoluene	%	126			70-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	123			25-140	Pass	
4-Chloro-3-methylphenol	%	99			25-140	Pass	
Phenol	%	113			25-140	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	95			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	107			70-130	Pass	
o-Xylene	%	102			70-130	Pass	
Xylenes - Total*	%	106			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	99			70-130	Pass	
1.2-Dichlorobenzene	%	95			70-130	Pass	
1.2-Dichloroethane	%	97			70-130	Pass	
Trichloroethene	%	101			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	106			70-130	Pass	
LCS - % Recovery							
VOCs in Soil by GCMS							
Benzene	%	95			60-120	Pass	
Ethylbenzene	%	95			60-120	Pass	
Toluene	%	98			60-120	Pass	
Trichloroethylene(TCE)	%	101			60-120	Pass	
Xylenes (Total)	%	106			60-120	Pass	
1.2-Dichloroethane	%	97			60-120	Pass	
1.1-Dichloroethene	%	99			60-120	Pass	
1.2-Dichlorobenzene	%	95			60-120	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	99			70-130	Pass	
Toluene	%	93			70-130	Pass	
Ethylbenzene	%	101			70-130	Pass	
m&p-Xylenes	%	103			70-130	Pass	
o-Xylene	%	97			70-130	Pass	
Xylenes - Total*	%	101			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	97			70-130	Pass	
1.2-Dichlorobenzene	%	98			70-130	Pass	
1.2-Dichloroethane	%	97			70-130	Pass	
Trichloroethene	%	100			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	100			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	95			80-120	Pass	
Cadmium	%	104			80-120	Pass	
Chromium	%	105			80-120	Pass	
Copper	%	105			80-120	Pass	
Lead	%	102			80-120	Pass	
Mercury	%	111			80-120	Pass	
Nickel	%	105			80-120	Pass	
Zinc	%	107			80-120	Pass	
LCS - % Recovery							
VOCs in Soil by GCMS							
Benzene	%	99			60-120	Pass	
Ethylbenzene	%	101			60-120	Pass	
Toluene	%	93			60-120	Pass	
Trichloroethylene(TCE)	%	100			60-120	Pass	
Xylenes (Total)	%	101			60-120	Pass	
1.2-Dichloroethane	%	97			60-120	Pass	
1.1-Dichloroethene	%	97			60-120	Pass	
1.2-Dichlorobenzene	%	98			60-120	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	97			80-120	Pass	
Cadmium	%	101			80-120	Pass	
Chromium	%	98			80-120	Pass	
Copper	%	97			80-120	Pass	
Lead	%	95			80-120	Pass	
Mercury	%	104			80-120	Pass	
Nickel	%	97			80-120	Pass	
Zinc	%	102			80-120	Pass	
LCS - % Recovery							
VOCs in Soil by GCMS							
Benzene	%	102			60-120	Pass	
Ethylbenzene	%	101			60-120	Pass	
Toluene	%	100			60-120	Pass	
Trichloroethylene(TCE)	%	94			60-120	Pass	
Xylenes (Total)	%	102			60-120	Pass	
1.2-Dichloroethane	%	96			60-120	Pass	
1.1-Dichloroethene	%	108			60-120	Pass	
1.2-Dichlorobenzene	%	96			60-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Semivolatile Organics				Result 1					
2-Methyl-4.6-dinitrophenol	L25-Ap0070013	NCP	%	106			30-130	Pass	
2.4-Dimethylphenol	L25-Ap0070013	NCP	%	97			30-130	Pass	
2.4.6-Trichlorophenol	L25-Ap0070013	NCP	%	92			30-130	Pass	
2.6-Dichlorophenol	L25-Ap0070013	NCP	%	94			30-130	Pass	
4-Nitrophenol	L25-Ap0070013	NCP	%	79			30-130	Pass	
Pentachlorophenol	L25-Ap0070013	NCP	%	93			30-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	L25-My0012121	CP	%	107			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	L25-My0012121	CP	%	94			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	L25-My0012121	CP	%	99			70-130	Pass	
Toluene	L25-My0012121	CP	%	97			70-130	Pass	
Ethylbenzene	L25-My0012121	CP	%	112			70-130	Pass	
m&p-Xylenes	L25-My0012121	CP	%	112			70-130	Pass	
o-Xylene	L25-My0012121	CP	%	102			70-130	Pass	
Xylenes - Total*	L25-My0012121	CP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	L25-My0012121	CP	%	95			70-130	Pass	
TRH C6-C10	L25-My0012121	CP	%	104			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	L25-My0012121	CP	%	111			70-130	Pass	
Acenaphthylene	L25-My0012121	CP	%	105			70-130	Pass	
Anthracene	L25-My0012121	CP	%	107			70-130	Pass	
Benz(a)anthracene	L25-My0012121	CP	%	107			70-130	Pass	
Benzo(a)pyrene	L25-My0012121	CP	%	91			70-130	Pass	
Benzo(b&j)fluoranthene	L25-My0012121	CP	%	93			70-130	Pass	
Benzo(g.h.i)perylene	L25-My0012121	CP	%	97			70-130	Pass	
Benzo(k)fluoranthene	L25-My0012121	CP	%	91			70-130	Pass	
Chrysene	L25-My0012121	CP	%	121			70-130	Pass	
Dibenz(a.h)anthracene	L25-My0012121	CP	%	95			70-130	Pass	
Fluoranthene	L25-My0012121	CP	%	98			70-130	Pass	
Fluorene	L25-My0012121	CP	%	93			70-130	Pass	
Indeno(1.2.3-cd)pyrene	L25-My0012121	CP	%	102			70-130	Pass	
Naphthalene	L25-My0012121	CP	%	97			70-130	Pass	
Phenanthrene	L25-My0012121	CP	%	125			70-130	Pass	
Pyrene	L25-My0012121	CP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	L25-My0012121	CP	%	90			70-130	Pass	
Spike - % Recovery									
Semivolatile Organics				Result 1					
2-Chlorophenol	L25-My0012121	CP	%	98			30-130	Pass	
2-Methylphenol (o-Cresol)	L25-My0012121	CP	%	105			30-130	Pass	
2-Nitrophenol	L25-My0012121	CP	%	99			30-130	Pass	
2.4-Dichlorophenol	L25-My0012121	CP	%	105			30-130	Pass	
2.4.5-Trichlorophenol	L25-My0012121	CP	%	88			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	L25-My0012121	CP	%	92			30-130	Pass	
4-Chloro-3-methylphenol	L25-My0012121	CP	%	82			30-130	Pass	
Phenol	L25-My0012121	CP	%	91			30-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	L25-My0012121	CP	%	92			75-125	Pass	
Cadmium	L25-My0012121	CP	%	110			75-125	Pass	
Chromium	L25-My0012121	CP	%	106			75-125	Pass	
Copper	L25-My0012121	CP	%	109			75-125	Pass	
Mercury	L25-My0012121	CP	%	110			75-125	Pass	
Nickel	L25-My0012121	CP	%	109			75-125	Pass	
Zinc	L25-My0012121	CP	%	88			75-125	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
BTEX				Result 1					
Benzene	L25-My0012123	CP	%	93			70-130	Pass	
Toluene	L25-My0012123	CP	%	91			70-130	Pass	
Ethylbenzene	L25-My0012123	CP	%	91			70-130	Pass	
m&p-Xylenes	L25-My0012123	CP	%	102			70-130	Pass	
o-Xylene	L25-My0012123	CP	%	95			70-130	Pass	
Xylenes - Total*	L25-My0012123	CP	%	100			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	L25-My0012123	CP	%	91			70-130	Pass	
1.2-Dichlorobenzene	L25-My0012123	CP	%	91			70-130	Pass	
1.2-Dichloroethane	L25-My0012123	CP	%	98			70-130	Pass	
Trichloroethene	L25-My0012123	CP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	L25-My0012123	CP	%	96			70-130	Pass	
Spike - % Recovery									
VOCs in Soil by GCMS				Result 1					
Benzene	L25-My0012123	CP	%	93			60-120	Pass	
Ethylbenzene	L25-My0012123	CP	%	91			60-120	Pass	
Toluene	L25-My0012123	CP	%	91			60-120	Pass	
Trichloroethylene(TCE)	L25-My0012123	CP	%	95			60-120	Pass	
Xylenes (Total)	L25-My0012123	CP	%	100			60-120	Pass	
1.2-Dichloroethane	L25-My0012123	CP	%	98			60-120	Pass	
1.1-Dichloroethene	L25-My0012123	CP	%	91			60-120	Pass	
1.2-Dichlorobenzene	L25-My0012123	CP	%	91			60-120	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	L25-My0012126	CP	%	99			70-130	Pass	
Toluene	L25-My0012126	CP	%	90			70-130	Pass	
Ethylbenzene	L25-My0012126	CP	%	101			70-130	Pass	
m&p-Xylenes	L25-My0012126	CP	%	103			70-130	Pass	
o-Xylene	L25-My0012126	CP	%	97			70-130	Pass	
Xylenes - Total*	L25-My0012126	CP	%	101			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	L25-My0012126	CP	%	99			70-130	Pass	
1.2-Dichlorobenzene	L25-My0012126	CP	%	103			70-130	Pass	
1.2-Dichloroethane	L25-My0012126	CP	%	103			70-130	Pass	
Trichloroethene	L25-My0012126	CP	%	100			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	L25-My0012126	CP	%	97			70-130	Pass	
Spike - % Recovery									
VOCs in Soil by GCMS				Result 1					
Benzene	L25-My0012126	CP	%	99			60-120	Pass	
Ethylbenzene	L25-My0012126	CP	%	101			60-120	Pass	
Toluene	L25-My0012126	CP	%	90			60-120	Pass	
Trichloroethylene(TCE)	L25-My0012126	CP	%	100			60-120	Pass	
Xylenes (Total)	L25-My0012126	CP	%	101			60-120	Pass	
1.2-Dichloroethane	L25-My0012126	CP	%	103			60-120	Pass	
1.1-Dichloroethene	L25-My0012126	CP	%	99			60-120	Pass	
1.2-Dichlorobenzene	L25-My0012126	CP	%	103			60-120	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Metals M8				Result 1					
Arsenic	L25-My0012130	CP	%	87			75-125	Pass	
Cadmium	L25-My0012130	CP	%	102			75-125	Pass	
Chromium	L25-My0012130	CP	%	107			75-125	Pass	
Copper	L25-My0012130	CP	%	103			75-125	Pass	
Lead	L25-My0012130	CP	%	101			75-125	Pass	
Mercury	L25-My0012130	CP	%	102			75-125	Pass	
Nickel	L25-My0012130	CP	%	103			75-125	Pass	
Zinc	L25-My0012130	CP	%	106			75-125	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	L25-My0012131	CP	%	124			75-125	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	L25-My0012140	CP	%	115			75-125	Pass	
Cadmium	L25-My0012140	CP	%	114			75-125	Pass	
Chromium	L25-My0012140	CP	%	122			75-125	Pass	
Copper	L25-My0012140	CP	%	121			75-125	Pass	
Lead	L25-My0012140	CP	%	120			75-125	Pass	
Nickel	L25-My0012140	CP	%	122			75-125	Pass	
Zinc	L25-My0012140	CP	%	123			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	L25-My0012141	CP	%	107			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthylene	L25-My0012141	CP	%	123			70-130	Pass	
Benz(a)anthracene	L25-My0012141	CP	%	80			70-130	Pass	
Benzo(a)pyrene	L25-My0012141	CP	%	103			70-130	Pass	
Benzo(b&j)fluoranthene	L25-My0012141	CP	%	98			70-130	Pass	
Benzo(g.h.i)perylene	L25-My0012141	CP	%	97			70-130	Pass	
Benzo(k)fluoranthene	L25-My0012141	CP	%	91			70-130	Pass	
Chrysene	L25-My0012141	CP	%	113			70-130	Pass	
Dibenz(a.h)anthracene	L25-My0012141	CP	%	95			70-130	Pass	
Fluoranthene	L25-My0012141	CP	%	111			70-130	Pass	
Fluorene	L25-My0012141	CP	%	109			70-130	Pass	
Indeno(1.2.3-cd)pyrene	L25-My0012141	CP	%	102			70-130	Pass	
Naphthalene	L25-My0012141	CP	%	112			70-130	Pass	
Phenanthrene	L25-My0012141	CP	%	100			70-130	Pass	
Pyrene	L25-My0012141	CP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	L25-My0012141	CP	%	103			70-130	Pass	
Spike - % Recovery									
Semivolatile Organics				Result 1					
2-Chlorophenol	L25-My0012141	CP	%	110			30-130	Pass	
2.4-Dichlorophenol	L25-My0012141	CP	%	122			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	L25-My0012141	CP	%	115			30-130	Pass	
4-Chloro-3-methylphenol	L25-My0012141	CP	%	85			30-130	Pass	
Phenol	L25-My0012141	CP	%	110			30-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	L25-My0012141	CP	%	92			75-125	Pass	
Cadmium	L25-My0012141	CP	%	107			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	L25-My0012141	CP	%	86			75-125	Pass	
Copper	L25-My0012141	CP	%	92			75-125	Pass	
Lead	L25-My0012141	CP	%	91			75-125	Pass	
Mercury	L25-My0012141	CP	%	108			75-125	Pass	
Nickel	L25-My0012141	CP	%	101			75-125	Pass	
Zinc	L25-My0012141	CP	%	100			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	L25-My0012151	CP	%	103			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Toluene	L25-My0012151	CP	%	96			70-130	Pass	
Ethylbenzene	L25-My0012151	CP	%	114			70-130	Pass	
m&p-Xylenes	L25-My0012151	CP	%	112			70-130	Pass	
o-Xylene	L25-My0012151	CP	%	103			70-130	Pass	
Xylenes - Total*	L25-My0012151	CP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	L25-My0012151	CP	%	82			70-130	Pass	
TRH C6-C10	L25-My0012151	CP	%	99			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	L25-My0012151	CP	%	119			75-125	Pass	
Chromium	L25-My0012151	CP	%	118			75-125	Pass	
Spike - % Recovery									
VOCs in Soil by GCMS				Result 1					
Benzene	L25-My0027466	NCP	%	103			60-120	Pass	
Ethylbenzene	L25-My0027466	NCP	%	97			60-120	Pass	
Toluene	L25-My0027466	NCP	%	93			60-120	Pass	
Trichloroethylene(TCE)	L25-My0027466	NCP	%	94			60-120	Pass	
Xylenes (Total)	L25-My0027466	NCP	%	100			60-120	Pass	
1.2-Dichloroethane	L25-My0027466	NCP	%	101			60-120	Pass	
1.1-Dichloroethene	L25-My0027466	NCP	%	91			60-120	Pass	
1.2-Dichlorobenzene	L25-My0027466	NCP	%	94			60-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	L25-My0012120	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	L25-My0012120	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	L25-My0012120	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Indeno(1.2.3-cd)pyrene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	L25-My0012120	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	L25-My0012120	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	L25-My0012120	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	L25-My0012120	CP	mg/kg	< 5	< 5	<1	30%	Pass	
1-Chloronaphthalene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1-Naphthylamine	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trichlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Chloronaphthalene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Chlorophenol	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Methylnaphthalene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	L25-My0012120	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Naphthylamine	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Nitroaniline	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Nitrophenol	L25-My0012120	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2-Picoline	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.3.4.6-Tetrachlorophenol	L25-My0012120	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2.4-Dichlorophenol	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dimethylphenol	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	L25-My0012120	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2.4.5-Trichlorophenol	L25-My0012120	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	L25-My0012120	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	L25-Ap0070012	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.6-Dinitrotoluene	L25-My0012120	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	L25-My0012120	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
3-Methylcholanthrene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
3.3'-Dichlorobenzidine	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Aminobiphenyl	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Bromophenyl phenyl ether	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	L25-My0012120	CP	mg/kg	< 1	< 1	<1	30%	Pass	
4-Chlorophenyl phenyl ether	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Nitrophenol	L25-My0012120	CP	mg/kg	< 5	< 5	<1	30%	Pass	
4.4'-DDD	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDE	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDT	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
7.12-Dimethylbenz(a)anthracene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
a-HCH	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acetophenone	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aldrin	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
Aniline	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
b-HCH	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzyl chloride	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-chloroethoxy)methane	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-chloroisopropyl)ether	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-ethylhexyl)phthalate	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Butyl benzyl phthalate	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
d-HCH	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Di-n-butyl phthalate	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Di-n-octyl phthalate	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.j)acridine	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenzofuran	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dieldrin	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diethyl phthalate	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethyl phthalate	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethylaminoazobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diphenylamine	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan I	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan II	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan sulphate	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin aldehyde	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin ketone	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
g-HCH (Lindane)	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Heptachlor	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorocyclopentadiene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachloroethane	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methoxychlor	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosodibutylamine	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosodipropylamine	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosopiperidine	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Nitrobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachlorobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachloronitrobenzene	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachlorophenol	L25-My0012120	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Phenol	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pronamide	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trifluralin	L25-My0012120	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	L25-My0012120	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	L25-My0012120	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Chromium	L25-My0012120	CP	mg/kg	4.3	4.3	1.0	30%	Pass	
Copper	L25-My0012120	CP	mg/kg	5.1	5.0	3.0	30%	Pass	
Lead	L25-My0012120	CP	mg/kg	39	38	3.0	30%	Pass	
Mercury	L25-My0012120	CP	mg/kg	0.02	< 0.02	16	30%	Pass	
Nickel	L25-My0012120	CP	mg/kg	1.2	1.1	4.0	30%	Pass	
Zinc	L25-My0012120	CP	mg/kg	26	25	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	L25-My0012128	CP	%	2.8	2.2	24	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	L25-My0012130	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	L25-My0012130	CP	mg/kg	210	200	5.0	30%	Pass	
TRH C29-C36	L25-My0012130	CP	mg/kg	250	120	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	L25-My0012130	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	L25-My0012130	CP	mg/kg	390	280	<1	30%	Pass	
TRH >C34-C40	L25-My0012130	CP	mg/kg	150	< 100	<1	30%	Pass	
Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	L25-My0012130	CP	mg/kg	< 5	< 5	<1	30%	Pass	
1-Chloronaphthalene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1-Naphthylamine	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trichlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Chloronaphthalene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Chlorophenol	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Methylnaphthalene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	L25-My0012130	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Naphthylamine	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Nitroaniline	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Nitrophenol	L25-My0012130	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2-Picoline	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.3.4.6-Tetrachlorophenol	L25-My0012130	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2.4-Dichlorophenol	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dimethylphenol	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	L25-My0012130	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2.4.5-Trichlorophenol	L25-My0012130	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	L25-My0012130	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2.4-Dinitrotoluene	L25-My0012130	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2.6-Dinitrotoluene	L25-My0012130	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	L25-My0012130	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
3-Methylcholanthrene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
3.3'-Dichlorobenzidine	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Aminobiphenyl	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Bromophenyl phenyl ether	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	L25-My0012130	CP	mg/kg	< 1	< 1	<1	30%	Pass	
4-Chlorophenyl phenyl ether	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Nitrophenol	L25-My0012130	CP	mg/kg	< 5	< 5	<1	30%	Pass	
4.4'-DDD	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDE	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDT	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
7.12-Dimethylbenz(a)anthracene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
a-HCH	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acetophenone	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aldrin	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aniline	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
b-HCH	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzyl chloride	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-chloroethoxy)methane	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-chloroisopropyl)ether	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-ethylhexyl)phthalate	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Butyl benzyl phthalate	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
d-HCH	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Di-n-butyl phthalate	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Di-n-octyl phthalate	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.j)acridine	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenzofuran	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dieldrin	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diethyl phthalate	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethyl phthalate	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethylaminoazobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diphenylamine	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan I	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan II	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan sulphate	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin aldehyde	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin ketone	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
g-HCH (Lindane)	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Heptachlor	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorocyclopentadiene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachloroethane	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methoxychlor	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosodibutylamine	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosodipropylamine	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosopiperidine	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Nitrobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachlorobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachloronitrobenzene	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachlorophenol	L25-My0012130	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
Phenol	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pronamide	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trifluralin	L25-My0012130	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	L25-My0012132	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	L25-My0012132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	L25-My0012132	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Iodomethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Isopropyl benzene (Cumene)	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	L25-My0012132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	L25-My0012132	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
VOCs in Soil by GCMS				Result 1	Result 2	RPD			
Benzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Carbon tetrachloride	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Chlorobenzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
DCM	L25-My0012132	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Ethylbenzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Hexachlorobutadiene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Perchloroethene (PCE)	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Trichloroethylene(TCE)	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Vinyl Chloride	L25-My0012132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Xylenes (Total)	L25-My0012132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1-Dichloroethane	L25-My0012132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.2-Dichloroethane	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.1-Dichloroethene	L25-My0012132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
cis-1.2-Dichloroethene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	L25-My0012132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1.1-Trichloroethane	L25-My0012132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2.3-Trichlorobenzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2.4-Trichlorobenzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.3.5-Trichlorobenzene	L25-My0012132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	L25-My0012133	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	L25-My0012133	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	L25-My0012133	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.1-Dichloroethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1-Dichloroethene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.1-Trichloroethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.1.2-Tetrachloroethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2-Trichloroethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2.2-Tetrachloroethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dibromoethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichlorobenzene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloroethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloropropane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.3-Trichloropropane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.4-Trimethylbenzene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichlorobenzene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichloropropane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3.5-Trimethylbenzene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.4-Dichlorobenzene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Butanone (MEK)	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Propanone (Acetone)	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chlorotoluene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Allyl chloride	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromobenzene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromochloromethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromodichloromethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromoform	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromomethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon disulfide	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon Tetrachloride	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorobenzene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroform	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloromethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.2-Dichloroethene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.3-Dichloropropene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromochloromethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromomethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorodifluoromethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Iodomethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Isopropyl benzene (Cumene)	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Methylene Chloride	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Styrene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1.2-Dichloroethene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1.3-Dichloropropene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	L25-My0012133	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	L25-My0012133	CP	mg/kg	< 20	< 20	<1	30%	Pass

Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	L25-My0012133	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Chromium	L25-My0012133	CP	mg/kg	4.4	4.5	3.0	30%	Pass	
Copper	L25-My0012133	CP	mg/kg	1.4	1.4	<1	30%	Pass	
Lead	L25-My0012133	CP	mg/kg	2.0	2.0	2.0	30%	Pass	
Mercury	L25-My0012133	CP	mg/kg	0.03	0.03	24	30%	Pass	
Nickel	L25-My0012133	CP	mg/kg	1.4	1.4	4.0	30%	Pass	
Zinc	L25-My0012133	CP	mg/kg	7.0	7.4	6.0	30%	Pass	
Duplicate									
VOCs in Soil by GCMS				Result 1	Result 2	RPD			
Benzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Carbon tetrachloride	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Chlorobenzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
DCM	L25-My0012133	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Ethylbenzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Hexachlorobutadiene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Perchloroethene (PCE)	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Trichloroethylene(TCE)	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Vinyl Chloride	L25-My0012133	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Xylenes (Total)	L25-My0012133	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1-Dichloroethane	L25-My0012133	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.2-Dichloroethane	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.1-Dichloroethene	L25-My0012133	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
cis-1.2-Dichloroethene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	L25-My0012133	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1.1-Trichloroethane	L25-My0012133	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2.3-Trichlorobenzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2.4-Trichlorobenzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.3.5-Trichlorobenzene	L25-My0012133	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	L25-My0012136	CP	%	3.3	3.3	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	L25-My0012138	CP	%	7.4	7.3	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	L25-My0012140	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	L25-My0012140	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	L25-My0012140	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	L25-My0012140	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	L25-My0012140	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
o-Xylene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	L25-My0012140	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Iodomethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	L25-My0012140	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	L25-My0012140	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	L25-My0012140	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	L25-My0012140	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	L25-My0012140	CP	mg/kg	< 5	< 5	<1	30%	Pass	
1-Chloronaphthalene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1-Naphthylamine	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trichlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Chloronaphthalene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Chlorophenol	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Methylnaphthalene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	L25-My0012140	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Naphthylamine	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Nitroaniline	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Nitrophenol	L25-My0012140	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2-Picoline	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.3.4.6-Tetrachlorophenol	L25-My0012140	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2.4-Dichlorophenol	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dimethylphenol	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	L25-My0012140	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2.4.5-Trichlorophenol	L25-My0012140	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	L25-My0012140	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dinitrotoluene	L25-My0012140	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2.6-Dinitrotoluene	L25-My0012140	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	L25-My0012140	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
3-Methylcholanthrene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
3.3'-Dichlorobenzidine	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
4-Aminobiphenyl	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Bromophenyl phenyl ether	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	L25-My0012140	CP	mg/kg	< 1	< 1	<1	30%	Pass	
4-Chlorophenyl phenyl ether	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Nitrophenol	L25-My0012140	CP	mg/kg	< 5	< 5	<1	30%	Pass	
4.4'-DDD	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDE	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDT	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
7.12-Dimethylbenz(a)anthracene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
a-HCH	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acetophenone	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aldrin	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aniline	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
b-HCH	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzyl chloride	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-chloroethoxy)methane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-chloroisopropyl)ether	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-ethylhexyl)phthalate	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Butyl benzyl phthalate	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
d-HCH	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Di-n-butyl phthalate	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Di-n-octyl phthalate	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.j)acridine	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenzofuran	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dieldrin	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diethyl phthalate	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethyl phthalate	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethylaminoazobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diphenylamine	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan I	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan II	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan sulphate	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin aldehyde	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin ketone	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
g-HCH (Lindane)	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Heptachlor	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorocyclopentadiene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachloroethane	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methoxychlor	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosodibutylamine	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosodipropylamine	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosopiperidine	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Nitrobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachlorobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachloronitrobenzene	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachlorophenol	L25-My0012140	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Phenol	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pronamide	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trifluralin	L25-My0012140	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
VOCs in Soil by GCMS				Result 1	Result 2	RPD			
Benzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Carbon tetrachloride	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Chlorobenzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
DCM	L25-My0012140	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Ethylbenzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Hexachlorobutadiene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Perchloroethene (PCE)	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Trichloroethylene(TCE)	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Vinyl Chloride	L25-My0012140	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Xylenes (Total)	L25-My0012140	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1-Dichloroethane	L25-My0012140	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.2-Dichloroethane	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.1-Dichloroethene	L25-My0012140	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
cis-1.2-Dichloroethene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	L25-My0012140	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1.1-Trichloroethane	L25-My0012140	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2.3-Trichlorobenzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2.4-Trichlorobenzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.3.5-Trichlorobenzene	L25-My0012140	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	L25-My0012147	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	L25-My0012147	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	L25-My0012147	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.4-Dichlorobenzene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Iodomethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	L25-My0012147	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	L25-My0012147	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
VOCs in Soil by GCMS				Result 1	Result 2	RPD			
Benzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Carbon tetrachloride	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Chlorobenzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
DCM	L25-My0012147	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Ethylbenzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Hexachlorobutadiene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Perchloroethene (PCE)	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Trichloroethylene(TCE)	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Vinyl Chloride	L25-My0012147	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Xylenes (Total)	L25-My0012147	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1-Dichloroethane	L25-My0012147	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.2-Dichloroethane	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.1-Dichloroethene	L25-My0012147	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
cis-1.2-Dichloroethene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
VOCs in Soil by GCMS				Result 1	Result 2	RPD			
trans-1.2-Dichloroethene	L25-My0012147	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1.1-Trichloroethane	L25-My0012147	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2.3-Trichlorobenzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2.4-Trichlorobenzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.3.5-Trichlorobenzene	L25-My0012147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	L25-My0012148	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	L25-My0012148	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Chromium	L25-My0012148	CP	mg/kg	1.0	< 1	20	30%	Pass	
Copper	L25-My0012148	CP	mg/kg	1.4	1.1	19	30%	Pass	
Lead	L25-My0012148	CP	mg/kg	2.0	1.8	11	30%	Pass	
Mercury	L25-My0012148	CP	mg/kg	< 0.02	< 0.02	<1	30%	Pass	
Nickel	L25-My0012148	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Zinc	L25-My0012148	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	L25-My0012148	CP	%	3.7	4.5	20	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	L25-My0012162	CP	%	6.3	6.2	2.0	30%	Pass	
Duplicate									
VOCs in Soil by GCMS				Result 1	Result 2	RPD			
Benzene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Carbon tetrachloride	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Chlorobenzene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
DCM	L25-My0027465	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Ethylbenzene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Hexachlorobutadiene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Methyl-tert-Butyl Ether	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Perchloroethene (PCE)	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Trichloroethylene(TCE)	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Vinyl Chloride	L25-My0027465	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Xylenes (Total)	L25-My0027465	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1-Dichloroethane	L25-My0027465	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.2-Dichloroethane	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.1-Dichloroethene	L25-My0027465	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
cis-1.2-Dichloroethene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	L25-My0027465	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1.1-Trichloroethane	L25-My0027465	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2.3-Trichlorobenzene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.2.4-Trichlorobenzene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
1.3.5-Trichlorobenzene	L25-My0027465	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	L25-My0012166	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	L25-My0012166	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	L25-My0012166	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	L25-My0012166	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	L25-My0012166	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	L25-My0012166	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	L25-My0012166	CP	mg/kg	< 5	< 5	<1	30%	Pass	
1-Chloronaphthalene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1-Naphthylamine	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trichlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Chloronaphthalene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Chlorophenol	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Methylnaphthalene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	L25-My0012166	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Naphthylamine	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Nitroaniline	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Nitrophenol	L25-My0012166	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2-Picoline	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.3.4.6-Tetrachlorophenol	L25-My0012166	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2.4-Dichlorophenol	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dimethylphenol	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	L25-My0012166	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2.4.5-Trichlorophenol	L25-My0012166	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	L25-My0012166	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2.4-Dinitrotoluene	L25-My0012166	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2.6-Dinitrotoluene	L25-My0012166	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	L25-My0012166	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
3-Methylcholanthrene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
3.3'-Dichlorobenzidine	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Aminobiphenyl	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Bromophenyl phenyl ether	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	L25-My0012166	CP	mg/kg	< 1	< 1	<1	30%	Pass	
4-Chlorophenyl phenyl ether	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Nitrophenol	L25-My0012166	CP	mg/kg	< 5	< 5	<1	30%	Pass	
4.4'-DDD	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDE	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDT	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
7.12-Dimethylbenz(a)anthracene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
a-HCH	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acetophenone	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aldrin	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aniline	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
b-HCH	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzyl chloride	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-chloroethoxy)methane	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-chloroisopropyl)ether	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bis(2-ethylhexyl)phthalate	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Butyl benzyl phthalate	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
d-HCH	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Di-n-butyl phthalate	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Di-n-octyl phthalate	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.j)acridine	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenzofuran	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dieldrin	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diethyl phthalate	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethyl phthalate	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethylaminoazobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diphenylamine	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan I	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan II	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan sulphate	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin aldehyde	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin ketone	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
g-HCH (Lindane)	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Heptachlor	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorocyclopentadiene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachloroethane	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methoxychlor	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosodibutylamine	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosodipropylamine	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
N-Nitrosopiperidine	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Nitrobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachlorobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachloronitrobenzene	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachlorophenol	L25-My0012166	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
Phenol	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pronamide	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trifluralin	L25-My0012166	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	L25-My0012166	CP	mg/kg	2.2	2.3	4.0	30%	Pass	
Cadmium	L25-My0012166	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Chromium	L25-My0012166	CP	mg/kg	11	11	4.0	30%	Pass	
Copper	L25-My0012166	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Lead	L25-My0012166	CP	mg/kg	3.7	3.6	3.0	30%	Pass	
Mercury	L25-My0012166	CP	mg/kg	0.03	0.03	19	30%	Pass	
Zinc	L25-My0012166	CP	mg/kg	< 5	< 5	<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
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
Q05	The matrix spike concentration is less than five times the background concentration in the sample - therefore the spike recovery cannot be determined
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised by:

Natalie Hill	Analytical Services Manager
Sean Sangster	Senior Analyst-Metal
Douglas Todd	Senior Analyst-Sample Properties
Rhys Thomas	Senior Analyst-Asbestos
Patrick Patfield	Senior Analyst-Volatile
Douglas Todd	Senior Analyst-Organic
Patrick Patfield	Senior Analyst-Organic
Douglas Todd	Senior Analyst-Volatile

Kim Rodgers
General Manager

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

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GHD Pty Ltd WA
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WA 6004

NATA Accredited
Accreditation Number 2377
Site Number 2370 & 2554

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

Attention: **Zak Langtry**

Report **1215966-W**
Project name
Project ID 12658388
Received Date May 05, 2025

Client Sample ID			**GHD_QC06**	**GHD_QC07**	**GHD_QC08**	**GHD_QC09**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**L25-My0012156**	**L25-My0012157**	**L25-My0012158**	**L25-My0012159**
Date Sampled			**May 01, 2025**	**May 02, 2025**	**May 02, 2025**	**May 02, 2025**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C15-C28	0.04	mg/L	< 0.04	< 0.04	< 0.04	< 0.04
TRH C29-C36	0.04	mg/L	< 0.04	< 0.04	< 0.04	< 0.04
TRH C10-C36 (Total)	0.04	mg/L	< 0.04	< 0.04	< 0.04	< 0.04
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	78	81	81	81
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			GHD_QC06	GHD_QC07	GHD_QC08	GHD_QC09
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			L25-My0012156	L25-My0012157	L25-My0012158	L25-My0012159
Date Sampled			May 01, 2025	May 02, 2025	May 02, 2025	May 02, 2025
Test/Reference	LOR	Unit				
Volatile Organics						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total MAH*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	78	81	81	81
Toluene-d8 (surr.)	1	%	99	100	101	102
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
TRH >C10-C16 less Naphthalene (F2)*[N01]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			GHD_QC06	GHD_QC07	GHD_QC08	GHD_QC09
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			L25-My0012156	L25-My0012157	L25-My0012158	L25-My0012159
Date Sampled			May 01, 2025	May 02, 2025	May 02, 2025	May 02, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	99	143	106	122
p-Terphenyl-d14 (surr.)	1	%	114	150	120	141
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C16-C34	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C34-C40	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C40 (total)*	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Benzo(a)pyrene TEQ (lower bound) *	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Methyl-4.6-dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Chlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	99	143	106	122
2-Methylnaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Methylphenol (o-Cresol)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Nitroaniline	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Picoline	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4-Dimethylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4-Dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4.5-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4.6-Tribromophenol (surr.)	1	%	114	150	120	141

Client Sample ID			GHD_QC06	GHD_QC07	GHD_QC08	GHD_QC09
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			L25-My0012156	L25-My0012157	L25-My0012158	L25-My0012159
Date Sampled			May 01, 2025	May 02, 2025	May 02, 2025	May 02, 2025
Test/Reference	LOR	Unit				
Semivolatile Organics						
2.4.6-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.6-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2.6-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
3-Methylcholanthrene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Chloro-3-methylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4.4'-DDD	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4.4'-DDE	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4.4'-DDT	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
a-HCH	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acetophenone	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aniline	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
b-HCH	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
d-HCH	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.j)acridine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dieldrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Diphenylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Endosulfan I	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Endosulfan II	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			GHD_QC06	GHD_QC07	GHD_QC08	GHD_QC09
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			L25-My0012156	L25-My0012157	L25-My0012158	L25-My0012159
Date Sampled			May 01, 2025	May 02, 2025	May 02, 2025	May 02, 2025
Test/Reference	LOR	Unit				
Semivolatile Organics						
Endosulfan sulphate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Endrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Endrin ketone	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
g-HCH (Lindane)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Heptachlor	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Methoxychlor	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
N-Nitrosopiperidine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Nitrobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Nitrobenzene-d5 (surr.)	1	%	107	149	107	124
Pentachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Pentachlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenol-d6 (surr.)	1	%	61	98	112	74
Pronamide	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trifluralin	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Metals M8						
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Welshpool	May 06, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Welshpool	May 06, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Welshpool	May 06, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Welshpool	May 06, 2025	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Welshpool	May 06, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Welshpool	May 09, 2025	7 Days
- Method: ARL 132 - Purgeable Organics in Water by GCMS			
Semivolatile Organics	Welshpool	May 09, 2025	7 Days
- Method: LTM-ORG-2190 SVOC in Water & Soil by GC-MS			
Metals M8	Welshpool	May 06, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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Fax: 08 9429 6555

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Due: May 12, 2025
Priority: 5 Day
Contact Name: - ALL GHD lab reports

Eurofins Analytical Services Manager : Natalie Hill

Sample Detail						HOLD	Metals M8	Moisture Set	Eurofins Suite B4	Eurofins Suite SVV: SVOC/VOC	Asbestos in Soils (ASC NEPM 2013)	VOCs in Soil by GCMS
Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	GHD_APPLECROSS_HA01_0.1	May 01, 2025		Soil	L25-My0012120		X	X	X	X		
2	GHD_APPLECROSS_HA01_0.3	May 01, 2025		Soil	L25-My0012121		X	X	X	X		
3	GHD_APPLECROSS_HA01_0.6	May 01, 2025		Soil	L25-My0012122		X	X	X	X		
4	GHD_APPLECROSS_HA01_1.25	May 01, 2025		Soil	L25-My0012123		X	X	X	X		
5	GHD_APPLECROSS_HA02_0.1	May 01, 2025		Soil	L25-My0012124		X	X	X	X		
6	GHD_APPLECROSS_HA02_	May 01, 2025		Soil	L25-My0012125		X	X	X	X		

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Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
	0.4											
7	GHD_APPLECROSS_HA02_0.6	May 01, 2025		Soil	L25-My0012126		X	X	X	X		
8	GHD_APPLECROSS_HA02_0.8	May 01, 2025		Soil	L25-My0012127		X	X	X	X		
9	GHD_ELLAM_ST_HA01_0.0	May 01, 2025		Soil	L25-My0012128		X	X	X	X		
10	GHD_ELLAM_ST_HA01_0.2	May 01, 2025		Soil	L25-My0012129		X	X	X	X		
11	GHD_ELLAM_ST_HA01_0.4	May 01, 2025		Soil	L25-My0012130		X	X	X	X	X	
12	GHD_ELLAM_ST_HA02_0.1	May 01, 2025		Soil	L25-My0012131		X	X	X	X		
13	GHD_ELLAM_ST_HA02_0.3	May 01, 2025		Soil	L25-My0012132		X	X	X	X		
14	GHD_ELLAM_	May 01, 2025		Soil	L25-My0012133		X	X	X	X		

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Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
14	GHD_ELLAM_ST_HA02_0.5	May 01, 2025		Soil	L25-My0012133							
15	GHD_ELLAM_ST_HA03_0.1	May 01, 2025		Soil	L25-My0012134		X	X	X	X		
16	GHD_ELLAM_ST_HA03_0.4	May 01, 2025		Soil	L25-My0012135		X	X	X	X		
17	GHD_ELLAM_ST_HA03_0.5	May 01, 2025		Soil	L25-My0012136		X	X	X	X		
18	GHD_ELLAM_ST_HA03_0.8	May 01, 2025		Soil	L25-My0012137		X	X	X	X		
19	GHD_MATBAY1_HA01_0.1	May 02, 2025		Soil	L25-My0012138		X	X	X	X		
20	GHD_MATBAY1_HA01_0.2	May 02, 2025		Soil	L25-My0012139		X	X	X	X		
21	GHD_MATBAY1_HA01_0.8	May 02, 2025		Soil	L25-My0012140		X	X	X	X		
22	GHD_MATBAY1_HA02_0.1	May 02, 2025		Soil	L25-My0012141		X	X	X	X		

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Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
23	GHD_MATBAY1_HA02_0.3	May 02, 2025		Soil	L25-My0012142		X	X	X	X		
24	GHD_MATBAY1_HA02_0.7	May 02, 2025		Soil	L25-My0012143		X	X	X	X		
25	GHD_MATBAY1_HA03_0.1	May 02, 2025		Soil	L25-My0012144		X	X	X	X		
26	GHD_MATBAY1_HA03_0.3	May 02, 2025		Soil	L25-My0012145		X	X	X	X		
27	GHD_MATBAY1_HA03_0.6	May 02, 2025		Soil	L25-My0012146		X	X	X	X		
28	GHD_MATBAY2_HA01_0.1	May 02, 2025		Soil	L25-My0012147		X	X	X	X		
29	GHD_MATBAY2_HA01_0.3	May 02, 2025		Soil	L25-My0012148		X	X	X	X		
30	GHD_MATBAY2_HA01_0.5	May 02, 2025		Soil	L25-My0012149		X	X	X	X		
31	GHD_MATBAY2_HA02_0.1	May 02, 2025		Soil	L25-My0012150		X	X	X	X		

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Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
32	GHD_MATBAY2_HA02_0.3	May 02, 2025		Soil	L25-My0012151		X	X	X	X		
33	GHD_MATBAY2_HA02_0.5	May 02, 2025		Soil	L25-My0012152		X	X	X	X		
34	GHD_MATBAY2_HA03_0.1	May 02, 2025		Soil	L25-My0012153		X	X	X	X		
35	GHD_MATBAY2_HA03_0.2	May 02, 2025		Soil	L25-My0012154		X	X	X	X		
36	GHD_MATBAY2_HA03_0.5	May 02, 2025		Soil	L25-My0012155		X	X	X	X		
37	GHD_QC06	May 01, 2025		Water	L25-My0012156		X		X	X		
38	GHD_QC07	May 02, 2025		Water	L25-My0012157		X		X	X		
39	GHD_QC08	May 02, 2025		Water	L25-My0012158		X		X	X		
40	GHD_QC09	May 02, 2025		Water	L25-My0012159		X		X	X		
41	GHD_QC10	May 01, 2025		Soil	L25-My0012160		X	X	X	X		
42	GHD_QC11	May 01, 2025		Soil	L25-My0012161		X	X	X	X		

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Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254										X		
External Laboratory												
43	GHD_QC13	May 05, 2025		Soil	L25-My0012162			X				X
44	GHD_QC12	May 02, 2025		Soil	L25-My0012163	X						
45	GHD_APPLECROSS_HA03_0.1	May 01, 2025		Soil	L25-My0012164		X	X	X	X		
46	GHD_APPLECROSS_HA03_0.2	May 01, 2025		Soil	L25-My0012165		X	X	X	X		
47	GHD_APPLECROSS_HA03_0.5	May 01, 2025		Soil	L25-My0012166		X	X	X	X		
Test Counts						1	45	42	45	45	1	1

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Internal Quality Control Review and Glossary

General

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

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

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

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**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	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
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 moisture has been determined on a solid sample, the result is expressed on a dry weight 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 represents 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 similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
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 6.0
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 only be used as a guide 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%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as 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 are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.02			0.02	Pass	
TRH C15-C28	mg/L	< 0.04			0.04	Pass	
TRH C29-C36	mg/L	< 0.04			0.04	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.001			0.001	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/L	< 0.02			0.02	Pass	
TRH >C16-C34	mg/L	< 0.05			0.05	Pass	
TRH >C34-C40	mg/L	< 0.05			0.05	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.001			0.001	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1.2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Chlorophenol	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.001			0.001	Pass	
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Nitrophenol	mg/L	< 0.001			0.001	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dimethylphenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrophenol	mg/L	< 0.001			0.001	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.6-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
2.6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.001			0.001	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.001			0.001	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Nitrophenol	mg/L	< 0.001			0.001	Pass	
4.4'-DDE	mg/L	< 0.005			0.005	Pass	
4.4'-DDT	mg/L	< 0.005			0.005	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-HCH	mg/L	< 0.005			0.005	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
b-HCH	mg/L	< 0.005			0.005	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
d-HCH	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a.j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
g-HCH (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Nitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorophenol	mg/L	< 0.001			0.001	Pass	
Phenol	mg/L	< 0.001			0.001	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Metals M8							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0001			0.0001	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	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	76			70-130	Pass	
TRH C10-C14	%	96			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	91			70-130	Pass	
Toluene	%	91			70-130	Pass	
Ethylbenzene	%	104			70-130	Pass	
m&p-Xylenes	%	104			70-130	Pass	
o-Xylene	%	107			70-130	Pass	
Xylenes - Total*	%	105			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	103			70-130	Pass	
1.1.1-Trichloroethane	%	80			70-130	Pass	
1.2-Dichlorobenzene	%	109			70-130	Pass	
1.2-Dichloroethane	%	95			70-130	Pass	
Trichloroethene	%	98			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	108			70-130	Pass	
TRH C6-C10	%	108			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	118			70-130	Pass	
Acenaphthylene	%	120			70-130	Pass	
Anthracene	%	120			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	%	106			70-130	Pass	
Benzo(a)pyrene	%	122			70-130	Pass	
Benzo(b&j)fluoranthene	%	109			70-130	Pass	
Benzo(g.h.i)perylene	%	97			70-130	Pass	
Benzo(k)fluoranthene	%	123			70-130	Pass	
Chrysene	%	121			70-130	Pass	
Dibenz(a.h)anthracene	%	113			70-130	Pass	
Fluoranthene	%	94			70-130	Pass	
Fluorene	%	122			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	103			70-130	Pass	
Naphthalene	%	121			70-130	Pass	
Phenanthrene	%	119			70-130	Pass	
Pyrene	%	125			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	86			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	%	111			25-140	Pass	
2-Chlorophenol	%	117			25-140	Pass	
2-Methylphenol (o-Cresol)	%	77			25-140	Pass	
2-Nitrophenol	%	96			25-140	Pass	
2.4-Dichlorophenol	%	94			25-140	Pass	
2.4-Dimethylphenol	%	93			25-140	Pass	
2.4.5-Trichlorophenol	%	97			25-140	Pass	
2.4.6-Trichlorophenol	%	99			25-140	Pass	
2.6-Dichlorophenol	%	94			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	123			25-140	Pass	
4-Chloro-3-methylphenol	%	99			25-140	Pass	
4-Nitrophenol	%	83			25-140	Pass	
Pentachlorophenol	%	117			25-140	Pass	
Phenol	%	113			25-140	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	107			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Chromium	%	97			80-120	Pass	
Copper	%	91			80-120	Pass	
Lead	%	101			80-120	Pass	
Mercury	%	113			80-120	Pass	
Nickel	%	98			80-120	Pass	
Zinc	%	101			80-120	Pass	
LCS - % Recovery							
Semivolatile Organics							
2.4-Dinitrophenol	%	89			25-140	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	L25-My0012156	CP	%	104			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	L25-My0012156	CP	%	116			70-130	Pass	
Anthracene	L25-My0012156	CP	%	105			70-130	Pass	
Benz(a)anthracene	L25-My0012156	CP	%	115			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	L25-My0012156	CP	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	L25-My0012156	CP	%	89			70-130	Pass	
Benzo(g.h.i)perylene	L25-My0012156	CP	%	82			70-130	Pass	
Benzo(k)fluoranthene	L25-My0012156	CP	%	104			70-130	Pass	
Chrysene	L25-My0012156	CP	%	102			70-130	Pass	
Fluoranthene	L25-My0012156	CP	%	96			70-130	Pass	
Fluorene	L25-My0012156	CP	%	108			70-130	Pass	
Indeno(1.2.3-cd)pyrene	L25-My0012156	CP	%	81			70-130	Pass	
Naphthalene	L25-My0012156	CP	%	96			70-130	Pass	
Phenanthrene	L25-My0012156	CP	%	98			70-130	Pass	
Pyrene	L25-My0012156	CP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	L25-My0012156	CP	%	89			70-130	Pass	
Spike - % Recovery									
Semivolatile Organics				Result 1					
2-Methyl-4.6-dinitrophenol	L25-My0002586	NCP	%	106			30-130	Pass	
2-Chlorophenol	L25-My0002586	NCP	%	87			30-130	Pass	
2-Nitrophenol	L25-My0002586	NCP	%	107			30-130	Pass	
2.4-Dichlorophenol	L25-My0002586	NCP	%	101			30-130	Pass	
2.4-Dimethylphenol	L25-My0002586	NCP	%	79			30-130	Pass	
2.4-Dinitrophenol	L25-My0002586	NCP	%	106			30-130	Pass	
2.4.5-Trichlorophenol	L25-My0002586	NCP	%	81			30-130	Pass	
2.4.6-Trichlorophenol	L25-My0002586	NCP	%	93			30-130	Pass	
2.6-Dichlorophenol	L25-My0002586	NCP	%	100			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	L25-My0002586	NCP	%	114			30-130	Pass	
4-Chloro-3-methylphenol	L25-My0002586	NCP	%	101			30-130	Pass	
4-Nitrophenol	L25-My0002586	NCP	%	97			30-130	Pass	
Pentachlorophenol	L25-My0002586	NCP	%	122			30-130	Pass	
Phenol	L25-My0002586	NCP	%	95			30-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	L25-Ap0057940	NCP	%	100			75-125	Pass	
Cadmium	L25-Ap0057940	NCP	%	100			75-125	Pass	
Chromium	L25-Ap0057940	NCP	%	94			75-125	Pass	
Lead	L25-Ap0057940	NCP	%	91			75-125	Pass	
Mercury	L25-Ap0057940	NCP	%	94			75-125	Pass	
Nickel	L25-Ap0057940	NCP	%	88			75-125	Pass	
Zinc	L25-Ap0057940	NCP	%	81			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	L25-My0012159	CP	%	109			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	L25-My0012159	CP	%	87			70-130	Pass	
Toluene	L25-My0012159	CP	%	101			70-130	Pass	
Ethylbenzene	L25-My0012159	CP	%	97			70-130	Pass	
m&p-Xylenes	L25-My0012159	CP	%	107			70-130	Pass	
o-Xylene	L25-My0012159	CP	%	96			70-130	Pass	
Xylenes - Total*	L25-My0012159	CP	%	103			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	L25-My0012159	CP	%	81			70-130	Pass	
TRH C6-C10	L25-My0012159	CP	%	105			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	L25-My0012418	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	L25-My0006217	NCP	mg/L	1.9	< 0.02	<1	30%	Pass	
TRH C15-C28	L25-My0006217	NCP	mg/L	< 0.04	2.3	17	30%	Pass	
TRH C29-C36	L25-My0006217	NCP	mg/L	3.1	< 0.04	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	L25-My0012418	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
TRH C6-C10	L25-My0012418	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	L25-My0006217	NCP	mg/L	1.5	0.31	15	30%	Pass	
TRH >C16-C34	L25-My0006217	NCP	mg/L	< 0.05	1.2	19	30%	Pass	
TRH >C34-C40	L25-My0006217	NCP	mg/L	1.3	< 0.05	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	L25-My0014054	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	L25-My0014054	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Chromium	L25-My0014054	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	L25-My0014054	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	L25-My0014054	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	L25-My0014054	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	L25-My0014054	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	L25-My0014054	NCP	mg/L	< 0.005	< 0.005	<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
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

Authorised by:

Natalie Hill	Analytical Services Manager
Douglas Todd	Senior Analyst-Organic
Patrick Patfield	Senior Analyst-Organic
Patrick Patfield	Senior Analyst-Volatile
Sean Sangster	Senior Analyst-Metal

Kim Rodgers
General Manager

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

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.

Certificate of Analysis

GHD Pty Ltd WA
999 Hay Street Perth
Perth
WA 6004

NATA Accredited
Accreditation Number 2377
Site Number 2370 & 2554

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

Attention:	Zak Langtry
Report	1215966-AIS
Project Name	
Project ID	12658388
Received Date	May 05, 2025
Date Reported	May 16, 2025

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004 and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Man-made vitreous fibre (MMVF)	Fibres exhibiting isotropic characteristics, including glass fibres, glass wool, rock wool, slag wool, ceramic fibres and bio-soluble fibres. NOTE: previously known as "synthetic mineral fibre" (SMF). Simple analytical procedures such as polarised light microscopy cannot detect or reliably identify asbestos in some types of commercial products containing asbestos, either because the fibres are below the resolution of optical microscopy or because the matrix material adheres too strongly to the fibres. For these types of products, electron microscopy may be necessary.
Subsampling Soil Samples	The sample submitted is dried and passed through a 10 mm sieve followed by a 2 mm sieve. All fibrous matter greater than 10 mm and greater than 2 mm and the material passing through the 2 mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 g to 60 g, then a subsampling routine based on ISO 3082:2017(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be subsampled for trace analysis, in accordance with AS 5370:2024*.*
Bonded asbestos-containing material (ACM)	The material is first examined, and any fibres are isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 5370:2024*. *NOTE: Even after disintegration, it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting (LOR)	The performance limitation of the AS 5370:2024* method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory limit of reporting, per se. Examination of large sample size (e.g., 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 5370:2024*, and hence, NATA Accreditation does not cover the performance of this service (non-NATA results are shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964-2004: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Client Sample ID			**GHD_ELLAM_ST_HA01_0.4**
Sample Matrix			**Soil**
Eurofins Sample No.			**25-My0012130**
Date Sampled			**May 01, 2025**
	LOR	Unit	
Asbestos in Soils (AS 4964-2004)			
Sample Description	-	Comment	Brown coarse grain soil.
Total Dry Mass	0.1	g	651
Total Analytical Fraction	0.1	g	651
Asbestos Detected	-	Yes/No	Yes
Materials Identified	-	Comment	1. Grey fibre cement fragments
Fibres Identified	-	Comment	1. Chrysotile and amosite asbestos
Asbestos Content (as asbestos)	0.01	% w/w	0.10
Trace Analysis	0.1	g/kg	No trace asbestos.

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
LTM-ASB-8020 Method for the Qualitative Identification of Asbestos in Bulk Samples (AS 4964-2004)	Welshpool	May 12, 2025	Indefinite

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Project Name:
Project ID: 12658388

Order No.: 12658388
Report #: 1215966
Phone: 08 6222 8222
Fax: 08 9429 6555

Received: May 5, 2025 2:55 PM
Due: May 14, 2025
Priority: 5 Day
Contact Name: - ALL GHD lab reports

Eurofins Analytical Services Manager : Natalie Hill

Sample Detail						Asbestos in Soils (AS 4964-2004)	HOLD	Metals M8	Moisture Set	Eurofins Suite B4	Eurofins Suite SVV: SVOC/VOC	VOCs in Soil by GCMS
Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254											X	
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	GHD_APPLECROSS_HA01_0.1	May 01, 2025		Soil	L25-My0012120			X	X	X	X	
2	GHD_APPLECROSS_HA01_0.3	May 01, 2025		Soil	L25-My0012121			X	X	X	X	
3	GHD_APPLECROSS_HA01_0.6	May 01, 2025		Soil	L25-My0012122			X	X	X	X	
4	GHD_APPLECROSS_HA01_1.25	May 01, 2025		Soil	L25-My0012123			X	X	X	X	
5	GHD_APPLECROSS_HA02_0.1	May 01, 2025		Soil	L25-My0012124			X	X	X	X	
6	GHD_APPLECROSS_HA02_	May 01, 2025		Soil	L25-My0012125			X	X	X	X	

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Sample Detail						Asbestos in Soils (AS 4964-2004)	HOLD	Metals M8	Moisture Set	Eurofins Suite B4	Eurofins Suite SVV: SVOC/VOC	VOCs in Soil by GCMS
Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254											X	
External Laboratory												
	0.4											
7	GHD_APPLECROSS_HA02_0.6	May 01, 2025		Soil	L25-My0012126			X	X	X	X	
8	GHD_APPLECROSS_HA02_0.8	May 01, 2025		Soil	L25-My0012127			X	X	X	X	
9	GHD_ELLAM_ST_HA01_0.0	May 01, 2025		Soil	L25-My0012128			X	X	X	X	
10	GHD_ELLAM_ST_HA01_0.2	May 01, 2025		Soil	L25-My0012129			X	X	X	X	
11	GHD_ELLAM_ST_HA01_0.4	May 01, 2025		Soil	L25-My0012130	X						
12	GHD_ELLAM_ST_HA02_0.1	May 01, 2025		Soil	L25-My0012131			X	X	X	X	
13	GHD_ELLAM_ST_HA02_0.3	May 01, 2025		Soil	L25-My0012132			X	X	X	X	
14	GHD_ELLAM_	May 01, 2025		Soil	L25-My0012133			X	X	X	X	

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Sample Detail						Asbestos in Soils (AS 4964-2004)	HOLD	Metals M8	Moisture Set	Eurofins Suite B4	Eurofins Suite SVV: SVOC/VOC	VOCs in Soil by GCMS
Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254											X	
External Laboratory												
14	GHD_ELLAM_ST_HA02_0.5	May 01, 2025		Soil	L25-My0012133							
15	GHD_ELLAM_ST_HA03_0.1	May 01, 2025		Soil	L25-My0012134			X	X	X	X	
16	GHD_ELLAM_ST_HA03_0.4	May 01, 2025		Soil	L25-My0012135			X	X	X	X	
17	GHD_ELLAM_ST_HA03_0.5	May 01, 2025		Soil	L25-My0012136			X	X	X	X	
18	GHD_ELLAM_ST_HA03_0.8	May 01, 2025		Soil	L25-My0012137			X	X	X	X	
19	GHD_MATBAY1_HA01_0.1	May 02, 2025		Soil	L25-My0012138			X	X	X	X	
20	GHD_MATBAY1_HA01_0.2	May 02, 2025		Soil	L25-My0012139			X	X	X	X	
21	GHD_MATBAY1_HA01_0.8	May 02, 2025		Soil	L25-My0012140			X	X	X	X	
22	GHD_MATBAY1_HA02_0.1	May 02, 2025		Soil	L25-My0012141			X	X	X	X	

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Eurofins Analytical Services Manager : Natalie Hill

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Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254											X	
External Laboratory												
23	GHD_MATBAY1_HA02_0.3	May 02, 2025		Soil	L25-My0012142			X	X	X	X	
24	GHD_MATBAY1_HA02_0.7	May 02, 2025		Soil	L25-My0012143			X	X	X	X	
25	GHD_MATBAY1_HA03_0.1	May 02, 2025		Soil	L25-My0012144			X	X	X	X	
26	GHD_MATBAY1_HA03_0.3	May 02, 2025		Soil	L25-My0012145			X	X	X	X	
27	GHD_MATBAY1_HA03_0.6	May 02, 2025		Soil	L25-My0012146			X	X	X	X	
28	GHD_MATBAY2_HA01_0.1	May 02, 2025		Soil	L25-My0012147			X	X	X	X	
29	GHD_MATBAY2_HA01_0.3	May 02, 2025		Soil	L25-My0012148			X	X	X	X	
30	GHD_MATBAY2_HA01_0.5	May 02, 2025		Soil	L25-My0012149			X	X	X	X	
31	GHD_MATBAY2_HA02_0.1	May 02, 2025		Soil	L25-My0012150			X	X	X	X	

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Company Name: GHD Pty Ltd WA
Address: 999 Hay Street Perth
Perth
WA 6004

Project Name:
Project ID: 12658388

Order No.: 12658388
Report #: 1215966
Phone: 08 6222 8222
Fax: 08 9429 6555

Received: May 5, 2025 2:55 PM
Due: May 14, 2025
Priority: 5 Day
Contact Name: - ALL GHD lab reports

Eurofins Analytical Services Manager : Natalie Hill

Sample Detail						Asbestos in Soils (AS 4964-2004)	HOLD	Metals M8	Moisture Set	Eurofins Suite B4	Eurofins Suite SVV: SVOC/VOC	VOCs in Soil by GCMS
Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254											X	
External Laboratory												
32	GHD_MATBAY2_HA02_0.3	May 02, 2025		Soil	L25-My0012151			X	X	X	X	
33	GHD_MATBAY2_HA02_0.5	May 02, 2025		Soil	L25-My0012152			X	X	X	X	
34	GHD_MATBAY2_HA03_0.1	May 02, 2025		Soil	L25-My0012153			X	X	X	X	
35	GHD_MATBAY2_HA03_0.2	May 02, 2025		Soil	L25-My0012154			X	X	X	X	
36	GHD_MATBAY2_HA03_0.5	May 02, 2025		Soil	L25-My0012155			X	X	X	X	
37	GHD_QC06	May 01, 2025		Water	L25-My0012156			X		X	X	
38	GHD_QC07	May 02, 2025		Water	L25-My0012157			X		X	X	
39	GHD_QC08	May 02, 2025		Water	L25-My0012158			X		X	X	
40	GHD_QC09	May 02, 2025		Water	L25-My0012159			X		X	X	
41	GHD_QC10	May 01, 2025		Soil	L25-My0012160			X	X	X	X	
42	GHD_QC11	May 01, 2025		Soil	L25-My0012161			X	X	X	X	

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Company Name: GHD Pty Ltd WA
Address: 999 Hay Street Perth
Perth
WA 6004

Project Name:
Project ID: 12658388

Order No.: 12658388
Report #: 1215966
Phone: 08 6222 8222
Fax: 08 9429 6555

Received: May 5, 2025 2:55 PM
Due: May 14, 2025
Priority: 5 Day
Contact Name: - ALL GHD lab reports

Eurofins Analytical Services Manager : Natalie Hill

Sample Detail						Asbestos in Soils (AS 4964-2004)	HOLD	Metals M8	Moisture Set	Eurofins Suite B4	Eurofins Suite SVV: SVOC/VOC	VOCs in Soil by GCMS
Perth Laboratory - NATA # 2377 Site # 2370 & 2554						X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254											X	
External Laboratory												
43	GHD_QC13	May 05, 2025		Soil	L25-My0012162				X			X
44	GHD_QC12	May 02, 2025		Soil	L25-My0012163		X					
45	GHD_APPLECROSS_HA03_0.1	May 01, 2025		Soil	L25-My0012164			X	X	X	X	
46	GHD_APPLECROSS_HA03_0.2	May 01, 2025		Soil	L25-My0012165			X	X	X	X	
47	GHD_APPLECROSS_HA03_0.5	May 01, 2025		Soil	L25-My0012166			X	X	X	X	
Test Counts						1	1	44	41	44	44	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report in blue indicates data provided by the customer that may impact the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%Asbestos	Estimated percentage of asbestos in a given matrix may be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**). This estimate is not NATA-accredited.
ACM	Asbestos Containing Materials. Asbestos in a non-asbestos matrix is typically presented in bonded (non-friable) condition. For the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material, such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to “non-bonded / friable”.
AFM	Airborne Fibre Monitoring, e.g., by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total %w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
Dry	Sample is dried by heating before analysis.
DS	Dispersion Staining. The technique required for unequivocal identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos-containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material previously non-friable and severely degraded. For the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to distinguish visibly and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess the degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021), ISBN: 9780616667079.
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012), ISBN: 9780717665020
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
MMVF	Man-Made Vitreous Fibre - exhibiting isotropic characteristics, including glass fibres, glass wool, rock wool, slag wool, ceramic fibres and “bio-soluble fibres. NOTE: previously known as “synthetic mineral fibre” (SMF).
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified per AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
PCM	Phase Contrast Microscopy. This is used for fibre counting, according to the MFM.
PLM	Polarised Light Microscopy. It is used for fibre identification and residual analysis according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
Sampling	Unless otherwise stated, Eurofins are not responsible for sampling equipment or the sampling process.
SRA	Sample Receipt Advice.
Residual Analysis	An analytical procedure is used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly Trace Analysis in AS 4964-2004.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
Inconclusive	Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004. It may include (but is not limited to) actinolite, anthophyllite, or tremolite asbestos. SEM/TEM is required for definitive identification.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average %w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

Sample Integrity

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

Asbestos Counter/Identifier:

Gustav Myburgh	Senior Analyst-Asbestos

Authorised by:

Rhys Thomas	Senior Analyst-Asbestos

Kim Rodgers
General Manager

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

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

CHAIN OF CUSTODY RECORD
AND ANALYSIS REQUEST

GHD
Level 10, 999 Hay Street
Perth WA 6000

PO Box 3106
Perth WA 6832

Reception Ph: 08 6222 8222

Page 1 of 1

Project No. *(as set up in ESdat)* 12658388	**Site Name** *(as set up in ESdat)* Swan River Ferry Expansion: Swan River Monitoring
Laboratory Quote No. As per email request 22/04/2025	**Turnaround Time** Standard (5 days)
Job Manager (Invoice) & GHD accounts louise.cockerton@ghd.com	**Email Address (Results)** Louise.cockerton@ghd.com; Rachel.stuckey@ghd.com

Laboratory: ALS
Address:
Laboratory Contact: Sample Receipt

GHD Sample ID		Date	Time	Sample Matrix S-Soil/ SL-Sludge/ W-Water/ A-Air	Container: Type B-Bottle/J-Jar/V-Vial/Bag/G-Glass/P-Plastic	Container: Preservative Unpreserved/ HCl/ H2SO4/HNO3/Other	Container: No	Analyses: Metals (total and filtered): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Al, Co, Fe, Mn, Mo, Se, Ag	Analyses: Cations: Na, K, Ca, Mg	Analyses: Anions: Cl, SO4(as SO4), Alkalinity (CO3, HCO3, OH-, Total)	Analyses: Nutrients: TN*, TKN, NOX, NO2, NO3, NH3(as N), TP, FRP(as P)	Analyses: TDS, TSS and TOC	Analyses: Sulfide	Analyses: TRH, BTEXN, PAH	Analyses: OCP	Analyses: PFAS Super ultra trace long suite (EP231X-SUT)	Analyses: PCB – trace level	Analyses: TBT	Analyses	Remarks
GHD-QC06	(1)	29-Apr-25		W	P Bottles	Various	-	X	X	X	X	X	X	X	X	X	X	X	

Environmental Division
Perth
Work Order Reference
EP2506907

Telephone : -- 61-8-9406 1301

Sampled by: L Cockerton	Date/Time: 29/04/2025	Relinquished by: L Cockerton	Date/Time: 30/04/2025
Requested by: L Ouffy	Date/Time: 2/5 1025	Relinquished by:	Date/Time:

CERTIFICATE OF ANALYSIS

Work Order	: **EP2506907**	Page	: 1 of 12
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: MS LOUISE COCKERTON	Contact	: Angel Tam
Address	: 999 HAY STREET PERTH WA, AUSTRALIA 6000	Address	: 26 Rigali Way Wangara WA Australia 6065
Telephone	: +61 08 6222 8222	Telephone	: +61-8-9406 1301
Project	: 12658388	Date Samples Received	: 01-May-2025 15:00
Order number	: ----	Date Analysis Commenced	: 02-May-2025
C-O-C number	: ----	Issue Date	: 14-May-2025 13:14
Sampler	: LOUISE COCKERTON		
Site	: Swan River Ferry Expansion: Swan River Monitoring		
Quote number	: EN/000		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, WA
Chris Lemaitre	Laboratory Manager (Perth)	Perth Inorganics, Wangara, WA
Daniel Fisher	Inorganics Analyst	Perth Inorganics, Wangara, WA
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Efua Wilson	Metals Chemist	Perth Inorganics, Wangara, WA
John Horwood	Organic Supervisor	Perth Organics, Wangara, WA
Sarah Ashworth	Laboratory Manager - Brisbane	Brisbane Organics, Stafford, QLD
Stephanie Tilson	Instrument Chemist	Perth Inorganics, Wangara, WA

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP131A: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: Metals LOR for sample EP2506907-001 raised due to high TDS content.
- EP231X-SUT: LOR has been raised for particular analyte "PFBA" on sample "EP2506907-001" due to matrix interference.
- EK055G (Ammonia): LOR raised for sample #1 due to possible sample matrix interference.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GHD-QC06	----	----	----	----
				Sampling date / time	29-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2506907-001	--------	--------	--------	--------
					Result	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**39600**	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		<5	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**118**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**118**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**2880**	----	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**18500**	----	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**517**	----	----	----	----
Magnesium	7439-95-4	1	mg/L		**1330**	----	----	----	----
Sodium	7440-23-5	1	mg/L		**11500**	----	----	----	----
Potassium	7440-09-7	1	mg/L		**414**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.05	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.005	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0005	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.005	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.005	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.005	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.005	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.005	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GHD-QC06	----	----	----	----
				Sampling date / time	29-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2506907-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Zinc	7440-66-6	0.005	mg/L		<0.025	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		<0.005	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		**0.013**	----	----	----	----
Silver	7440-22-4	0.001	mg/L		<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L		<0.25	----	----	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.05	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.005	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0005	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.005	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.005	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.005	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.005	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.005	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.05	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.026	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.019**	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		**0.014**	----	----	----	----
Silver	7440-22-4	0.001	mg/L		<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L		<0.26	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.05	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GHD-QC06	----	----	----	----
				Sampling date / time	29-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2506907-001	--------	--------	--------	--------
					Result	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.7**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ **Total Nitrogen as N**	----	0.1	mg/L		**0.7**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.04**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.01**	----	----	----	----
EK085M: Sulfide as S2-									
Sulfide as S2-	18496-25-8	0.1	mg/L		<0.1	----	----	----	----
EN055: Ionic Balance									
ø **Total Anions**	----	0.01	meq/L		**584**	----	----	----	----
ø **Total Cations**	----	0.01	meq/L		**646**	----	----	----	----
ø **Ionic Balance**	----	0.01	%		**5.03**	----	----	----	----
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L		**5**	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GHD-QC06	----	----	----	----
				Sampling date / time	29-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2506907-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GHD-QC06	----	----	----	----
				Sampling date / time	29-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2506907-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP090: Organotin Compounds (Soluble)									
Tributyltin	56573-85-4	2	ngSn/L		<2	----	----	----	----
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L		<0.010	----	----	----	----
alpha-BHC	319-84-6	0.010	µg/L		<0.010	----	----	----	----
beta-BHC	319-85-7	0.010	µg/L		<0.010	----	----	----	----
delta-BHC	319-86-8	0.010	µg/L		<0.010	----	----	----	----
4.4`-DDD	72-54-8	0.010	µg/L		<0.010	----	----	----	----
4.4`-DDE	72-55-9	0.010	µg/L		<0.010	----	----	----	----
4.4`-DDT	50-29-3	0.010	µg/L		<0.010	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.010	µg/L		<0.010	----	----	----	----
Dieldrin	60-57-1	0.010	µg/L		<0.010	----	----	----	----
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	----	----	----	----
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	----	----	----	----
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	----	----	----	----
^ **Endosulfan (sum)**	115-29-7	0.010	µg/L		<0.010	----	----	----	----
Endrin	72-20-8	0.010	µg/L		<0.010	----	----	----	----
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GHD-QC06	----	----	----	----
				Sampling date / time	29-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2506907-001	--------	--------	--------	--------
					Result	----	----	----	----
EP131A: Organochlorine Pesticides - Continued									
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	----	----	----	----
Heptachlor	76-44-8	0.005	µg/L		<0.005	----	----	----	----
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	----	----	----	----
gamma-BHC - (Lindane)	58-89-9	0.010	µg/L		<0.010	----	----	----	----
Methoxychlor	72-43-5	0.010	µg/L		<0.010	----	----	----	----
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	----	----	----	----
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	----	----	----	----
^ **Total Chlordane (sum)**	----	0.010	µg/L		<0.010	----	----	----	----
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.010	µg/L		<0.010	----	----	----	----
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.10	µg/L		<0.10	----	----	----	----
Aroclor 1016	12674-11-2	0.10	µg/L		<0.10	----	----	----	----
Aroclor 1221	11104-28-2	0.10	µg/L		<0.10	----	----	----	----
Aroclor 1232	11141-16-5	0.10	µg/L		<0.10	----	----	----	----
Aroclor 1242	53469-21-9	0.10	µg/L		<0.10	----	----	----	----
Aroclor 1248	12672-29-6	0.10	µg/L		<0.10	----	----	----	----
Aroclor 1254	11097-69-1	0.10	µg/L		<0.10	----	----	----	----
Aroclor 1260	11096-82-5	0.10	µg/L		<0.10	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0005	µg/L		<0.0005	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0005	µg/L		<0.0005	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0005	µg/L		**0.0026**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0005	µg/L		<0.0005	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GHD-QC06	----	----	----	----
				Sampling date / time	29-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2506907-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	µg/L		**0.0046**	----	----	----	----
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0005	µg/L		<0.0005	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0005	µg/L		<0.0005	----	----	----	----
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0020	µg/L		<0.0020	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.0020	µg/L		<0.0031	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0005	µg/L		**0.0017**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0005	µg/L		**0.0018**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0005	µg/L		**0.0009**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0005	µg/L		**0.0010**	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0005	µg/L		<0.0005	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0005	µg/L		<0.0005	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0005	µg/L		<0.0005	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0005	µg/L		<0.0005	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0005	µg/L		<0.0005	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	µg/L		<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0005	µg/L		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.001	µg/L		<0.001	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.001	µg/L		<0.001	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.001	µg/L		<0.001	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GHD-QC06	----	----	----	----
				Sampling date / time	29-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2506907-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.001	µg/L		<0.001	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0005	µg/L		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0005	µg/L		<0.0005	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.001	µg/L		<0.001	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.001	µg/L		<0.001	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.001	µg/L		<0.001	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.001	µg/L		<0.001	----	----	----	----
EP231P: PFAS Sums									
^ **Sum of PFHxS and PFOS**	355-46-4/1763-23-1	0.0002	µg/L		**0.0072**	----	----	----	----
^ **Sum of PFAS (WA DER List)**	----	0.0002	µg/L		**0.0126**	----	----	----	----
^ **Sum of PFAS**	----	0.0002	µg/L		**0.0126**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**32.8**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**74.5**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**51.6**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**98.3**	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		**47.9**	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**104**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**122**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GHD-QC06	----	----	----	----
				Sampling date / time	29-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EP2506907-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	2	%		**89.8**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**99.2**	----	----	----	----
EP090S: Organotin Surrogate									
Tripropyltin	----	5	%		**80.4**	----	----	----	----
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%		**102**	----	----	----	----
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.10	%		**98.0**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0005	%		**106**	----	----	----	----
13C8-PFOA	----	0.0005	%		**101**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	67
2-Chlorophenol-D4	93951-73-6	29	120
2.4.6-Tribromophenol	118-79-6	10	131
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	34	131
Anthracene-d10	1719-06-8	43	126
4-Terphenyl-d14	1718-51-0	41	142
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	61	141
Toluene-D8	2037-26-5	73	126
4-Bromofluorobenzene	460-00-4	60	125
EP090S: Organotin Surrogate			
Tripropyltin	----	24	116
EP131S: OC Pesticide Surrogate			
Dibromo-DDE	21655-73-2	14	166
EP131T: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	10	144
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry / Biology).

(WATER) EP090: Organotin Compounds (Soluble)

(WATER) EP090S: Organotin Surrogate

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry / Biology).

(WATER) EP131A: Organochlorine Pesticides

(WATER) EP131S: OC Pesticide Surrogate

(WATER) EP131B: Polychlorinated Biphenyls (as Aroclors)

(WATER) EP131T: PCB Surrogate

QUALITY CONTROL REPORT

Work Order	: **EP2506907**	Page	: 1 of 16
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: MS LOUISE COCKERTON	Contact	: Angel Tam
Address	: 999 HAY STREET PERTH WA, AUSTRALIA 6000	Address	: 26 Rigali Way Wangara WA Australia 6065
Telephone	: +61 08 6222 8222	Telephone	: +61-8-9406 1301
Project	: 12658388	Date Samples Received	: 01-May-2025
Order number	: ----	Date Analysis Commenced	: 02-May-2025
C-O-C number	: ----	Issue Date	: 14-May-2025
Sampler	: LOUISE COCKERTON		
Site	: Swan River Ferry Expansion: Swan River Monitoring		
Quote number	: EN/000		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, WA
Chris Lemaitre	Laboratory Manager (Perth)	Perth Inorganics, Wangara, WA
Daniel Fisher	Inorganics Analyst	Perth Inorganics, Wangara, WA
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Efua Wilson	Metals Chemist	Perth Inorganics, Wangara, WA
John Horwood	Organic Supervisor	Perth Organics, Wangara, WA
Sarah Ashworth	Laboratory Manager - Brisbane	Brisbane Organics, Stafford, QLD
Stephanie Tilson	Instrument Chemist	Perth Inorganics, Wangara, WA

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 6553746)									
EP2506890-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	7270	7310	0.5	0% - 20%
EP2506995-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	547	547	0.0	0% - 20%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 6553745)									
EP2506849-009	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EP2506894-004	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
ED037P: Alkalinity by PC Titrator (QC Lot: 6554500)									
EP2506810-002	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	185	186	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	185	186	0.0	0% - 20%
EP2506810-012	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	<1	<1	0.0	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 6549787)									
EP2506909-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	802	800	0.3	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 6549788)									
EP2506909-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	569	576	1.1	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 6558528)									
EP2506811-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	16	17	0.0	0% - 50%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
ED093F: Dissolved Major Cations (QC Lot: 6558528) - continued									
EP2506811-001	Anonymous	ED093F: Magnesium	7439-95-4	1	mg/L	24	23	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	237	231	2.3	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	54	54	0.0	0% - 20%
EP2506857-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	530	541	1.9	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	1330	1350	1.6	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	11500	11700	1.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	416	422	1.5	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 6558527)									
EP2506811-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.037	0.038	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.041	0.040	0.0	0% - 20%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.042	0.044	5.8	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.005	0.007	24.7	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.006	26.9	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.04	0.04	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EP2506969-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0003	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.071	0.070	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.061	0.061	0.0	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	2.16	2.16	0.1	0% - 20%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.009	0.009	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.044	0.044	0.0	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.022	0.022	0.0	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 6558531)									
EP2506907-001	GHD-QC06	EG020B-F: Silver	7440-22-4	0.001 (0.005) *	mg/L	<0.005	<0.005	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 6562940)									
EP2507099-001	Anonymous	EG020B-T: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
EP2507043-005	Anonymous	EG020B-T: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 6562941)									
EP2507099-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.047	0.046	0.0	0% - 20%
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.0	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.19	0.18	0.0	No Limit
EP2507043-005	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.051	0.051	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.094	0.096	2.6	0% - 20%
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.020	0.021	0.0	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.014	0.014	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.23	0.25	7.4	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.74	0.74	0.0	0% - 50%
EG035F: Dissolved Mercury by FIMS (QC Lot: 6558530)									
EP2506911-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6562962)									
EP2506855-023	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP2507104-007	Anonymous	EG035T: Mercury	7439-97-6	0.0001 (0.0002)*	mg/L	<0.0002	<0.0002	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 6549790)									
EP2506902-006	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 6549790) - continued									
EP2506907-001	GHD-QC06	EK055G: Ammonia as N	7664-41-7	0.01 (0.05)*	mg/L	<0.05	<0.05	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 6549789)									
EP2506909-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 6549791)									
EP2506902-006	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	4.21	4.29	1.9	0% - 20%
EP2506907-001	GHD-QC06	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 6557220)									
EP2506857-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1 (0.2)*	mg/L	0.3	0.3	0.0	No Limit
EP2506989-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	48.3	48.1	0.4	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 6557219)									
EP2506857-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01 (0.02)*	mg/L	<0.02	<0.02	0.0	No Limit
EP2506989-002	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.05	0.05	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 6549786)									
EP2506909-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK085M: Sulfide as S2- (QC Lot: 6550827)									
EP2506742-001	Anonymous	EK085: Sulfide as S2-	18496-25-8	0.1	mg/L	<0.1	<0.1	0.0	No Limit
EP2506854-001	Anonymous	EK085: Sulfide as S2-	18496-25-8	0.1	mg/L	0.4	0.4	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 6553611)									
EP2506995-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	4	4	0.0	No Limit
EP2506996-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	6	5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6554710)									
EP2506907-001	GHD-QC06	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6554710) - continued									
EP2506907-001	GHD-QC06	EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6551062)									
EP2506890-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP2506894-004	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6554711)									
EP2506907-001	GHD-QC06	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.0	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6551062)									
EP2506890-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP2506894-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6554711)									
EP2506907-001	GHD-QC06	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
EP080: BTEXN (QC Lot: 6551062)									
EP2506890-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP2506894-004	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6554013)									
EP2506907-001	GHD-QC06	EP231X-SUT: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	µg/L	0.0046	0.0045	0.0	0% - 20%
		EP231X-SUT: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6554013) - continued									
EP2506907-001	GHD-QC06	EP231X-SUT: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0005	µg/L	0.0026	0.0024	6.2	No Limit
		EP231X-SUT: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.002	µg/L	<0.0020	<0.0020	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6554013)									
EP2506907-001	GHD-QC06	EP231X-SUT: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0005 (0.0006)*	µg/L	0.0017	0.0015	11.9	No Limit
		EP231X-SUT: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0005	µg/L	0.0018	0.0019	0.0	No Limit
		EP231X-SUT: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0005	µg/L	0.0009	0.0010	17.8	No Limit
		EP231X-SUT: Perfluorooctanoic acid (PFOA)	335-67-1	0.0005	µg/L	0.0010	0.0011	10.0	No Limit
		EP231X-SUT: Perfluorononanoic acid (PFNA)	375-95-1	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: Perfluorodecanoic acid (PFDA)	335-76-2	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: Perfluorobutanoic acid (PFBA)	375-22-4	0.002 (0.0031)*	µg/L	<0.0031	<0.0031	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6554013)									
EP2506907-001	GHD-QC06	EP231X-SUT: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0005	µg/L	<0.0005	<0.0005	0.0	No Limit
		EP231X-SUT: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.001	µg/L	<0.001	<0.001	0.0	No Limit
		EP231X-SUT: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.001	µg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6554013) - continued									
EP2506907-001	GHD-QC06	EP231X-SUT: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.001	µg/L	<0.001	<0.001	0.0	No Limit
		EP231X-SUT: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.001	µg/L	<0.001	<0.001	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6554013)									
EP2506907-001	GHD-QC06	EP231X-SUT: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.001	µg/L	<0.001	<0.001	0.0	No Limit
		EP231X-SUT: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.001	µg/L	<0.001	<0.001	0.0	No Limit
		EP231X-SUT: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.001	µg/L	<0.001	<0.001	0.0	No Limit
		EP231X-SUT: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.001	µg/L	<0.001	<0.001	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 6554013)									
EP2506907-001	GHD-QC06	EP231X-SUT: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	µg/L	0.0072	0.0069	4.3	0% - 20%
		EP231X-SUT: Sum of PFAS (WA DER List)	----	0.0002	µg/L	0.0126	0.0124	1.6	0% - 20%
		EP231X-SUT: Sum of PFAS	----	0.0002	µg/L	0.0126	0.0124	1.6	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 6553746)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	98.8	80.0	120
				<10	293 mg/L	94.7	80.0	120
				<10	2470 mg/L	104	80.0	120
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 6553745)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	94.3	80.0	120
				<5	1000 mg/L	98.7	80.0	120
				<5	841 mg/L	101	80.0	120
ED037P: Alkalinity by PC Titrator (QCLot: 6554500)								
ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	----	----	----	----
ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	<1	20 mg/L	102	85.1	126
				<1	200 mg/L	98.8	90.5	111
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 6549787)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	99.8	89.9	112
				<1	500 mg/L	107	89.9	112
ED045G: Chloride by Discrete Analyser (QCLot: 6549788)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	96.4	88.6	113
				<1	1000 mg/L	102	88.6	113
ED093F: Dissolved Major Cations (QCLot: 6558528)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	111	86.5	117
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	100	88.4	110
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	101	91.4	113
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	98.2	84.6	108
EG020F: Dissolved Metals by ICP-MS (QCLot: 6558527)								
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	96.2	90.2	111
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.8	90.3	113
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.7	89.7	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.1	87.3	107
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	95.1	88.8	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 6558527) - continued								
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	89.8	88.9	108
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.4	89.4	106
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	92.8	87.6	106
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	102	91.1	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	92.5	87.2	108
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	87.4	83.8	102
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.6	89.5	112
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	104	89.9	120
EG020F: Dissolved Metals by ICP-MS (QCLot: 6558531)								
EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	0.02 mg/L	95.3	85.2	126
EG020T: Total Metals by ICP-MS (QCLot: 6562940)								
EG020B-T: Silver	7440-22-4	0.001	mg/L	<0.001	0.02 mg/L	110	92.5	124
EG020T: Total Metals by ICP-MS (QCLot: 6562941)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	106	91.6	114
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	105	92.6	113
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.9	91.8	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	101	90.9	109
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	100	90.5	110
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.5	90.8	110
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.7	92.3	108
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.5	90.3	109
EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	108	98.8	121
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	100	89.3	110
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	93.1	85.7	110
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.3	90.7	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	106	95.0	132
EG035F: Dissolved Mercury by FIMS (QCLot: 6558530)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.005 mg/L	94.4	85.6	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6562962)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.005 mg/L	103	83.7	120
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6549790)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	93.4	86.2	111
EK057G: Nitrite as N by Discrete Analyser (QCLot: 6549789)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	88.7	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6549791)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	102	90.5	110
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6557220)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	92.5	80.0	115
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6557219)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	87.6	70.0	110
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 6549786)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	103	89.4	109
EK085M: Sulfide as S2- (QCLot: 6550827)								
EK085: Sulfide as S2-	18496-25-8	0.1	mg/L	<0.1	0.5 mg/L	103	84.1	115
EP005: Total Organic Carbon (TOC) (QCLot: 6553611)								
EP005: Total Organic Carbon	----	1	mg/L	<1	10 mg/L	99.0	87.2	116
				<1	100 mg/L	101	87.2	116
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6554710)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	67.6	41.9	99.1
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	68.5	36.1	113
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	52.9	35.8	102
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	61.2	33.5	113
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	65.2	36.5	115
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	72.6	46.4	109
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	69.9	40.4	124
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	70.1	40.2	123
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	52.8	40.2	126
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	63.1	45.6	121
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	61.2	43.2	123
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	71.3	47.3	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	62.4	44.8	123
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	56.1	38.8	120
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	63.3	39.4	119
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	61.0	40.1	123
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6551062)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	96.2	73.6	113
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6554711)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6554711) - continued								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	6382 µg/L	79.2	39.3	103
EP071: C15 - C28 Fraction	----	100	µg/L	<100	10210 µg/L	88.9	47.2	122
EP071: C29 - C36 Fraction	----	50	µg/L	<50	1761 µg/L	90.6	42.5	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6551062)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	96.4	73.9	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6554711)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	8358 µg/L	83.6	47.0	100
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	9121 µg/L	89.6	46.2	116
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	567 µg/L	93.6	24.7	137
EP080: BTEXN (QCLot: 6551062)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.9	84.1	114
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	95.6	81.0	115
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	95.2	84.4	113
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	95.6	84.3	114
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	96.2	86.5	111
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	93.4	77.0	118
EP090: Organotin Compounds (Soluble) (QCLot: 6554699)								
EP090S: Tributyltin	56573-85-4	2	ngSn/L	<2	147 ngSn/L	75.6	30.7	134
EP131A: Organochlorine Pesticides (QCLot: 6570195)								
EP131A: Aldrin	309-00-2	0.01	µg/L	<0.010	1.1 µg/L	78.6	34.0	145
EP131A: alpha-BHC	319-84-6	0.01	µg/L	<0.010	1.1 µg/L	111	27.2	131
EP131A: beta-BHC	319-85-7	0.01	µg/L	<0.010	1.1 µg/L	104	28.6	133
EP131A: delta-BHC	319-86-8	0.01	µg/L	<0.010	1.1 µg/L	99.2	36.0	131
EP131A: 4.4`-DDD	72-54-8	0.01	µg/L	<0.010	1.1 µg/L	112	36.0	142
EP131A: 4.4`-DDE	72-55-9	0.01	µg/L	<0.010	1.1 µg/L	105	30.4	112
EP131A: 4.4`-DDT	50-29-3	0.01	µg/L	<0.010	1.1 µg/L	67.4	29.5	142
EP131A: Dieldrin	60-57-1	0.01	µg/L	<0.010	1.1 µg/L	110	28.1	122
EP131A: alpha-Endosulfan	959-98-8	0.01	µg/L	<0.010	1.1 µg/L	106	34.0	119
EP131A: beta-Endosulfan	33213-65-9	0.01	µg/L	<0.010	1.1 µg/L	92.4	31.6	128
EP131A: Endosulfan sulfate	1031-07-8	0.01	µg/L	<0.010	1.1 µg/L	74.5	35.0	159
EP131A: Endrin	72-20-8	0.01	µg/L	<0.010	1.1 µg/L	101	21.5	165
EP131A: Endosulfan (sum)	115-29-7	0.01	µg/L	<0.010	----	----	----	----
EP131A: Endrin aldehyde	7421-93-4	0.01	µg/L	<0.010	1.1 µg/L	100	22.7	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP131A: Organochlorine Pesticides (QCLot: 6570195) - continued								
EP131A: Endrin ketone	53494-70-5	0.01	µg/L	<0.010	1.1 µg/L	106	16.3	144
EP131A: Heptachlor	76-44-8	0.005	µg/L	<0.005	1.1 µg/L	107	33.0	160
EP131A: Heptachlor epoxide	1024-57-3	0.01	µg/L	<0.010	1.1 µg/L	95.8	33.0	117
EP131A: Hexachlorobenzene (HCB)	118-74-1	0.01	µg/L	<0.010	1.1 µg/L	113	23.6	126
EP131A: gamma-BHC - (Lindane)	58-89-9	0.01	µg/L	<0.010	1.1 µg/L	109	28.7	134
EP131A: Methoxychlor	72-43-5	0.01	µg/L	<0.010	1.1 µg/L	109	29.5	150
EP131A: cis-Chlordane	5103-71-9	0.01	µg/L	<0.010	1.1 µg/L	98.9	27.0	116
EP131A: trans-Chlordane	5103-74-2	0.01	µg/L	<0.010	1.1 µg/L	97.3	31.2	119
EP131A: Total Chlordane (sum)	----	0.01	µg/L	<0.010	----	----	----	----
EP131A: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.01	µg/L	<0.010	----	----	----	----
EP131B: Polychlorinated Biphenyls (as Aroclors) (QCLot: 6570194)								
EP131B: Total Polychlorinated biphenyls	----	0.1	µg/L	<0.10	----	----	----	----
EP131B: Aroclor 1254	11097-69-1	----	µg/L	----	1 µg/L	108	51.0	133
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6554013)								
EP231X-SUT: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.002	µg/L	<0.0020	0.00367 µg/L	108	70.0	130
EP231X-SUT: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0005	µg/L	<0.0005	0.00354 µg/L	95.4	72.0	130
EP231X-SUT: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0005	µg/L	<0.0005	0.00376 µg/L	107	71.0	127
EP231X-SUT: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0005	µg/L	<0.0005	0.00381 µg/L	94.9	68.0	131
EP231X-SUT: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0005	µg/L	<0.0005	0.00381 µg/L	99.1	69.0	134
EP231X-SUT: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	µg/L	<0.0002	0.00371 µg/L	100	65.0	140
EP231X-SUT: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0005	µg/L	<0.0005	0.00384 µg/L	94.2	70.0	130
EP231X-SUT: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0005	µg/L	<0.0005	0.00385 µg/L	87.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6554013)								
EP231X-SUT: Perfluorobutanoic acid (PFBA)	375-22-4	0.002	µg/L	<0.0020	0.02 µg/L	97.7	73.0	129
EP231X-SUT: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0005	µg/L	<0.0005	0.004 µg/L	100	72.0	129
EP231X-SUT: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0005	µg/L	<0.0005	0.004 µg/L	95.6	72.0	129
EP231X-SUT: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0005	µg/L	<0.0005	0.004 µg/L	102	72.0	130
EP231X-SUT: Perfluorooctanoic acid (PFOA)	335-67-1	0.0005	µg/L	<0.0005	0.004 µg/L	96.8	71.0	133
EP231X-SUT: Perfluorononanoic acid (PFNA)	375-95-1	0.0005	µg/L	<0.0005	0.004 µg/L	100	69.0	130
EP231X-SUT: Perfluorodecanoic acid (PFDA)	335-76-2	0.0005	µg/L	<0.0005	0.004 µg/L	104	71.0	129
EP231X-SUT: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0005	µg/L	<0.0005	0.004 µg/L	104	69.0	133
EP231X-SUT: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0005	µg/L	<0.0005	0.004 µg/L	98.0	72.0	134
EP231X-SUT: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0005	µg/L	<0.0005	0.004 µg/L	101	65.0	144

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6554013) - continued								
EP231X-SUT: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	µg/L	<0.0005	0.004 µg/L	95.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6554013)								
EP231X-SUT: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0005	µg/L	<0.0005	0.004 µg/L	108	67.0	137
EP231X-SUT: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.001	µg/L	<0.001	0.01 µg/L	116	68.0	141
EP231X-SUT: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.001	µg/L	<0.001	0.01 µg/L	106	57.9	141
EP231X-SUT: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.001	µg/L	<0.001	0.01 µg/L	93.6	63.3	134
EP231X-SUT: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.001	µg/L	<0.001	0.01 µg/L	106	60.0	136
EP231X-SUT: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0005	µg/L	<0.0005	0.004 µg/L	94.0	65.0	136
EP231X-SUT: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0005	µg/L	<0.0005	0.004 µg/L	90.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6554013)								
EP231X-SUT: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.001	µg/L	<0.001	0.00374 µg/L	98.8	63.0	143
EP231X-SUT: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.001	µg/L	<0.001	0.0038 µg/L	104	64.0	140
EP231X-SUT: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.001	µg/L	<0.001	0.00384 µg/L	100	67.0	138
EP231X-SUT: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.001	µg/L	<0.001	0.00386 µg/L	93.3	53.1	133

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 6549787)							
EP2506907-001	GHD-QC06	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	100 mg/L	# Not Determined	70.4	130
ED045G: Chloride by Discrete Analyser (QCLot: 6549788)							
EP2506907-001	GHD-QC06	ED045G: Chloride	16887-00-6	200 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 6558527)							
EP2506811-002	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	112	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	105	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EG020F: Dissolved Metals by ICP-MS (QCLot: 6558527) - continued							
EP2506811-002	Anonymous	EG020A-F: Chromium	7440-47-3	0.2 mg/L	103	70.0	130
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	107	70.0	130
		EG020A-F: Copper	7440-50-8	0.2 mg/L	104	70.0	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	101	70.0	130
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	101	70.0	130
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	103	70.0	130
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	110	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 6562941)							
EP2506855-024	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	101	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.4	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	101	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	99.8	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	99.1	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	103	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	100	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	100	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	89.2	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 6558530)							
EP2506911-002	Anonymous	EG035F: Mercury	7439-97-6	0.005 mg/L	110	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6562962)							
EP2506861-019	Anonymous	EG035T: Mercury	7439-97-6	0.005 mg/L	117	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6549790)							
EP2506902-003	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	115	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 6549789)							
EP2506907-001	GHD-QC06	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	111	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6549791)							
EP2506902-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6557220)							
EP2506857-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	10 mg/L	73.8	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6557219)							
EP2506857-002	Anonymous	EK067G: Total Phosphorus as P	----	2 mg/L	96.8	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 6549786)							
EP2506907-001	GHD-QC06	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	113	70.0	130
EK085M: Sulfide as S2- (QCLot: 6550827)							
EP2506796-001	Anonymous	EK085: Sulfide as S2-	18496-25-8	1 mg/L	100	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP005: Total Organic Carbon (TOC) (QCLot: 6553611)							
EP2506743-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	96.7	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6551062)							
EP2506890-002	Anonymous	EP080: C6 - C9 Fraction	----	240 µg/L	109	77.0	137
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6551062)							
EP2506890-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	290 µg/L	111	77.0	137
EP080: BTEXN (QCLot: 6551062)							
EP2506890-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	106	77.0	122
		EP080: Toluene	108-88-3	20 µg/L	115	73.5	126

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EP2506907**	Page	: 1 of 12
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: MS LOUISE COCKERTON	Telephone	: +61-8-9406 1301
Project	: 12658388	Date Samples Received	: 01-May-2025
Site	: Swan River Ferry Expansion: Swan River Monitoring	Issue Date	: 14-May-2025
Sampler	: LOUISE COCKERTON	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EP2506907--001	GHD-QC06	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	EP2506907--001	GHD-QC06	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	EP2506902--003	Anonymous	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EK057G: Nitrite as N by Discrete Analyser						
Clear Plastic Bottle - Natural						
GHD-QC06	----	----	----	03-May-2025	01-May-2025	**2**
EK071G: Reactive Phosphorus as P by discrete analyser						
Clear Plastic Bottle - Natural						
GHD-QC06	----	----	----	03-May-2025	01-May-2025	**2**
EP131A: Organochlorine Pesticides						
Amber Glass Bottle - Unpreserved						
GHD-QC06	13-May-2025	06-May-2025	**7**	----	----	----
EP131B: Polychlorinated Biphenyls (as Aroclors)						
Amber Glass Bottle - Unpreserved						
GHD-QC06	13-May-2025	06-May-2025	**7**	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Analytical Methods	Method	Count		Rate (%)		Quality Control Specification
		QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Organochlorine Pesticides (Ultra-trace)	EP131A	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Organotin Compounds (Soluble)	EP090S	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	EP131B	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Organochlorine Pesticides (Ultra-trace)	EP131A	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Organotin Compounds (Soluble)	EP090S	0	8	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Matrix Spikes (MS) - Continued						
PCB's (Ultra-trace)	EP131B	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-SUT	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

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

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H) GHD-QC06	**29-Apr-2025**	**----**	----	**----**	**06-May-2025**	06-May-2025	✓
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H) GHD-QC06	**29-Apr-2025**	**----**	----	**----**	**06-May-2025**	06-May-2025	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) GHD-QC06	**29-Apr-2025**	**----**	----	**----**	**06-May-2025**	13-May-2025	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) GHD-QC06	**29-Apr-2025**	**----**	----	**----**	**03-May-2025**	27-May-2025	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) GHD-QC06	**29-Apr-2025**	**----**	----	**----**	**03-May-2025**	27-May-2025	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Filtered; Lab-acidified (ED093F) GHD-QC06	**29-Apr-2025**	**----**	----	**----**	**08-May-2025**	27-May-2025	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG020B-F) GHD-QC06	**29-Apr-2025**	**----**	----	**----**	**08-May-2025**	26-Oct-2025	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG020B-T) GHD-QC06	**29-Apr-2025**	**12-May-2025**	26-Oct-2025	✓	**12-May-2025**	26-Oct-2025	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
GHD-QC06	29-Apr-2025	----	----	----	08-May-2025	27-May-2025	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
GHD-QC06	29-Apr-2025	----	----	----	12-May-2025	27-May-2025	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
GHD-QC06	29-Apr-2025	----	----	----	02-May-2025	27-May-2025	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
GHD-QC06	29-Apr-2025	----	----	----	03-May-2025	01-May-2025	×
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
GHD-QC06	29-Apr-2025	----	----	----	02-May-2025	27-May-2025	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
GHD-QC06	29-Apr-2025	12-May-2025	27-May-2025	✓	12-May-2025	27-May-2025	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
GHD-QC06	29-Apr-2025	12-May-2025	27-May-2025	✓	12-May-2025	27-May-2025	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
GHD-QC06	29-Apr-2025	----	----	----	03-May-2025	01-May-2025	×
EK085M: Sulfide as S2-							
Clear Plastic Bottle - Zinc Acetate/NaOH (EK085)							
GHD-QC06	29-Apr-2025	----	----	----	05-May-2025	06-May-2025	✓
EP005: Total Organic Carbon (TOC)							
Amber TOC Vial - Sulfuric Acid (EP005)							
GHD-QC06	29-Apr-2025	----	----	----	06-May-2025	27-May-2025	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
GHD-QC06	29-Apr-2025	06-May-2025	06-May-2025	✓	10-May-2025	15-Jun-2025	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
GHD-QC06	29-Apr-2025	06-May-2025	06-May-2025	✓	09-May-2025	15-Jun-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
GHD-QC06	29-Apr-2025	05-May-2025	13-May-2025	✓	06-May-2025	13-May-2025	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
GHD-QC06	**29-Apr-2025**	**06-May-2025**	06-May-2025	✓	**09-May-2025**	15-Jun-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
GHD-QC06	**29-Apr-2025**	**05-May-2025**	13-May-2025	✓	**06-May-2025**	13-May-2025	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
GHD-QC06	**29-Apr-2025**	**05-May-2025**	13-May-2025	✓	**06-May-2025**	13-May-2025	✓
EP090: Organotin Compounds (Soluble)							
Amber Glass Bottle - Unpreserved (EP090S)							
GHD-QC06	**29-Apr-2025**	**06-May-2025**	06-May-2025	✓	**08-May-2025**	15-Jun-2025	✓
EP131A: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP131A)							
GHD-QC06	**29-Apr-2025**	**13-May-2025**	06-May-2025	×	**13-May-2025**	22-Jun-2025	✓
EP131B: Polychlorinated Biphenyls (as Aroclors)							
Amber Glass Bottle - Unpreserved (EP131B)							
GHD-QC06	**29-Apr-2025**	**13-May-2025**	06-May-2025	×	**13-May-2025**	22-Jun-2025	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X-SUT)							
GHD-QC06	**29-Apr-2025**	**06-May-2025**	26-Oct-2025	✓	**07-May-2025**	26-Oct-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X-SUT)							
GHD-QC06	**29-Apr-2025**	**06-May-2025**	26-Oct-2025	✓	**07-May-2025**	26-Oct-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X-SUT)							
GHD-QC06	**29-Apr-2025**	**06-May-2025**	26-Oct-2025	✓	**07-May-2025**	26-Oct-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X-SUT)							
GHD-QC06	**29-Apr-2025**	**06-May-2025**	26-Oct-2025	✓	**07-May-2025**	26-Oct-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X-SUT)							
GHD-QC06	**29-Apr-2025**	**06-May-2025**	26-Oct-2025	✓	**07-May-2025**	26-Oct-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	9	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	1	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	0	3	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Organotin Compounds (Soluble)	EP090S	0	8	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	EP131B	0	3	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-SUT	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfide as S2-	EK085	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	2	9	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	1	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	6	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Nitrite as N by Discrete Analyser	EK057G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organotin Compounds (Soluble)	EP090S	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	EP131B	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-SUT	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	6	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfide as S2-	EK085	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	3	16	**18.75**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	13	**23.08**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Alkalinity by Auto Titrator	ED037-P	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organotin Compounds (Soluble)	EP090S	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	EP131B	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-SUT	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfide as S2-	EK085	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Organotin Compounds (Soluble)	EP090S	0	8	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace)	EP131B	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-SUT	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfide as S2-	EK085	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Metals by ICP-MS - Suite B	EG020B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.

Analytical Methods	Method	Matrix	Method Descriptions
Total Metals by ICP-MS - Suite B	EG020B-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Sulfide as S2-	EK085	WATER	In house: Referenced to APHA 4500-S2- D. Sulfide species present in water samples are immediately precipitated when collected in pretreated caustic/zinc acetate preserved sample containers. The sulfides are coloured using methylene blue indicator. Non-detects may be screened by comparison against a standard at half-LOR, otherwise samples are measured using UV-VIS detection at 664nm. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030E. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Organotin Compounds (Soluble)	EP090S	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by GC/MS coupled with high volume injection and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Organochlorine Pesticides (Ultra-trace)	EP131A	WATER	In house: Referenced to USEPA Method 3640 (GPC cleanup),3620 (Florisil), 8081/8082 (GC/µECD/uECD). This method is compliant with NEPM Schedule B(3)
PCB's (Ultra-trace)	EP131B	WATER	In house: Referenced to USEPA Method 3640 (GPC cleanup), 3620 (Florisil), 8081/8082 (GC/µECD/µECD). This method is compliant with NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-SUT	WATER	In-house: Analysis of fresh and saline waters by solid phase extraction (SPE) followed by negative mode LC-ESI-MS/MS using MRM and isotope dilution or internal standard quantitation. Isotope dilution standards (where commercially available) and surrogates are added to the sample container. The entire contents are transferred to a weak anion exchange (WAX) solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Data quality objectives for internal standard recoveries are based on US EPA method 1633.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction of Liquids (Ultra-trace pesticides.)	ORG14-UTP	WATER	In house: Referenced to USEPA 3510 Samples are extracted into dichloromethane, concentrated and exchanged into an apporpriate solvent for GPC and florisil cleanup as required. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Organotin Sample Preparation	ORG34	WATER	In house. A specified volume of sample is spiked with surrogate, acidified and vacuum filtered. Reagents and solvent are added and the mixture tumbled. The butyltin compounds is derivitisated, extracted and the subtitution reaction completed. The extract is transferred to a separatory funnel and further extracted two times with petroleum ether. The resultant extracts are combined and concentrated for analysis.
Solid Phase Extraction (SPE) for PFAS in water	* ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

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