Preliminary and Detailed Site Investigation

20 & 20A Cantwell Road, Lochinvar NSW

NEW24P-0120-AA
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Executive Summary

Qualtest Laboratory NSW Pty Ltd (Qualtest) has carried out a Preliminary and Detailed Site Investigation (PDSI) on behalf of Trustee of the Roman Catholic Church for the Diocese of Maitland Newcastle, c/- Monteath & Powys (M&P), for the site located at 20 and 20A Cantwell Road, Lochinvar NSW (the Site). The site location is shown on Figure 1, Appendix A.

The site covers an area of approximately 14.57ha and comprises Lot 1 and Lot 2 DP 1299958. The site is currently zoned R1 General Residential, with Lochinvar Creek, located in the centre of the site, zoned E3 Environmental Management. It is understood that M&P require a Preliminary & Detailed Site Investigation to support the Development Application (DA) submission to Maitland City Council.

The objectives of the PDSI were to:

- Provide an assessment of the likelihood for contamination to be present on the site from past uses and activities;
- Assess whether soil contamination is present; and,
- Provide recommendations on the need for further assessment, and remediation or management (if required).

In order to achieve the above objective, Qualtest carried out the following scope:

- Desktop study and site history review, and site walkover;
- Collection of soil samples from eight test pit locations from across the site; and collection of two sediment samples (SED1 & SED2) and two surface water samples (WS1 and WS2) from Lochinvar Creek, located in the centre of the site;
- Laboratory analysis of soil, sediment and surface water samples from a suite of common contaminants; and,
- Data assessment and preparation of a Preliminary and Detailed Site Investigation Report.

The site history review showed that the site has consisted of cleared vacant/farming land (most likely livestock grazing) with scattered trees and Lochinvar Creek running through the centre of the site from at least the 1970's to the present day. The historical title search indicated that the site has been owned by property trusts associated with churches (Church of England and Catholic Diocese) from 1886 until the present day.

One AEC was identified for the site:

1. Imported Fill - Potential use of contaminated imported fill.

To assess whether contamination was present, eight test pit locations were sampled, targeting the identified AEC and providing a spread across the site. Two sediment and two surface water samples were also collected.

The laboratory results showed concentrations of contaminants below the adopted criteria, with the exception of zinc slightly exceeding the ecological criteria in one sediment sample, and chromium, copper and zinc exceeding the aquatic ecosystem criteria in two surface water samples.

As the zinc EIL exceedance was minor, and the downstream sample was below the adopted criteria, it is likely the elevated zinc concentrations are localised. There was no evidence of vegetation distress. Based on this, it is considered that the zinc EIL exceedance does not pose a risk to plants and wildlife. Therefore, further assessment or remediation in this area is not considered warranted, and would likely have a net adverse environmental impact.

Chromium copper and zinc were detected above the adopted criteria for aquatic ecosystems in each surface water sample. As these metals were detected in both up- and down-stream water samples, and at relatively low concentrations, it is considered that these concentrations are likely reflective of regional background water quality. Therefore, further assessment of surface water area is not considered warranted.

The Conceptual Site Model (CSM) indicated that exposure pathways were incomplete for current and future site users, construction/maintenance workers, and ecological receptors as no contamination was identified, or exceedances were minor and localised or reflective of background conditions.

Based on the results of the Preliminary and Detailed Site Investigation it is considered the site is suitable for the proposed development.

This report was prepared in general accordance with the relevant sections of the NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013, Canberra (referred to as ASC NEPM 2013). This report comprises a stage 1 preliminary site investigation and stage 2 detailed site investigation as described by State Environmental Planning Policy (Resilience and Hazards) 2021 Chapter 4.

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1.0 Introduction

Qualtest Laboratory NSW Pty Ltd (Qualtest) has carried out a Preliminary and Detailed Site Investigation (PDSI) on behalf of Trustee of the Roman Catholic Church for the Diocese of Maitland Newcastle, c/- Monteath & Powys (M&P), for the site located at 20 and 20A Cantwell Road, Lochinvar NSW (the Site). The site location is shown on Figure 1, Appendix A.

The site covers an area of approximately 14.57ha and comprises Lot 1 and Lot 2 DP 1299958. The site is currently zoned R1 General Residential, with Lochinvar Creek, located in the centre of the site, zoned E3 Environmental Management. It is understood that M&P require a Preliminary & Detailed Site Investigation to support the Development Application (DA) submission to Maitland City Council.

This report was prepared in general accordance with the relevant sections of the NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013, Canberra (referred to as ASC NEPM 2013). This report comprises a stage 1 preliminary site investigation and stage 2 detailed site investigation as described by State Environmental Planning Policy (Resilience and Hazards) 2021 Chapter 4.

1.1 Objectives

The objectives of the PDSI were to:

- Provide an assessment of the likelihood for contamination to be present on the site from past uses and activities;
- Assess whether soil contamination is present; and,
- Provide recommendations on the need for further assessment, and remediation or management (if required).

1.2 Scope of Works

In order to achieve the above objective, Qualtest carried out the following scope:

- Desktop study and site history review, and site walkover;
- Collection of soil samples from eight test pit locations from across the site; and collection of two sediment samples (SED1 & SED2) and two surface water samples (WS1 and WS2) from Lochinvar Creek, located in the centre of the site;
- Laboratory analysis of soil, sediment and surface water samples from a suite of common contaminants; and,
- Data assessment and preparation of a Preliminary and Detailed Site Investigation Report.

2.0 Site Description

2.1 Site Identification

General site information is provided below in Table 2.1. The site location is shown in Figure 1, Appendix A.

Table 2.1: Summary of Site Details

Site Address:	20 & 20A Cantwell Road, Lochinvar NSW
Approximate site area and dimensions:	Approx. 14.57 ha Approx. 420m long by 450m wide at its longest and widest points
Title Identification Details:	Lot 1 and Lot 2 DP1299958, within the Maitland local government area, Parish of Gosforth, County of Northumberland
Current Zoning	R1 General Residential, with a tributary of Lochinvar Creek zoned E3 Environmental Management
Current Ownership:	Trustees of Church Property for the Diocese of Newcastle
Current Occupier:	Vacant land
Previous and Current Landuse:	Vacant land
Proposed Landuse:	Residential development
Adjoining Site Uses:	Vacant land to the north and east, rural residential to the west and St Joseph's College (school) and vacant land to the south
Site Coordinates for approximately middle of site:	32°41'43.08 S 151°27'28.32 E

2.2 Topography and Drainage

Reference to the NSW Land and Property Information Spatial Information Exchange website (https://six.nsw.gov.au/wps/portal/) indicated the elevation of the site was between 20m and 40m AHD.

During the site investigation the eastern half of the site was observed to slope down to the west and south-west into Lochinvar Creek located in the central portion of the site. The western half of the site was observed to be relatively flat, sloping slightly to the east into Lochinvar Creek.

The ground surface consisted of grass. Rain falling on the site would be expected to infiltrate into the site surface. Excess surface water was expected to follow the site topography, and flow into Lochinvar Creek located in the central portion of the site. Lochinvar Creek would likely flow to the north of the site and discharge into the Hunter River located approximately 2.5km north of the site.

2.3 Regional Geology

Reference to the 1:100,000 Newcastle Coalfields Regional Geology map indicates that the site is underlain by Dalwood Group, Lochinvar Formation, consisting of "basalt, siltstone, sandstone".

2.4 Hydrogeology

Groundwater beneath the site is anticipated to be present in a semi-confined aquifer within residual soils and/or weathered rock. Groundwater is expected to be greater than 3m below ground surface (bgs). Groundwater flow direction is anticipated to flow north, eventually discharging into the Hunter River located approximately 2.5km north of the site.

It should be noted that groundwater conditions can vary due to rainfall and other influences including regional groundwater flow, temperature, permeability, recharge areas, surface condition, and subsoil drainage.

A search of the NSW Department of Primary Industries (Office of Water) registered groundwater bores located within a 500m radius of the site was undertaken. The search revealed that there was one bore located within this radius. A copy of the search is provided in Appendix B.

Bore ID	Installation Date	Purpose	Approx. Distance and Gradient from Site	Water Bearing Zones (mbgs)
GW060900	1/03/1985	Stock, Domestic	Adjacent to NW corner of the site, down-gradient	4.20 – 4.90 10.00 – 10.70 13.40 – 13.70

Notes: NK – not known; N – North, E – East, S – South, W - West

2.5 Acid Sulfate Soils

Reference to the Acid Sulfate Soil online database from State of NSW and Department of Planning, Industry and Environment, 2021(https://espade.environment.nsw.gov.au) the site is located within an area of "no known occurrence" of acid sulfate soils (ASS).

Based on the Maitland Local Environmental Plan (LEP), 2011 the site is located within a Class 5 for ASS. The LEP defines Class 5 as requiring development consent based on the following works; "*Works within 500m of adjacent Class 1, 2, 3, or 4 land that is below 5 metres Australian Height Datum and by which the water table is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.*"

3.0 Site History Review

A site history review was undertaken as part of the PDSI, and included:

- A review of historical ownership of the site (Lot 1 and 2 DP1299958);
- A review of aerial photography from the past 52 years;
- A review of Section 10.7 Certificate for Lot 2 DP1299958 from Maitland City Council;
- Search of the NSW EPA's list of contaminated sites relevant to the site and nearby properties; and
- A site walkover to help identify current and previous activities carried out on the site, identify surrounding land uses, and assess Areas of Environmental Concern (AECs) and Chemicals of Potential Concern (COPCs).

The information provided from the above reviews is summarised in the sections below.

3.1 Historical Titles Search

A search of historical titles for Lot 2 DP1299958 was undertaken by Advanced Legal Searchers Pty Ltd. A list of past registered proprietors for Lot 2 DP1299958 dating back to 1886, was obtained. The results of the search are included in Appendix C and presented below in Table 3.1.

Table 3.1: Summary of Historical Titles

Date	Owner
2022 – to date	The Trustees of the Roman Catholic Church for the Diocese of Maitland-Newcastle
1992 – 2022	Trustees of Church Property for the Diocese of Newcastle
1886 – 1992	The Church of England Property Trust Diocese of Newcastle

The site has been owned by the Church of England Property Trust Diocese of Newcastle from 1886 until 2022 then The Trustees of the Roman Catholic Church for the Diocese of Maitland-Newcastle until the present day.

3.2 Aerial Photograph Review

Aerial photographs of the site from 1971, 1976, 1987 and 1993 were obtained from the NSW Government Spatial Portal (https://portal.spatial.nsw.gov.au/), and satellite images from Google Earth for 2006, 2014 and 2023, were assessed by a Qualtest Environmental Scientist. No photographs earlier than 1971 were available. The results of the aerial photograph review are summarised below in Table 3.2. The aerial photographs are presented in Appendix D.

Table 3.2: Aerial Photograph Review

Year	Site	Surrounding Land
1971	The site appears to be vacant cleared land. A creek can be observed running in a north-south direction in the central portion of the site.	The surrounding area appears to be mostly vacant cleared land. The school (St Josephs College) can be observed to the immediate south of the site. Rural residential/residential dwellings are present south of the school. Cantwell Road is present to the east of the site and appears unpaved.
1976	The site appears relatively similar to the 1971 aerial photograph.	Slight increase in housing density appears to have occurred to the south and south-west.
1987	The site appears relatively similar to the 1976 aerial photograph.	A rural residential dwelling has been constructed to the west of the site. Housing density has increased to the south and south-west. The remaining surrounding area appears similar to the 1971 aerial photograph.

1993	The site appears relatively similar to the 1987 aerial photograph.	Slight increase in housing density to the south-west. The school to the south of the site appears to have potentially undergone some renovations/additions. The remaining surrounding area appears similar to the 1987 aerial photograph.
2006	There appears to be some minor land disturbance in the southern portion of the site associated with a new fence and small driveway running from the south western corner of the site in a north east direction to the central south of the site. The remainder of the site appears relatively similar to the 1993 aerial photograph.	Additional rural residential dwellings have been constructed to the west. Some land disturbance can also be observed to the west. Increase in housing density to the south-west. The remaining surrounding area appears similar to the 1993 aerial photograph.
2014	Land disturbance in the southern portion of the site is no longer present and the fence has been removed.	A shed/dwelling has been constructed adjacent to the north west corner of the site. An additional building and car parking has been constructed for the school, located to the south of the site. The remaining surrounding area appears similar to the 2006 aerial photograph.
2023	The site appears relatively similar to the 2014 aerial photograph.	The surrounding area appears similar to the 2014 aerial photograph.

3.3 Site Observations

A Qualtest Environmental Scientist visited the site on 13 June 2024. Selected site photographs are presented in Appendix E. The location of site features is shown on Figure 2, Appendix A. A summary of the site features is outlined below:

- The site consisted of mostly cleared land, with well-maintained grass used for stock (cattle) grazing. Several small to medium sized trees were observed in the central portion of the site along the banks of Lochinvar Creek (see photographs 1 to 3).
- Lochinvar Creek was observed running in an approximate north-south direction in the central portion of the site. The creek was observed to have stagnant water to a maximum depth of 0.5m. The creek was observed to be heavily vegetated (see photographs 4 to 5).
- Some concrete and bricks were observed in the central portion of Lochinvar Creek, likely used for a stock crossing (see photograph 6).
- Some ballast rock was observed in southern portion of Lochinvar Creek, likely used for erosion protection (see photograph 7).

3.4 NSW EPA Records & Environment Protection Licenses

Contaminated Land Records

A search of the NSW EPA database of notices issued under the Contaminated Land Management Act, 1997 (CLM Act) revealed there were two properties within the Maitland City Council Area:

- Former Gasworks Site, Corner of Melbourne Street and Brisbane Street, East Maitland - located >10km south-east of the site; and,
- Maitland Gasworks, Charles Street, Maitland – located >10km south-east of the site.

Based on the distance of the site from the above properties (greater than 10km) the risk of the above properties impacting the site is considered to be low.

A search of sites that have been notified to NSW EPA as contaminated (as of 11 June 2024) was also carried out. The search identified no properties within the Lochinvar suburb which had been notified to the NSW EPA as being contaminated.

A copy of the above searches are provided in Appendix F.

Penalty Notices

The Protection of the Environment Operations (POEO) register under Section 308 of the POEO Act 1997, was searched for Penalty Notices for the suburb of Lochinvar, NSW. The search identified no properties within the Lochinvar suburb which had Penalty Notices (current and/or former) issued.

A copy of the above search is provided in Appendix F.

Environment Protection Licenses (EPLs)

The Protection of the Environment Operations (POEO) register under Section 308 of the POEO Act 1997, was searched for Environment Protection Licenses (EPLs) for the suburb of Lochinvar, NSW. The search revealed no properties within the Lochinvar suburb which had current and/or former EPLs.

A copy of the above search is provided in Appendix F.

NSW EPA PFAS Investigation Program

Based on a review of the NSW EPA Government PFAS Investigation Program (ref: https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program), there are no properties in the suburb of Lochinvar that have been identified as a site that is likely to have used large quantities of PFAS.

A copy of the above searches is provided in Appendix F.

NSW EPA Former Gasworks Sites

Based on a review of the NSW EPA website (ref: https://www.epa.nsw.gov.au/your-environment/contaminated-land/other-contamination-issues/former-gasworks-sites), no former gasworks have been identified in the suburb of Lochinvar.

A copy of the above searches is provided in Appendix F.

3.5 Anecdotal Information

No one familiar with the history of the site was available to provide anecdotal information.

3.6 Section 10.7 Certificate

A Section 10.7 Certificate for Lot 2 DP1299958 of the site was obtained from Maitland City Council, and is presented in Appendix G. In relation to contaminated land, the Section 10.7 Certificate states that:

Table 3.3 - Summary of Section 10.7 Certificate for Lot 2 DP1299958

Zoning	*C3 Environmental Management*
Loose-fill Asbestos Insulation	*There are no premises on the subject land listed on the register.*
Contaminated Land Information	***The following matters are prescribed by section 59(2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate.*** ***Contaminated Land*** *The land to which this certificate relates is NOT significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.* *The land to which this certificate relates is NOT subject to a management order within the meaning of the Contaminated Land Management Act 1997.* *The land to which this certificate relates is NOT the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.* *The land to which this certificate relates is NOT the subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.* *Council has NOT been provided with a site audit statement, within the meaning of the Contaminated Land Management Act 1997, for the land to which this Certificate relates.*
Potential acid sulfate soils	*All land within the Maitland Local Government Area has the potential to contain acid sulfate soils. Clause 7.1 of the Maitland Local Environmental Plan 2011 generally applies. Development consent is required where works described in the Table to this clause are proposed on land shown on the Maitland LEP 2011 Acid Sulfate Soils Map as being of the class specified for those works.* Based on the Maitland Local Environmental Plan (LEP), 2011 the site is located within a Class 5 for ASS. The LEP defines Class 5 as requiring development consent based on the following works; "*Works within 500m of adjacent Class 1, 2, 3, or 4 land that is below 5 metres Australian Height Datum and by which the water table is likely to be lowered below 1*

	metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land."

3.7 Previous Reports

Qualtest has not been provided with, or been made aware of any previous contamination assessments conducted on the site.

3.8 Summary of Site History

The site history review showed:

- The historical title search indicated that the site has been owned by the Church of England Property Trust Diocese of Newcastle from 1886 until 2022 then The Trustees of the Roman Catholic Church for the Diocese of Maitland-Newcastle until the present day;
- Based on historical aerial review, the site has been vacant land (most likely livestock grazing) from the 1970's and remains vacant land (used for livestock grazing) to the present day. Lochinvar Creek is present in the centre of the site; and
- During the site walkover small amounts of concrete and brick were observed in the central portion of Lochinvar Creek and some ballast rock was observed in southern portion of Lochinvar Creek. The fill material was likely placed for erosion protection and livestock crossings.

3.9 Potential Offsite Sources of Contamination

The surrounding land uses comprise a school, residential and vacant/farmland. It is considered unlikely that contamination would affect the site as a result of surrounding land uses and activities.

3.10 Gaps in the Site History

Whilst the site history is reasonably comprehensive there are some gaps identified in the review as follows:

- The origin and quality of the fill material used in Lochinvar Creek for erosion protection and livestock crossings is not known; and
- The site use prior to the 1970's are not well known. Based on current evidence it was likely used for farming (livestock grazing) and/or bushland.

3.11 Areas of Environmental Concern

Table 3.11 (below) shows the areas of environmental concern (AECs) and associated Chemicals of Potential Concern (COPCs) identified for the site.

Table 3.11 – Areas of Environmental Concern and Chemicals of Potential Concern

AEC	Potentially Contaminating Activity	Potential COCs	Likelihood of Contamination
1. Imported Fill	Potential use of contaminated imported fill	TRH, BTEX, PAH, metals, Asbestos (CoPCs dependent on fill type)	Low to medium

4.0 Data Quality Objectives

4.1 Step 1 – State the Problem

The site has historically been used for farming purposes since and there is a potential for contamination of soil to exist from past site uses. One AEC was identified for the site, as described in Table 3.11, above. If contamination exists, the site may not be suitable for the proposed use without remediation.

4.2 Step 2 – Identify the Decision/Goal of the Study

The decisions to be made based on the contamination assessment are:

- Is the site characterisation sufficient to provide adequate confidence to make decisions regarding remediation and or management?
- Are the concentrations of COPCs above the adopted landuse criteria?
- Do potential risks associated with contamination exist, and if so, what are they?
- Will the site require remediation, and if so, what level and type of remediation will be required to make the site suitable for the proposed land use, from a contamination perspective?

4.3 Step 3 – Identify Information Inputs

Inputs into the decision are:

- Have samples been collected in the required areas of the site (the identified AECs)?
- Have samples been collected at the required frequencies and adequately represent the conditions on site?
- Is the data set adequate to perform statistical analysis, if required (i.e. calculate 95% UCL)?
- Have the samples been analysed for the COPCs identified?
- Have concentrations exceeding the adopted criteria been reported in the samples?
- If concentrations exceeding adopted criteria have been reported, will these areas require remediation and/or management?

The informational inputs into the decision are:

- Field observations and field screening results;
- Laboratory results (concentrations of contaminants in soil);
- QA/QC documentation and data;

- Adopted assessment criteria (see Section 6); and,
- Relevant NSW EPA endorsed Guidelines.

The media to be sampled and analysed is:

- Soil;
- Sediment; and
- Surface water.

4.4 Step 4 – Define the Boundaries of the Study

The study boundary is defined laterally as the site boundary, Lot 1 and Lot 2 DP1299958, within the Maitland local government area, Parish of Gosforth, County of Northumberland. The site is located at 20 and 20A Cantwell Street, Lochinvar, NSW and covers an area of approximately 14.57ha (refer to Figure 1, Appendix A). Vertically, the study boundary will be defined by the depth of soil contamination and/or depth to groundwater. It is anticipated the vertical boundary would be a maximum of 5m bgs. Temporally, the study boundary is the date of sampling.

4.5 Step 5 – Develop an Analytical (Statistical) Approach

The analytical approach can be defined as: -

- If the laboratory quality assurance/ quality control data are within the acceptable ranges, the data will be considered suitable for use;
- If the COPCs are reported above the adopted criteria and/or at elevated levels (where no criteria are available) then it will be considered whether further assessment, remediation and/or management measures are required;
- Where practical and/or appropriate, the 95% Upper Confidence Limit (UCL) of the validation samples will be calculated. If the 95% UCL is above the adopted criteria, then it will be considered whether further assessment, remediation and/or management measures are required; and,
- Where concentrations are below the assessment criteria, then no further assessment, remediation and/or management of that contaminant, in that area, in that media, is required. This is provided samples have been collected at the required frequencies (as per NSW EPA guidelines) and adequately represent the conditions on site, if not, additional sampling may be required.

4.6 Step 6 – Specify Performance or Acceptance Criteria

There are two types of errors:

- Type 1 – finding that the site is contaminated, when it is not;
- Type 2 – finding that the site is uncontaminated, when it is.

To reduce the potential for errors, the following will be applied:

- Appropriate field sampling methodologies and collection of field data (including sampling frequency);
- Robust QA/QC assessment of field procedures and laboratory data;
- Appropriate sampling and analytical density;

- Use of statistics (i.e. 95% UCL) to assess arithmetic average of COPCs. Use of statistics will also take into account:
  - No sample should report a concentration more than 250% of the adopted criteria; and,
  - The standard deviation of a sample population should not exceed 50% of the adopted criteria.

The adopted criteria are shown in Section 6 below.

4.7 Step 7 – Develop the Plan for Obtaining Data

The methodologies presented in this report are designed to meet the nominated DQOs. Optimisation of the data collection process will be achieved by:

- Working closely with the analytical laboratories and sampling equipment suppliers so that appropriate procedures and processes are developed and implemented prior to and during the field work and that sampling, handling, and transport to, and processing by, the analytical laboratories is appropriate.
- Conduct sampling in accordance with industry best practice and Standard Operating Procedures (SOPs) for the type of sampling being conducted.

5.0 Field and Laboratory Investigations

5.1 Sampling Plan

The site is about 14.57ha in area. The NSW EPA (2022) Sampling Design Part 1 – Application, Contaminated Land Guidelines recommends a minimum of 161 sampling locations to characterise a site of 14.57ha. Based on the site history assessment, one AEC was identified (imported fill). To provide an assessment of the AEC identified, and an assessment of potential soil contamination across the site, judgemental sampling was considered appropriate. 14 sampling locations (ten soil, two sediment and two surface water) were carried out across the site. Sampling locations were selected based on the site history, the AECs identified for the site, and providing representative sampling across the site. Table 5.1 summarises the sampling locations with reference to the AECs, and the laboratory analysis. The sampling locations are shown on Figure 3, Appendix A.

Table 5.1 – Summary of Sampling Locations and Laboratory Analysis

AEC	Potential COCs	Samples Collected	COCs analysed
1. Imported Fill	Potential use of contaminated imported fill (concrete, bricks, rock) in Lochinvar Creek	Soil - TPQ14, TP22 and TP23	Soil - TRH, BTEX, PAH, Metals, Asbestos, OCPs, pH and CEC
Remainder of site	Rural land use	Soil - TPQ06 to TPQ21 Sediment - SED1, SED 2	Soil – • Metals – 9 primary samples • TRH, BTEX, PAH, OCPs – 4 primary samples

AEC	Potential COCs	Samples Collected	COCs analysed
		Surface water - WS1, WS2	• Asbestos – 7 primary samples • pH and CEC – 1 primary sample. Sediment & surface water - TRH, BTEX, PAH, Metals, OCPs

Notes: TP = test pit

It is noted that TPQ01 to TPQ05 were carried out as part of a separate geotechnical assessment for the project, located on Cantwell Road, and are not included in this assessment.

5.2 Soil Sampling

The test pits were excavated using a 2.7t excavator. The test pits were excavated at least 0.5m into natural material or a maximum of 2.5m bgs. Soil samples were collected from the test pits in the topsoil and fill (where present) materials and underlying natural materials. The samples were collected directly from the excavator bucket, using a clean pair of nitrile gloves.

Each surface sample and fill material samples were assessed for asbestos onsite using the gravimetric method, comprising of collection of a 10L sample, screening through a 6.7mm sieve, and weighing of potential ACM fragments retained on the sieve (if any). The results of the gravimetric testing are shown in Table 2, Appendix I, and discussed in Section 8.2.

The soil samples were placed into laboratory supplied glass jars and plastic zip-lock bags. Each soil sample was placed directly into an ice-chilled esky and remained chilled during fieldwork and transportation to the laboratory.

5.3 Surface Water/Sediment Sampling

Two sediment samples (SED1 and SED2) were collected from the northern and southern portions of Lochinvar Creek and two surface water samples (WS1 and WS2) were collected from the northern (down-gradient) and southern (up-gradient) portions of the Lochinvar Creek. The samples were collected where water was ponded in creek, as no water was flowing at the time of the assessment.

Sediment samples were collected by hand from the creek bed and placed into laboratory supplied glass jars. Surface water samples were collected directly into laboratory supplied bottles with appropriate preservatives. Each sample was placed directly into an ice-chilled esky and remained chilled during transportation to the laboratory.

5.4 Laboratory Analysis

The samples were dispatched to the NATA-accredited Eurofins laboratory under chain of custody conditions. Soil samples were selected for analysis based on field observations, and providing a spread across the site. The soil samples were analysed for the following:

Soil

Ten soil samples were selected for analysis as part of this PDSI based on field observations. The soil samples were analysed for the following:

- Total Recoverable Hydrocarbons (TRH) – 5 primary samples;
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) – 5 primary samples;
- Polycyclic Aromatic Hydrocarbons (PAHs) – 5 primary samples;
- Metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury) – 10 primary samples;
- Chromium speciation – 1 primary sample;
- OCP's – 5 primary samples;
- pH and Cation Exchange Capacity (CEC) – 2 primary samples; and
- Asbestos (NEPM %w/w) – 8 primary soil samples.

One duplicate sample was also analysed for heavy metals, TRHs, PAHs, BTEX and OCPs for quality control purposes.

Surface Water

Two surface water samples were selected for analysis as part of this PDSI. The surface water samples were analysed for the following:

- Total Recoverable Hydrocarbons (TRH) – 2 primary samples;
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) – 2 primary samples;
- Polycyclic Aromatic Hydrocarbons (PAHs) – 2 primary samples;
- Metals (un-filtered) (arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury) – 2 primary samples; and
- OCP's – 2 primary samples.

One duplicate sample was also analysed for heavy metals, TRHs, PAHs, BTEX and OCPs for quality control purposes.

Sediment

Two sediment samples were selected for analysis as part of this PDSI. The sediment samples were analysed for the following:

- Total Recoverable Hydrocarbons (TRH) – 2 primary samples;
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) – 2 primary samples;
- Polycyclic Aromatic Hydrocarbons (PAHs) – 2 primary samples;
- Metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury) – 2 primary samples;
- Organochlorine Pesticides (OCPs) – 2 primary samples.

6.0 Investigation Criteria

6.1 Soil and Sediment

Health and Ecological Investigation and Screening Levels

The health and ecological investigation levels for soil, presented in the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013*, Canberra (referred to as ASC NEPM 2013) are generally used in NSW when selecting investigation levels for chemical contaminants in soil.

The purpose of the ASC NEPM (2013) is to '*establish a nationally consistent approach to the assessment of site contamination to ensure sound environmental management practices by the community which includes regulators, site assessors, environmental auditors, landowners, developers and industry*'.

ASC NEPM (2013) provides health and ecological investigation and screening levels for different exposure scenarios based on a proposed land use. Health and ecological investigation and screening levels are applicable to the first stage (Tier 1) of site assessment and are used to assist in the iterative development of a Conceptual Site Model (CSM). They are adopted as concentrations of a contaminant above which either further appropriate investigation and/or evaluation will be required, or development of an appropriate management strategy (including remediation).

Health Investigation Levels (HILs) and Health Screening levels (HSLs) are applicable for assessing human health risk via relevant exposure pathways.

The HILs were developed for a broad range of metals and organic substances. These are generic to all soil types.

The HSLs have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via inhalation and direct contact with soil and groundwater. The HSLs depend on specific soil physicochemical properties, building configurations, land use scenarios and the depth that groundwater is encountered.

Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) are applicable for assessing risk to terrestrial ecosystems under residential, open space and commercial/industrial land use scenarios. They apply to the top 2m of soil, which corresponds to the root zone and habitation zone of many species.

The EILs are associated with selected metals and organic compounds. The EILs are site specific and are determined by calculating an Ambient Background Concentration (ABC) and an Added Contaminant Limit (ACL) for the site, which are added together to get the EIL. The EIL's for the site have been calculated using an ABC and site specific pH, Cation Exchange Capacity (CEC) and clay content values. The ABC were obtained from Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (Olszowy et al, 1995) - old suburbs, low traffic, 50 percentile.

The ESLs are associated with petroleum compounds and fractions and are dependent on specific soil physical properties (i.e. coarse and fine-grained soil).

Based on the proposed site use the investigation and screening levels for residential land use have been adopted (HIL A, EIL A, HSL A, and ESL A), and are shown in Table 6.1 below.

Asbestos Materials in Soil

The assessment of known and suspected asbestos contamination in soil is based on:

- *ASC NEPM (2013)*; and
- *WA DoH (2009) Guidelines of the assessment and management of asbestos contaminated sites in Western Australia, WA Department of Health and Department of Environment and Conservation.*

Schedule B1, Section 4 ASC NEPM (2013) provides guidance on the assessment of both friable and non-friable forms of asbestos in soil. This guidance is based on the WA DoH (2009) Guidelines that presented risk based screening levels for asbestos in soil under various landuse scenarios.

For the purpose of assessing asbestos impacts in soil, three groups are recognised:

- *Asbestos Containing Material (ACM) - which is in sound condition although possibly broken or fragmented and the asbestos is bound in a matrix. This is restricted to material that cannot pass through a 7mm x 7mm sieve;*
- *Fibrous asbestos (FA) - friable asbestos material, such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products;*
- *Asbestos fines (AF) - includes free fibres of asbestos, small fibre bundles and also ACM fragments that pass through a 7mm x 7mm sieve.*

The health screening levels for asbestos in soil for residential land use have been adopted and are shown in Table 6.1 below.

Adopted Soil Investigation Criteria

The adopted soil criteria are presented in Table 6.1 below.

Table 6.1 – Adopted Soil Criteria

Contaminant	**HIL / HSL^ A (mg/kg)[1,2]**	**EIL / ESL A[3]**
Arsenic	100	100
Cadmium	20	-
Chromium VI	100	-
Chromium III	-	690*
Copper	6,000	220*
Lead	300	1,100
Nickel	400	240*
Zinc	7,400	690*
Mercury	40	-
Benzene	0.7	65

Contaminant	**HIL / HSL^ A (mg/kg)[1,2]**	**EIL / ESL A[3]**
Toluene	480	105
Ethylbenzene	NL	125
Xylenes	110	45
Naphthalene	5	170
TRH C6-C10	-	180
TRH C6-C10 minus BTEX	50	-
TRH >C10-C16	-	120
TRH >C10-C16 minus naphthalene	280	-
TRH >C16-C34	NL	1,300
TRH >C34-C40	NL	5,600
Benzo(a)pyrene	-	0.7
Benzo(a)pyrene TEQ	3	-
Total PAHs	300	-
DDD+DDT+DDE	240	180
Aldrin & dieldrin	6	-
Chlordane	50	-
Endosulfan	270	-
Endrin	10	-
Heptachlor	6	-
Hexachlorobenzene	10	-
Methoxychlor	300	-
Toxaphene	20	-
Chlorpyrifos	170	-
Asbestos	Detected	-
Bonded ACM %	0.01%	-

Contaminant	HIL / HSL^ A (mg/kg)[1,2]	EIL / ESL A[3]
FA and AF %	0.001%	-
All forms of asbestos	No visible evidence for surface soil (top 10cm)	-

Notes:
^ Based on an average pH of 8.8, a CEC of 17mg/kg, and Clay content 50%, and using Ambient Background Concentration obtained from Olszowy et al (1995) using urban soils, old suburbs with low traffic, 50% percentile.
1 – ASC NEPM (2013) - Health Investigation Levels- HIL A
2 - ASC NEPM - Soil Health Screening Levels for Vapour Intrusion, Residential, Clay 0m to <1m
3 - ASC NEPM (2013) - Ecological Investigation and Screening Levels, Urban Residential/Public Open Space, Fine textured

6.2 Surface Water Investigation Levels

For assessing surface water quality, it is first necessary to assess the beneficial uses of surface water for the site and down gradient of the investigation area being assessed. Potential beneficial uses are considered to include:

- Aquatic ecosystems - discharge to surface water bodies with the nearest water bodies being Lochinvar Creek, located in the centre of the site. Lochinvar Creek flows offsite to the north into the Hunter River located approximately 2.5km north of the site. Lochinvar Creek sustains freshwater ecosystems;
- Stock watering – Use of water in Lochinvar Creek to water stock (cattle); and
- Irrigation – Potential for Lochinvar Creek to be used for irrigation purposes, down gradient of the site.

Given the above, the potential beneficial use of surface water is considered to be sustaining aquatic ecosystems, stock watering and irrigation.

The applicable guidelines are:

- ANZECC (2000) Australian and New Zealand Guidelines on Fresh and Marine Water Quality (Primary Industries – Stock Watering and Irrigation;
- ANZECC (2018) Australian and New Zealand Guidelines on Fresh and Marine Water Quality; and
- National Environmental Protection Council (NEPC) National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) (ASC NEPM, 2013).

The trigger values for freshwater species presented in the ANZECC (2018) (and ASC NEPM, 2013) are considered applicable for the protection of aquatic ecosystems of the receiving waters as Lochinvar Creek is a freshwater ecosystem.

ASC NEPM (2013) has adopted the trigger values for the protection of 95% of aquatic ecosystems, except where contaminants are potentially bio-accumulative in which case the trigger values for protection of 99% of species are used.

Adopted Surface Water Criteria

The adopted surface water criteria are presented in Table 6.2 below.

Table 6.2 – Adopted Surface Water Criteria

Contaminant	Aquatic Ecosystem[1] (mg/L)	Stock Watering[2] (mg/L)	Irrigation[3] (mg/L)
Arsenic	0.013	0.5	20
Cadmium	0.0002	0.01	0.05
Chromium	0.001	1	1
Copper	0.0014	0.5	5
Lead	0.0034	0.1	5
Mercury	0.00006	0.002	0.002
Nickel	0.011	1	2
Zinc	0.008	20	5
Benzene	0.95	-	-
Toluene	0.18	-	-
Ethylbenzene	0.08	-	-
Xylenes	0.075	-	-
Anthracene	0.00001**	-	-
Benzo(a)pyrene	0.0001**	-	-
Naphthalene	0.016	-	-
DDT	0.006	-	-
Chlordane	0.03	-	-
Endosulfan	0.03	-	-
Endrin	0.01	-	-
g-BHC (Lindane)	0.2	-	-
Heptachlor	0.01	-	-
Toxaphene	0.1	-	-

Notes:

**ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Section 5.2.3. Secondary Contact

1. ANZECC (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality

2. ANZECC (2000) Australian and New Zealand Guidelines on Fresh and Marine Water Quality (Primary Industries – Stock Watering, Table 4.3.2
3. ANZECC (2000) Australian and New Zealand Guidelines on Fresh and Marine Water Quality (Primary Industries –Irrigation, Tables 4.2.10 and 4.2.11, short-term use, up to 20 years

7.0 Quality Assurance/Quality Control

Sampling activities were undertaken in accordance with normal, industry accepted practices and standards. The assessment of field and laboratory quality assurance / quality control (QA / QC) procedures is provided below, and a data validation report is presented in Appendix J.

In order to assess field quality assurance / quality control (QA/QC) procedures, the following quality control samples were collected and analysed:

QC Sample	Type	Lab	Analysis
D.13.06.24	Duplicate of TPQ13 0.0-0.1	Eurofins	Metals, TRH, BTEX, PAHs, OCPs
WD .13.06.24	Duplicate of WS1	Eurofins	Metals, TRH, BTEX, PAHs, OCPs

Primary and intra lab duplicate samples were analysed by the NATA-accredited Eurofins laboratory.

Table 5, Appendix I, presents the relative percentage differences (RPDs) between the primary and duplicate samples. A review of the Qualtest QA / QC results indicates that RPDs were within the acceptable range (30%). It is noted that low concentrations can exaggerate the percentage differences with respect to small total concentrations, therefore where results for primary and duplicate sample were less than 10 time the LOR, the RPDs have been disregarded.

The laboratory internal QA/QC reports indicated that the appropriate laboratory QA / QC procedures and rates were undertaken for contamination studies, and that:

- Laboratory blank samples were free of contamination;
- Matrix spike recoveries were within the laboratory control limits;
- Laboratory duplicate RPDs were recorded within the control limits. For lead, the lab quoted code Q15 which states "*The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.*" Based on this, the RPDs is not considered to affect the data usability.
- Surrogates and laboratory control samples were within the laboratories acceptable range

Based on the above, and the data validation report in Appendix J, it is considered that the field and laboratory methods for soil sampling are appropriate and that the data obtained is usable and considered to reasonably represent the concentrations at the sampling points at the time of sampling.

8.0 Results

8.1 Subsurface Conditions

The soils observed during test pitting are summarised below in Tables 8.1 and 8.2. The test pit logs are presented in Appendix H. It is noted that a Geotechnical Investigation was carried out by Qualtest in conjunction with this PDSI. The below summary covers the subsurface conditions observed in test pitting works carried out for both the geotechnical and environmental assessments across the site.

Table 8.1 – Summary of Soil Units and Types

Unit	Soil Type	Description
1	Fill	MIXTURE OF FILL CONCRETE AND BRICK WITH FILL: Clayey GRAVEL - fine to coarse grained (mostly fine to medium) angular, dark brown, fines of medium to high plasticity, with some gravel coal chitter, trace steel. (TPQ14 only). CLAY - medium to high plasticity, brown, trace fine grained sand, root affected.
2	Topsoil	Sandy CLAY - medium to high plasticity, grey, pale grey to pale brown, brown, dark grey-brown, fine grained sand (some medium to coarse grained), root affected.
3	Residual Soils	CLAY - medium to high plasticity, grey-brown, grey, pale grey, pale brown, pale grey to white, with some pale orange, red-brown, with some silt, trace fine to medium grained, rounded gravel, with some extremely weathered pockets/bands. Silty CLAY - Low to high plasticity, pale grey to white and pale orange to orange, with some extremely weathered pockets. Sandy CLAY - medium plasticity, pale grey to white and pale brown, with some pale orange to orange, fine to coarse grained (mostly fine to medium) grained sand.
4	Weathered rock	Extremely Weathered Sandy Siltstone with soil properties: breaks down into Sandy CLAY – medium plasticity, orange-brown and pale grey to pale brown, fine grained sand, trace fine to medium grained, rounded gravel. Extremely Weathered Sandy SILTSTONE with soil properties: breaks down into Silty CLAY - low to medium plasticity, orange-brown and pale grey to white with some highly weathered pockets/bands. Sandy SILTSTONE - estimated low to medium strength, orange-brown and pale grey to white. ANDESITE - pale grey to pale brown, with some white and dark grey, estimated low to medium strength.

Table 8.2 – Summary of Soil Units Encountered at Test Locations

Location	Unit 1 Fill	Unit 2 Topsoil	Unit 3 Residual Soils	Unit 4 Weathered Rock
	Depth in metres (m)			
TPQ06	-	0.00 – 0.10	0.10 – 2.30*	-
TPQ07	-	0.00 – 0.10	0.10 – 2.40*	-
TPQ08	-	0.00 – 0.15	0.15 – 2.00*	-
TPQ09	-	0.00 – 0.10	0.10 – 2.30*	-
TPQ10	-	0.00 – 0.10	0.10 – 2.40*	-
TPQ11	-	0.00 – 0.10	0.10 – 2.30*	-
TPQ12	-	0.00 – 0.10	0.10 – 2.50*	-
TPQ13	-	0.00 – 0.10	0.10 – 1.80	1.80 – 1.90*
TPQ14	0.00 – 0.20	-	0.20 – 0.50*	-
TPQ15	-	0.00 – 0.35	0.35 – 1.60	1.60 – 1.70*
TPQ16	-	0.00 – 015	0.15 – 1.00	1.00 – 1.42*
TPQ17	-	0.00 – 0.10	0.10 – 0.90	0.90 – 1.40*
TPQ18	-	0.00 – 0.10	0.10 – 2.20*	-
TPQ19	-	0.00 – 0.10	0.10 – 2.00*	-
TPQ20	-	0.00 – 0.15	0.15 – 2.00*	-
TPQ21	-	0.00 – 0.15	0.15 – 2.10*	-
TPQ22	0.00 – 0.20	--	0.20 – 0.60*	-
TPQ23	0.00 – 0.20		0.20 – 0.60*	-

*End of test pit

Some brick and concrete was observed in TPQ14, see test pit logs attached in Appendix H.

Groundwater inflows were not observed during test pitting.

8.2 Laboratory Results

8.2.1 Soil and Sediment

Soil and sediment analytical results for the contamination assessment are summarised in Table 1 and 2, Appendix I. The laboratory analytical reports are also included in Appendix K.

The soil laboratory results were compared to the investigation levels described in Section 6. The analytical results indicated that concentrations of contaminants were reported below the adopted criteria, with the exception of:

- Concentration of zinc exceeded the EIL criteria (690mg/kg) in sample SED2 (790mg/kg).

8.2.2 Surface water

Surface water analytical results for the contamination assessment are summarised in Table 3, Appendix I. The laboratory analytical reports are also included in Appendix K.

- Concentration of chromium exceeded the aquatic ecosystem criteria (0.001 mg/L), in sample WS1 (0.002 mg/L);
- Concentrations of copper exceeded the aquatic ecosystem criteria (0.0014 mg/L), in samples WS1 (0.002 mg/L) and WS2 (0.002mg/L); and,

- Concentrations of zinc exceeded the aquatic ecosystem criteria (0.008 mg/L), in samples WS1 (0.016 mg/L) and WS2 (0.011mg/L).

9.0 Discussion

Zinc EIL Exceedance

Zinc exceeded the EIL in one sample, SED2, located in the onsite Lochinvar Creek in an up-stream location. As the EIL criteria (690 mg/kg) exceedance was low (790mg/kg), and the down gradient sample SED1 showed zinc concentrations below the adopted criteria, it is likely the elevated zinc concentration is localised to a small area. There was no evidence of vegetation distress. Based on this, it is considered that the zinc EIL exceedance does not pose a risk to plants and wildlife. Therefore, further assessment or remediation in this area is not considered warranted, and would likely have a net adverse environmental impact.

Surface Water Exceedance

Chromium, copper and zinc were detected above the adopted criteria for aquatic ecosystems in each surface water sample (WS1 only for chromium). As these metals were detected in both up- and down-stream water samples, and at relatively low concentrations, it is considered that these concentrations are likely reflective of regional background water quality. Therefore, further assessment of surface water area is not considered warranted.

10.0 Conceptual Site Model

Based on the results of the preliminary and detailed site investigation carried out on the site, a Conceptual Site Model (CSM) has been developed.

Table 10.0 – Conceptual Site Model

AEC	COPC	Likelihood of Contamination	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Potential & Complete Exposure Pathways	Sampling Completed
1. Imported Fill • Potential use of contaminated imported fill	TRH, BTEX, PAH, Metals, Asbestos	Low to medium	• Top-down leaks/spills, flakes/fibres onto soil/sediment • Leaching of soil contaminants to surface water and groundwater	• Fill soils • Underlying soils • Surface water • Sediment • Groundwater • Aesthetics	• Current site visitors • Future construction workers & site users • Soil biota/plants and transitory wildlife • Onsite surface water – Lochinvar Creek (located in the centre of the site) flowing offsite to the north • Groundwater dependent ecosystems	• Direct dermal contact with contaminated soil, sediment, and/or surface water • Ingestion of contaminated soil, sediment, and/or surface water and/or • Inhalation of asbestos fibres, or contaminated soil (as dust) • Inhalation of petroleum hydrocarbon vapours • Leaching of soil contaminants to surface water and/or groundwater • Surface water discharge from onsite Lochinvar Creek to the north.	• Incomplete exposure pathway for current site visitors, future construction workers and site users as concentrations of contaminants in soil and sediment samples collected were below adopted criteria. • Incomplete exposure pathway for soil biota/plants and transitory wildlife, and surface water, as concentration of contaminants in soil, sediment and surface water samples collected were generally below adopted criteria. Minor exceedance of zinc in one sediment sample appears to be localised as no contamination identified in the down-stream sample. Surface water samples were recorded below the adopted criteria or reflective of regional background water quality. • Incomplete exposure pathway to groundwater due to depth of groundwater (>3m), clay subsoils and top-down natural of contamination.	TP14, TP22, TP23

11.0 Conclusions and Recommendations

The site history review showed that the site has consisted of cleared vacant/farming land (most likely livestock grazing) with scattered trees and Lochinvar Creek running through the centre of the site from at least the 1970's to the present day. The historical title search indicated that the site has been owned by property trusts associated with churches (Church of England and Catholic Diocese) from 1886 until the present day.

One AEC was identified for the site:

1. Imported Fill - Potential use of contaminated imported fill.

To assess whether contamination was present, eight test pit locations were sampled, targeting the identified AEC and providing a spread across the site. Two sediment and two surface water samples were also collected.

The laboratory results showed concentrations of contaminants below the adopted criteria, with the exception of zinc slightly exceeding the ecological criteria in one sediment sample, and chromium, copper and zinc exceeding the aquatic ecosystem criteria in two surface water samples.

As the zinc EIL exceedance was minor, and the downstream sample was below the adopted criteria, it is likely the elevated zinc concentrations are localised. There was no evidence of vegetation distress. Based on this, it is considered that the zinc EIL exceedance does not pose a risk to plants and wildlife. Therefore, further assessment or remediation in this area is not considered warranted, and would likely have a net adverse environmental impact.

Chromium copper and zinc were detected above the adopted criteria for aquatic ecosystems in each surface water sample. As these metals were detected in both up- and down-stream water samples, and at relatively low concentrations, it is considered that these concentrations are likely reflective of regional background water quality. Therefore, further assessment of surface water area is not considered warranted.

The Conceptual Site Model (CSM) indicated that exposure pathways were incomplete for current and future site users, construction/maintenance workers, and ecological receptors as no contamination was identified, or exceedances were minor and localised or reflective of background conditions.

Based on the results of the Preliminary and Detailed Site Investigation it is considered the site is suitable for the proposed development.

This report was prepared in general accordance with the relevant sections of the NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013, Canberra (referred to as ASC NEPM 2013). This report comprises a stage 1 preliminary site investigation and stage 2 detailed site investigation as described by State Environmental Planning Policy (Resilience and Hazards) 2021 Chapter 4.

12.0 Limitations

This report has been prepared by Qualtest for Trustee of the Roman Catholic Church for the Diocese of Maitland Newcastle c/- Monteath & Powys based on the objectives and scope of work listed in Sections 1.1 and 1.2. No warranty, expressed or implied, is made as to the information and professional advice included in this report. Anyone using this document does so at their own risk and should satisfy themselves concerning its applicability and, where necessary, should seek expert advice in relation to their particular situation.

The opinions, conclusions and recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. Qualtest 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.

In preparing this report Qualtest has relied on information contained in searches of government websites and has not independently verified or checked the data contained on these websites.

In preparing this report, current guidelines for assessment and management of contaminated land were followed.

Site conditions may change after the date of this Report. Qualtest does not accept responsibility arising from, or in connection with, any change to the site conditions.

13.0 References

NSW Department of Primary Industries (Office of Water) Registered Groundwater Bore Map, accessed from http://allwaterdata.water.nsw.gov.au/water.stm.

NSW Land and Property Information, Spatial Information eXchange (SIX) Maps - Topographic Map, accessed from https://maps.six.nsw.gov.au/.

State of NSW and Department of Planning, Industry and Environment Acid Sulfate Soil online database, accessed from https://www.environment.nsw.gov.au/eSpade2Webapp

NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land.

NSW EPA (2022) Sampling Design Part 1 – Application, Contaminated Land Guidelines

NEPC (2013) National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), Canberra (ASC NEPM 2013).

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

WA DoH (2021) Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia, WA Department of Health and Department of Environment and Conservation.

APPENDIX A:
Figures

LEGEND:

Approximate Site Boundary

Image Sixmaps, image date 2021, accessed 28 June 2024

Qualtest LABORATORY (NSW) PTY LTD	Client:	CATHOLIC DIOCESE	Drawing No:	FIGURE 1
	Project:	PRELIMINARY & DETAILED SITE INVESTIGATION	Project No:	NEW24P-0120
	Location:	20 & 20A CANTWELL ROAD, LOCHINVAR	Scale:	N.T.S
	Title:	SITE LOCATION PLAN	Date:	28/06/2024

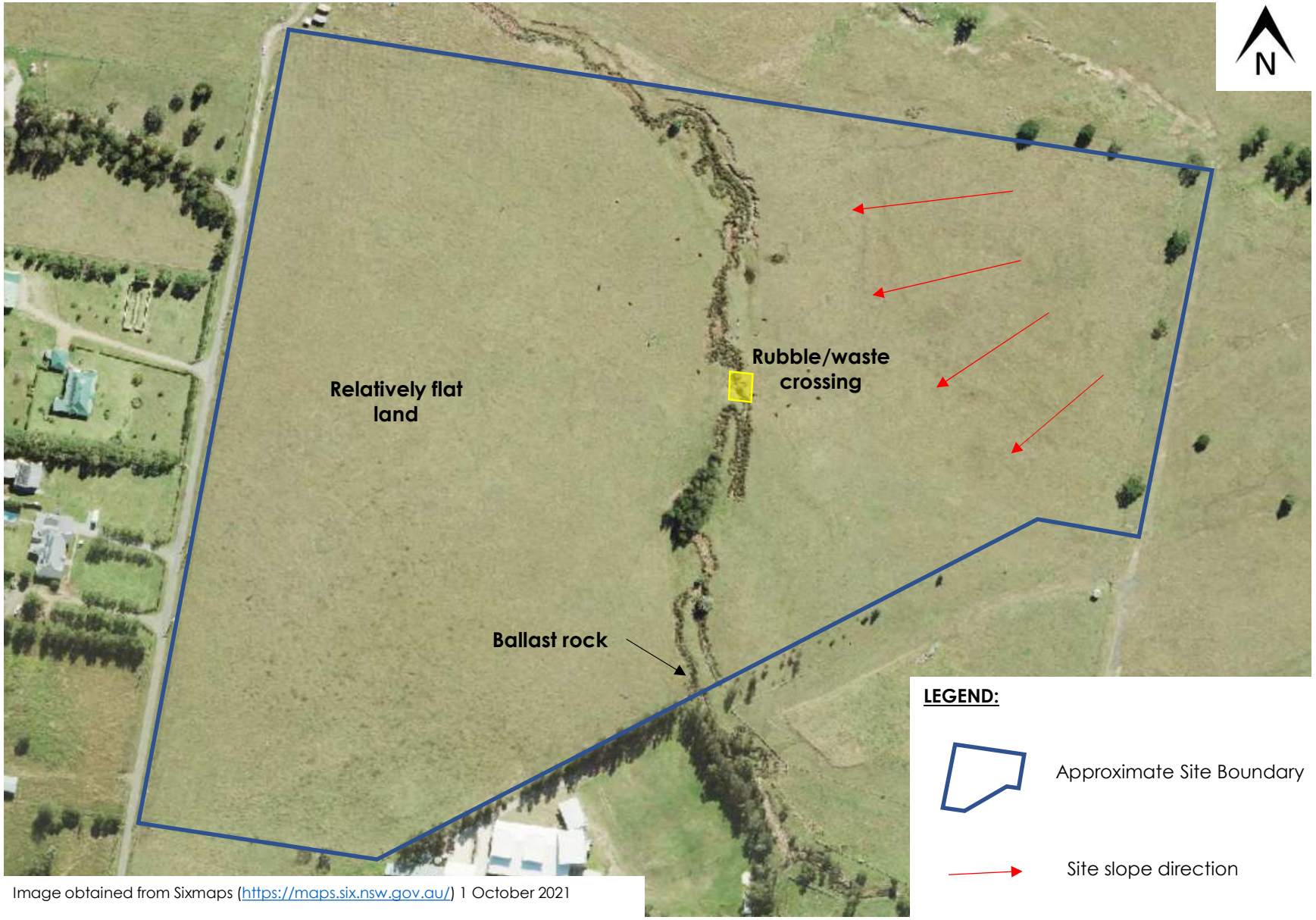


Image obtained from Sixmaps (https://maps.six.nsw.gov.au/) 1 October 2021

Qualtest LABORATORY (NSW) PTY LTD

Client:	CATHOLIC DIOCESE	Drawing No:	FIGURE 2
Project:	PRELIMINARY & DETAILED SITE INVESTIGATION	Project No:	NEW24P-0120-AA
Location:	20 & 20A CANTWELL ROAD, LOCHINVAR	Scale:	N.T.S.
Title:	SITE FEATURES PLAN	Date:	28/06/2024

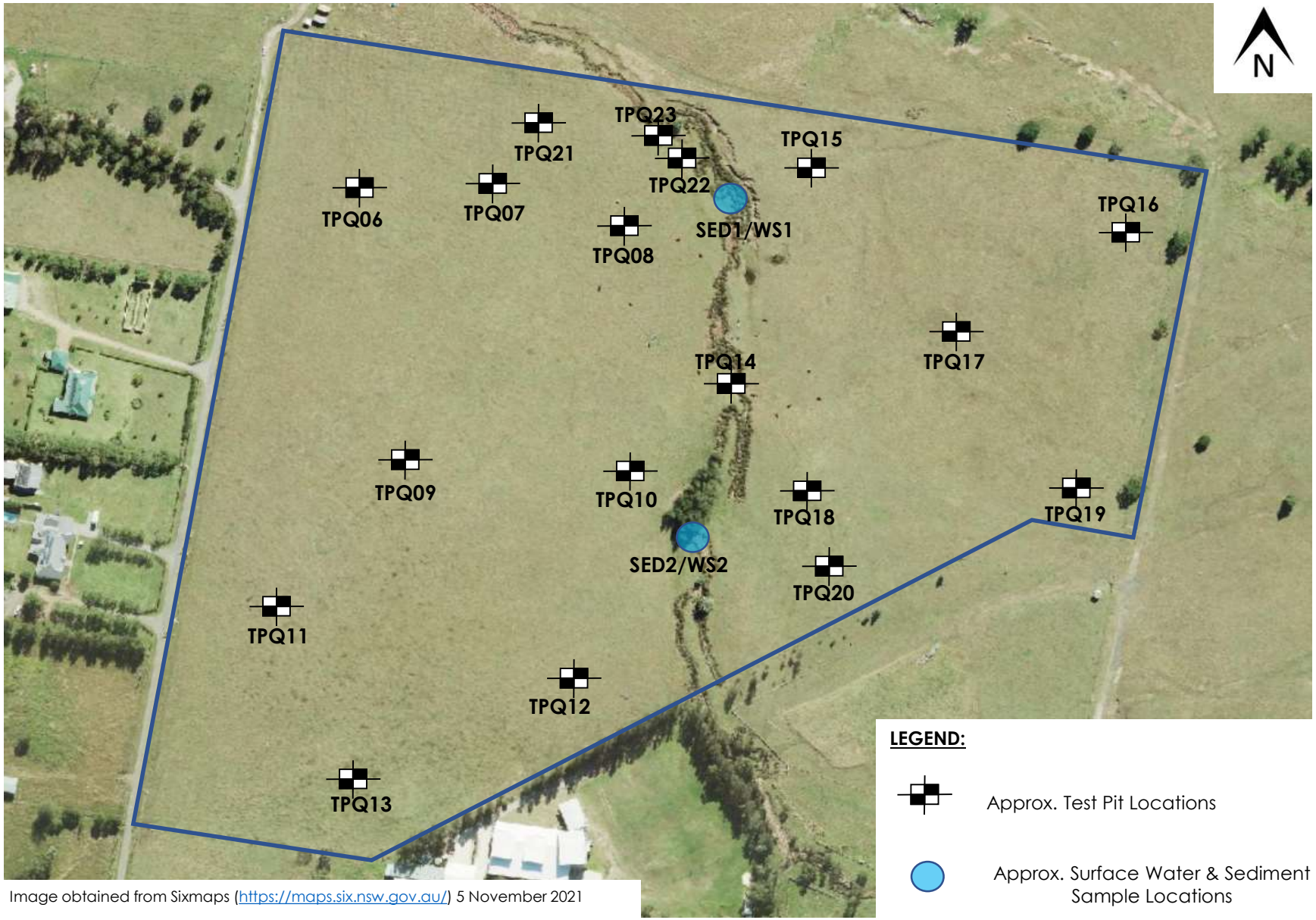


Image obtained from Sixmaps (https://maps.six.nsw.gov.au/) 5 November 2021

Qualtest LABORATORY (NSW) PTY LTD

Client:	CATHOLIC DIOCESE	Drawing No:	FIGURE 3
Project:	PRELIMINARY & DETAILED SITE INVESTIGATION	Project No:	NEW24P-0120-AA
Location:	20 & 20A CANTWELL ROAD, LOCHINVAR	Scale:	N.T.S.
Title:	SITE FEATURES PLAN	Date:	28/06/2024

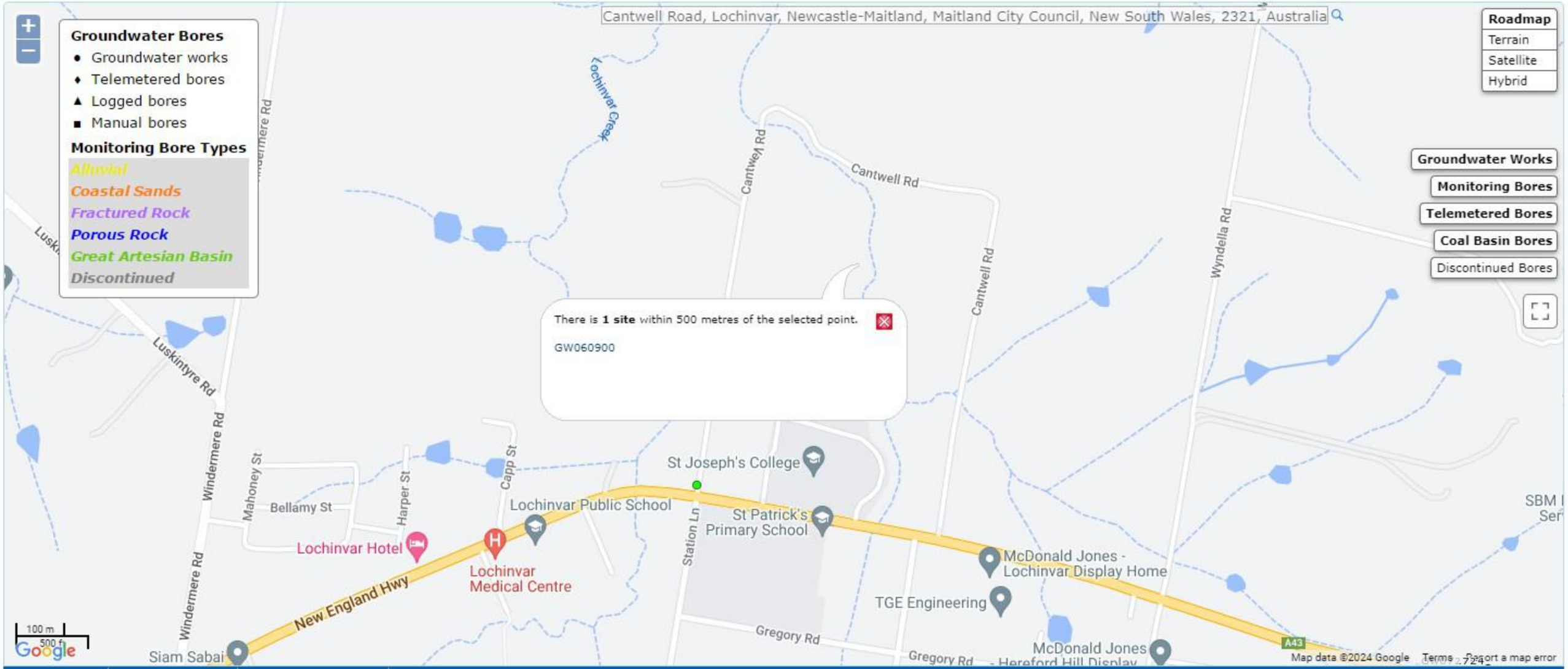
APPENDIX B:
Groundwater Bore Search

ALL GROUNDWATER MAP

bookmark this page

All data times are Eastern Standard Time

Map | Info



Scale = 1 : 6771 | 166021, 0, 31

WaterNSW
Work Summary

GW060900

Licence: 20WA207621
Licence Status: CURRENT

Authorised Purpose(s): STOCK,DOMESTIC
Intended Purpose(s): MONITORING BORE, STOCK, DOMESTIC

Work Type: Bore
Work Status: Abandoned,6-12 Months
Construct.Method: Rotary Air
Owner Type: Private

Commenced Date:
Completion Date: 01/03/1985
Final Depth: 18.30 m
Drilled Depth: 18.30 m

Contractor Name: (None)
Driller: John Rose
Assistant Driller:

Property: N/A New England Hwy LOCHINVAR 2321 NSW
GWMA: -
GW Zone: -
Standing Water Level (m):
Salinity Description: 501-1000 ppm
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	L7 (68)
Licensed:	NORTHUMBERLAND	GOSFORTH	Whole Lot 11//1219648

Region: 20 - Hunter
River Basin: 210 - HUNTER RIVER
Area/District:
CMA Map: 9132-1S
Grid Zone:
Scale:

Elevation: 25.00 m (A.H.D.)
Elevation Source: R.L. at Surface
Northing: 6381144.000
Easting: 355502.000
Latitude: 32°41'52.7"S
Longitude: 151°27'30.5"E

GS Map: -
MGA Zone: 56
Coordinate Source: GPS - Global

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1	1	Casing	P.V.C.	-0.20	18.30	160			Seated on Bottom
1	1	Casing	P.V.C.	-0.19	17.50	160			
1	1	Casing	P.V.C.	-0.17	18.30				
1	1	Opening	Slots - Vertical	6.20	18.30	160		1	Mechanically Slotted

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
4.20	4.90	0.70	Consolidated	4.20		0.20			
10.00	10.70	0.70	Fractured	4.20		0.30			
13.40	13.70	0.30	(Unknown)	5.40		0.60			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	4.20	4.20	Clay	Clay	
4.20	4.87	0.67	Sandstone Weathered Water Supply	Sandstone	
4.87	10.00	5.13	Clay	Clay	
10.00	10.66	0.66	Andesite Weathered Water Supply	Andesite	
10.66	16.15	5.49	Sandstone Or Siltstone Water Supply	Sandstone	
16.15	18.28	2.13	Shale Grey	Shale	

Remarks

02/11/1987: TDS=990 MG/L

***** End of GW060900 *****

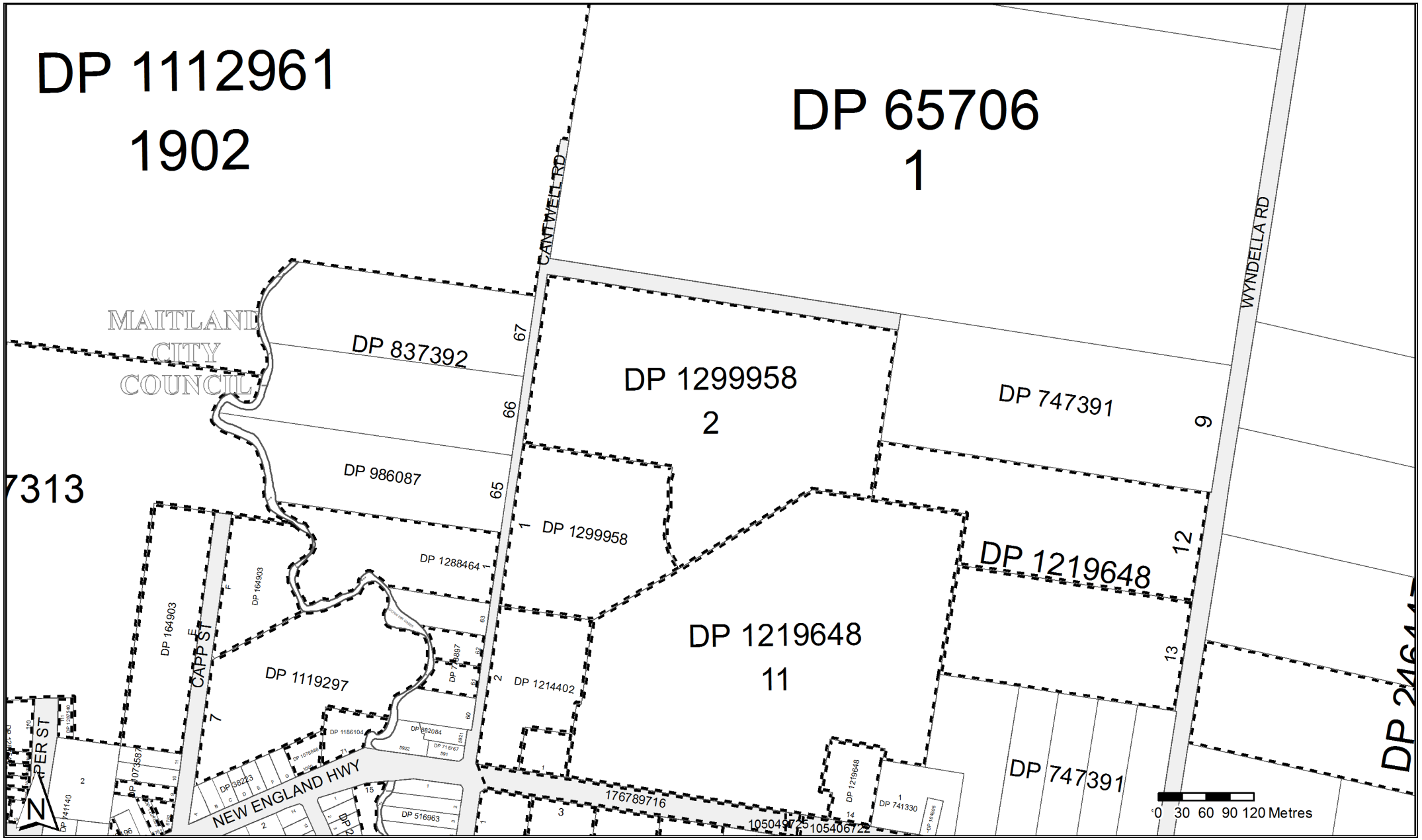
APPENDIX C:
Historical Titles

LAND REGISTRY SERVICES

Cadastral Records Enquiry Report : Lot 2 DP 1299958

Ref : NOUSER

Locality : LOCHINVAR
Parish : GOSFORTH
LGA : MAITLAND
County : NORTHUMBERLAND



This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

	Status	Surv/Comp	Purpose
DP160496			
Lot(s): B			
CA102288 - LOT B DP160496			
DP164903			
Lot(s): F			
DP1271709	REGISTERED	SURVEY	EASEMENT
Lot(s): E, F			
CA100660 - LOTS E AND F DP164903 AND LOT 7 DP1119297			
DP246447			
Lot(s): 224			
DP1137872	REGISTERED	SURVEY	EASEMENT
DP250821			
Lot(s): 15			
CA98597 - LOT 15 DP250821			
DP537313			
Lot(s): 1			
DP1271709	REGISTERED	SURVEY	EASEMENT
DP1303379	PRE-EXAM	SURVEY	SUBDIVISION
DP778897			
Lot(s): 61, 62			
DP1137872	REGISTERED	SURVEY	EASEMENT
DP1073587			
Lot(s): 9			
CA90517 - LOTS 9-11 DP1073587			
DP1078888			
Lot(s): 1000			
DP38223	HISTORICAL	SURVEY	UNRESEARCHED
DP1112961			
Lot(s): 1902			
CA100805 - LOTS 1901-1902 DP1112961			
DP1119297			
Lot(s): 7			
DP1137872	REGISTERED	SURVEY	EASEMENT
DP1231521	REGISTERED	SURVEY	EASEMENT
DP1238396	REGISTERED	SURVEY	EASEMENT
DP1271709	REGISTERED	SURVEY	EASEMENT
CA100660 - LOTS E AND F DP164903 AND LOT 7 DP1119297			
DP1186104			
Lot(s): 71			
DP1231521	REGISTERED	SURVEY	EASEMENT
NSW GAZ. 05-02-2016 ACQUIRED FOR THE PURPOSES OF THE HUNTER WATER ACT 1991 - LOT 71 DP1186104			Folio : 145
DP1214402			
Lot(s): 1, 2			
DP1102770	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
CA101843 - LOT 1 DP1102770			
DP1219648			
Lot(s): 11			
DP1229692	REGISTERED	SURVEY	EASEMENT
DP1238395	REGISTERED	SURVEY	EASEMENT
DP1240754	REGISTERED	SURVEY	EASEMENT
CA101842 - LOT 2 DP1102770			
Lot(s): 11, 14			
DP818314	HISTORICAL	SURVEY	SUBDIVISION
Lot(s): 11, 12, 13			
DP747391	HISTORICAL	SURVEY	OLD SYSTEM CONVERSION

	Status	Surv/Comp	Purpose
DP1224683			
Lot(s): 6781, 6782			
DP1085519	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
CA94267 - LOT 678 DP1085519			
DP1241101			
Lot(s): 1			
DP1119184	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
CA121395 - LOT 11 DP1119184			
Lot(s): 1, 3, 4			
DP1118883	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
CA110328 - LOTS 101-102 DP1118883			
DP1254351			
Lot(s): 2			
DP1121434	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
CA124806 - LOT 178 DP1121434			
DP1287540			
Lot(s): 104, 105, 106, 107, 108, 109, 110, 111			
DP1127416	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
DP1284872	HISTORICAL	SURVEY	DELIMITATION
CA101455 - LOT 21 DP1127416			
DP1288464			
Lot(s): 1			
DP986087	HISTORICAL	COMPILATION	DEPARTMENTAL
DP1299958			
Lot(s): 1, 2			
DP818314	HISTORICAL	SURVEY	SUBDIVISION
DP975690	HISTORICAL	COMPILATION	UNRESEARCHED
Lot(s): 2			
CA101910 - LOTS 35-38 DP975690			
Road			
Polygon Id(s): 105049725, 105406722, 176789716			
DP1257525	REGISTERED	SURVEY	SURVEY INFORMATION ONLY

Plan	Surv/Comp	Purpose
DP38223	SURVEY	UNRESEARCHED
DP65706	SURVEY	UNRESEARCHED
DP160496	SURVEY	UNRESEARCHED
DP164806	SURVEY	UNRESEARCHED
DP164903	SURVEY	UNRESEARCHED
DP231443	SURVEY	SUBDIVISION
DP246447	SURVEY	SUBDIVISION
DP250821	SURVEY	SUBDIVISION
DP379508	SURVEY	UNRESEARCHED
DP516963	SURVEY	SUBDIVISION
DP537313	SURVEY	SUBDIVISION
DP718767	SURVEY	SUBDIVISION
DP741140	COMPILATION	DEPARTMENTAL
DP741330	COMPILATION	DEPARTMENTAL
DP747391	SURVEY	OLD SYSTEM CONVERSION
DP778897	COMPILATION	DEPARTMENTAL
DP797658	COMPILATION	DEPARTMENTAL
DP837392	SURVEY	SUBDIVISION
DP882084	SURVEY	SUBDIVISION
DP986087	COMPILATION	DEPARTMENTAL
DP1073587	COMPILATION	LIMITED FOLIO CREATION
DP1078888	COMPILATION	CONSOLIDATION
DP1112961	COMPILATION	LIMITED FOLIO CREATION
DP1119297	COMPILATION	LIMITED FOLIO CREATION
DP1186104	SURVEY	DELIMITATION
DP1214402	COMPILATION	SUBDIVISION
DP1219648	SURVEY	SUBDIVISION
DP1224683	SURVEY	SUBDIVISION
DP1241101	SURVEY	SUBDIVISION
DP1254351	COMPILATION	REDEFINITION
DP1287540	SURVEY	SUBDIVISION
DP1287540	SURVEY	SUBDIVISION
DP1288464	SURVEY	DELIMITATION
DP1299958	UNRESEARCHED	SUBDIVISION
DP1299958	SURVEY	SUBDIVISION

System Document Identification

Form Number: 01T-e
Template Number: t_nsw18
ELN Document ID: 1227415805
ELN NOS ID: 1227415809

TRANSFER

New South Wales
Real Property Act 1900

Land Registry Document Identification

AS371784

Stamp Duty: 10383218-001

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

LODGED BY:

Responsible Subscriber:	DYE & DURHAM LEGAL DYE & DURHAM LEGAL (FORMERLY GLOBALX LEGAL) ABN 88622912841
Address:	L 20, 535 Bourke ST Melbourne 3000
Email:	info@dyedurhamlegal.com
ELNO Subscriber Number:	23780
Customer Account Number:	503157J
Document Collection Box:	1W
Client Reference:	CathDioc - Cath

LAND TITLE REFERENCE

2/818314
37/975690
35/975690
36/975690
38/975690

TRANSFEROR

TRUSTEES OF CHURCH PROPERTY FOR THE DIOCESE OF NEWCASTLE
Charitable body

TRANSFEREE

THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF MAITLAND-NEWCASTLE
Religious body

Tenancy: Sole Proprietor

CONSIDERATION

The transferor acknowledges receipt of the consideration of $11,000,000.00

ESTATE TRANSFERRED

FEE SIMPLE

The Transferor transfers to the Transferee the Estate specified in this Instrument and acknowledges receipt of any Consideration shown.

SIGNING FOR TRANSFEROR

I certify that:

1. The Certifier has taken reasonable steps to verify the identity of the transferor or his, her or its administrator or attorney.
2. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
3. The Certifier has retained the evidence supporting this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Party Represented by Subscriber:

TRUSTEES OF CHURCH PROPERTY FOR THE DIOCESE OF NEWCASTLE

Signed By: Scott Reginald Puxty
ELNO Signer Number: 69628
Signer Capacity: Practitioner Certifier
Digital Signing Certificate Number:

Signed for Subscriber: PARTNERS OF CANTLE CARMICHAEL LAWYERS ABN 32674593144

CANTLE CARMICHAEL LAWYERS

Subscriber Capacity: Representative Subscriber

ELNO Subscriber Number: 25560 **Customer Account Number:** 504483

Date: 08/08/2022

SIGNING FOR TRANSFEREE

I certify that:

1. The Certifier has taken reasonable steps to verify the identity of the transferee or his, her or its administrator or attorney.
2. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
3. The Certifier has retained the evidence supporting this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Party Represented by Subscriber:

THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF MAITLAND-NEWCASTLE

Signed By: Luciana Ignatiadis **Signer Capacity:** Practitioner Certifier

ELNO Signer Number: 58628 **Digital Signing Certificate Number:**

Signed for Subscriber: DYE & DURHAM LEGAL PTY LTD ABN 88622912841

DYE & DURHAM LEGAL
Dye & Durham Legal (formerly GlobalX Legal)

Subscriber Capacity: Representative Subscriber

ELNO Subscriber Number: 23780 **Customer Account Number:** 503157

Date: 08/08/2022

Entered: N
Verified:

C.A. NUMBER:

BOOK 4143
NO. 0947

INDEX PARTICULARS
GENERAL REGISTER OF DEEDS

(A) NATURE OF INSTRUMENT	DATE OF INSTRUMENT	REGISTRATION TYPE
Deed (General)	26. 8. 1996	General

(B) ENTRY TYPE	FAMILY NAME	GIVEN NAMES
V	LORD BISHOP OF NEWCASTLE	
V.	BISHOP	OF NEWCASTLE
P.	TRUSTEES	OF CHURCH PROPERTY FOR THE DIOCESE OF NEWCASTLE
Nothing:	Vesting of all properties which are now in the name of the Bishop of Newcastle in said Trustees.	

LEAVE BLANK WHERE INSTRUMENT DOES NOT AFFECT OLD SYSTEM LAND

(C) LOCALITY OF LAND	LINK CONVEYANCE - for Old System Land Book	No.	Whole/Part	PRINCIPAL DEED
1				
2				
3				

LEAVE BLANK WHERE INSTRUMENT DOES NOT AFFECT OLD SYSTEM LAND

(D) CURRENT LOCAL GOVERNMENT AREA	PARISH	COUNTY
1		
2		
3		

(E) I, Warwick David BRAGG of J.F. Gale & Lonehan Law Stationers

certify that for the purposes of Section 184D(3) of the Conveyancing Act 1919 that:

1. the registration copy is a true copy of the original and
2. the above index particulars of the original instrument [and on the annexure(s)] are complete and correct.

Signed: _____ Date: 3 SEP 1996

DEED made this Twenty-Sixth day of August 1996

BETWEEN **THE LORD BISHOP OF NEWCASTLE**, a body corporate, 250 Darby Street, Newcastle ("the Bishop")

AND **TRUSTEES OF CHURCH PROPERTY FOR THE DIOCESE OF NEWCASTLE**, a body corporate, 250 Darby Street, Newcastle ("the Trustees")

RECITALS

A Titles to several properties within the Anglican Diocese of Newcastle ("the Diocese") are vested in the Bishop pursuant to crown grants or conveyances to his predecessors and the provisions of the Anglican Church of Australia Trust Property Act 1917 ("the Act") and prior legislation the Act replaces.

B Titles to other properties of the Diocese are vested in the Trustees.

C The Bishop holds as a trustee. Section 19 of the Act provides, inter alia, that property vested in a trustee may upon the consent of the trustee "become vested in the corporate trustees of (a) Diocese"

D The Bishop is desirous to vest title to all properties which are in the name of the Bishop in the Trustees.

OPERATIVE PROVISIONS

1 The Bishop, pursuant to Section 19 of the Act, as trustee of all properties vested in him, hereby consents to the vesting of such properties in the Trustees and declares that all such properties are now vested in the Trustees.

2 The Trustees acknowledges and accepts the vesting of title to all such properties in it.

EXECUTED AS A DEED

THE COMMON SEAL of)
THE LORD BISHOP OF)
NEWCASTLE was hereto affixed)
in the presence of:)

L.S

+Roger Newcastle

THE COMMON SEAL of)
TRUSTEES OF CHURCH)
PROPERTY FOR THE DIOCESE)
OF NEWCASTLE was hereto)
affixed by the Trustees whose)
signatures appear opposite in the)
presence of:)

TRUSTEES OF CHURCH PROPERTY FOR THE DIOCESE OF NEWCASTLE

.....

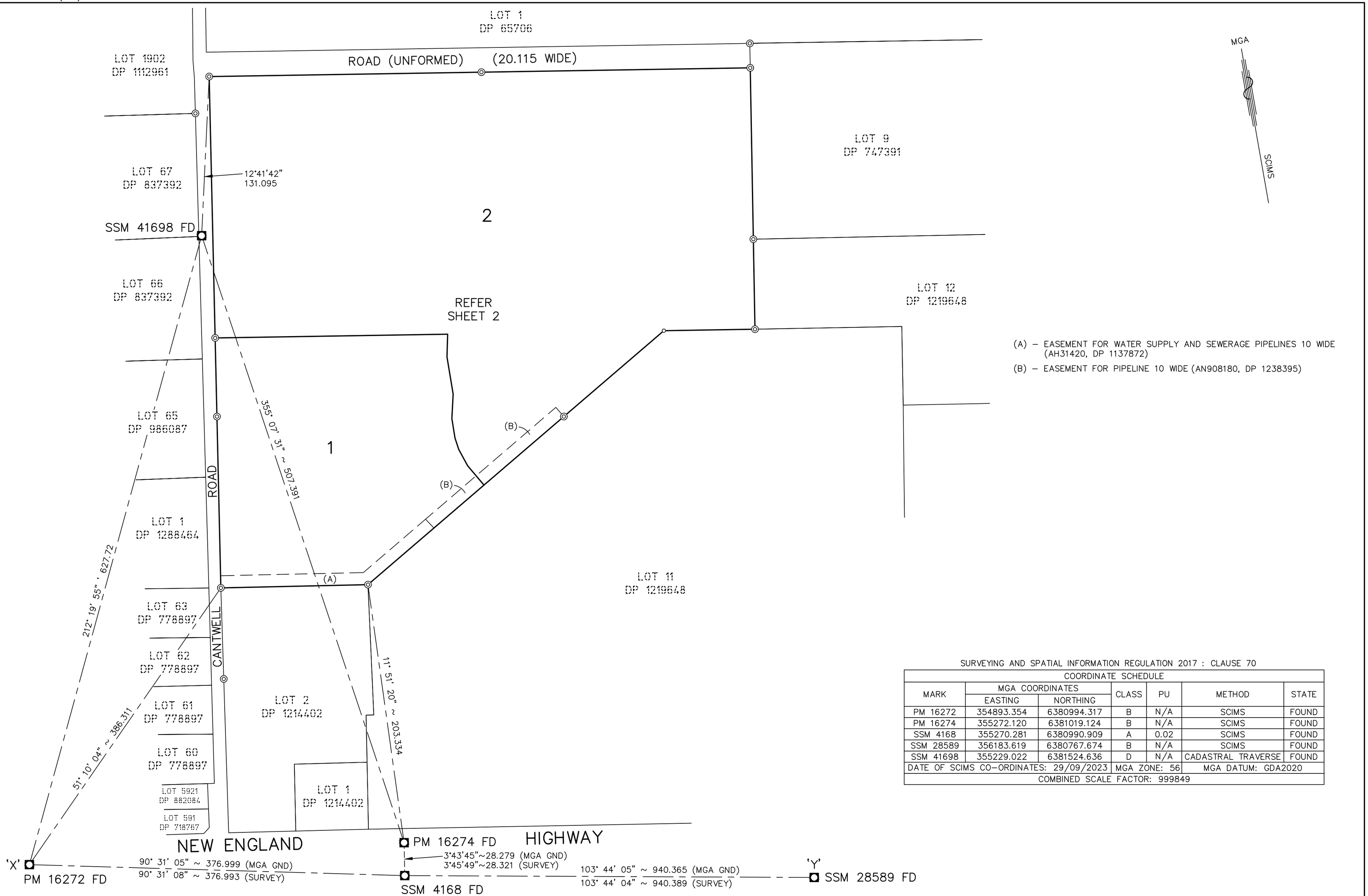
Secretary

REGISTERED IN THE
LAND TITLES OFFICE
BOOK 4143 No. 947
-3 SEP 1996

REGISTRAR GENERAL NEW SOUTH WALES

JHL:242861

J. F. GALE & LENEHAN
323X



(A) – EASEMENT FOR WATER SUPPLY AND SEWERAGE PIPELINES 10 WIDE (AH31420, DP 1137872)

(B) – EASEMENT FOR PIPELINE 10 WIDE (AN908180, DP 1238395)

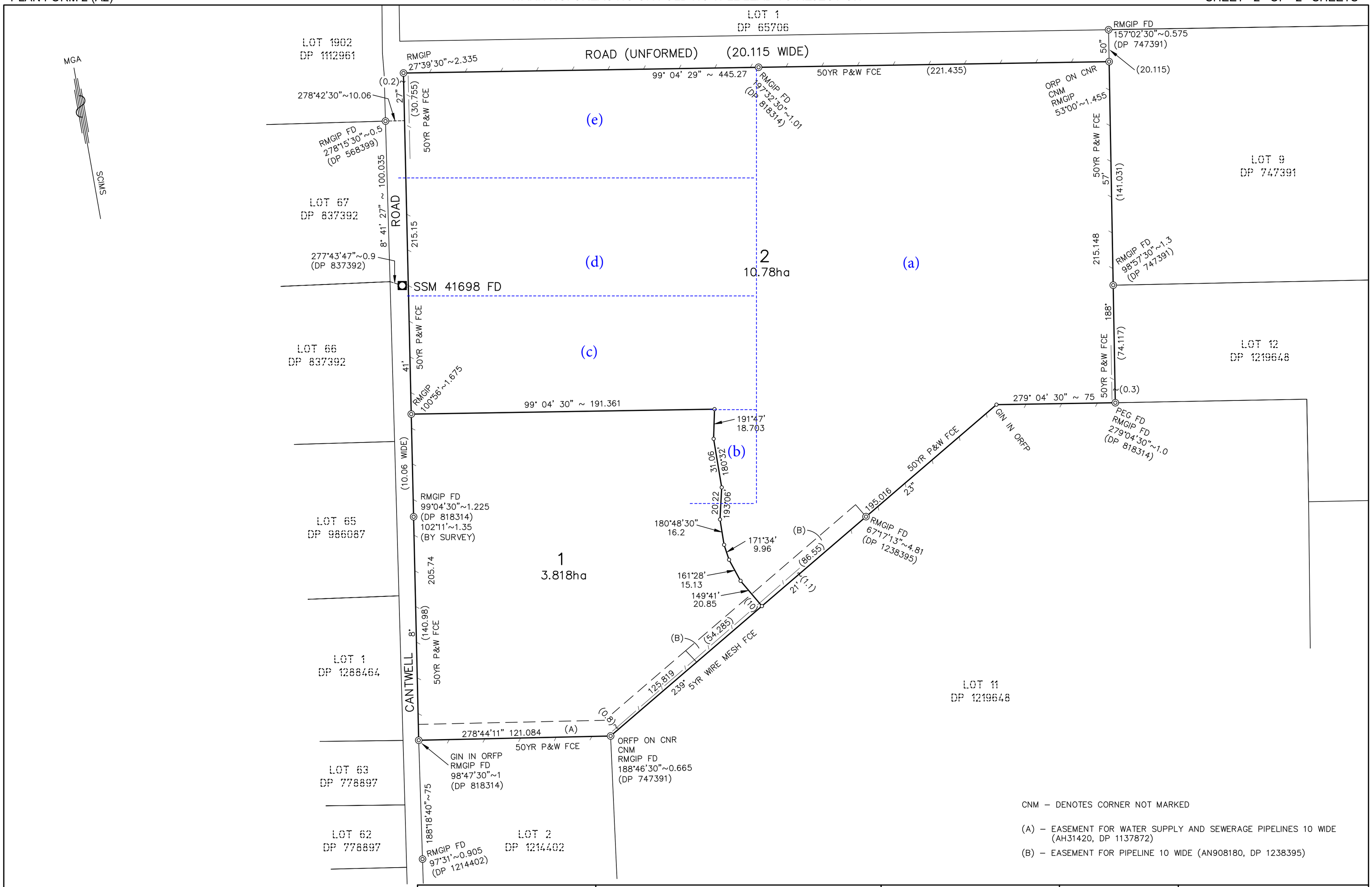
'X'–'Y' PM 16272 ~ SSM 28589
99°57'46"~1310.217 (MGA GND)
99°57'46"~1310.233 (SURVEY)

SURVEYING AND SPATIAL INFORMATION REGULATION 2017 : CLAUSE 70

COORDINATE SCHEDULE						
MARK	MGA COORDINATES		CLASS	PU	METHOD	STATE
	EASTING	NORTHING				
PM 16272	354893.354	6380994.317	B	N/A	SCIMS	FOUND
PM 16274	355272.120	6381019.124	B	N/A	SCIMS	FOUND
SSM 4168	355270.281	6380990.909	A	0.02	SCIMS	FOUND
SSM 28589	356183.619	6380767.674	B	N/A	SCIMS	FOUND
SSM 41698	355229.022	6381524.636	D	N/A	CADASTRAL TRAVERSE	FOUND
DATE OF SCIMS CO-ORDINATES: 29/09/2023			MGA ZONE: 56		MGA DATUM: GDA2020	
COMBINED SCALE FACTOR: 999849						

220064DPA_01

SURVEYOR Name: DAVID CRAIG WALLACE MONTEATH & POWYS PTY LTD Date: 23 OCTOBER 2023 Reference: 220064DPA	PLAN OF SUBDIVISION OF LOT 2 DP 818314 AND LOTS 35 TO 38 DP 975690 INCLUSIVE	LGA: MAITLAND Locality: LOCHINVAR Reduction Ratio: 1:2000 Lengths are in metres.	REGISTERED 09.04.2024	DP1299958



CNM – DENOTES CORNER NOT MARKED

(A) – EASEMENT FOR WATER SUPPLY AND SEWERAGE PIPELINES 10 WIDE (AH31420, DP 1137872)

(B) – EASEMENT FOR PIPELINE 10 WIDE (AN908180, DP 1238395)

SURVEYOR Name: DAVID CRAIG WALLACE MONTEATH & POWYS PTY LTD Date: 23 OCTOBER 2023 Reference: 220064DPA	PLAN OF SUBDIVISION OF LOT 2 DP 818314 AND LOTS 35 TO 38 DP 975690 INCLUSIVE	LGA: MAITLAND Locality: LOCHINVAR Reduction Ratio: 1:1500 Lengths are in metres.	REGISTERED 09.04.2024	DP1299958

220064DPA_01

Plan Form 6_Digital (2021)

Deposited Plan Administration Sheet | Sheet 1 of 2

OFFICE USE ONLY

Registered 09.04.2024

DP1299958

Title System: TORRENS

LGA: MAITLAND

LOCALITY: LOCHINVAR

PARISH: GOSFORTH

COUNTY: NORTHUMBERLAND

Plan of Subdivision of lot 2 DP818314 and lots 35 to 38 in DP975690 inclusive

Survey Certificate — Survey

I, David Wallace of Monteath & Powys, PO Box 2270 Dangar NSW 2309, a surveyor registered under Surveying and Spatial Information Act 2002, certify that:

The land shown in the plan was surveyed in accordance with the Surveying and Spatial Information Regulation 2017, is accurate and the survey was completed on: 23/10/2023

Urban/Rural: Urban

Datum Line: 'X' - "y"

Signature: Dated: 19 March 2024

Surveyor Identification No.: SU007663

Surveyor registered under the *Surveying and Spatial Information Act 2002.*

Crown Lands NSW/Western Lands Office Approval

I, (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature

Date

File Number

Office

Subdivision Certificate (Check One)

I, KRISTY COUSINS

- [x] Authorised Person
- [ ] General Manager
- [ ] Registered Certifier

certify that the provisions of 6.15 of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.

Signature: KCousins

Consent Authority: MAITLAND CITY COUNCIL

Date of Endorsement: 13 MARCH 2024

Subdivision Certificate Number: SC/2023/129

File Number: DA/2023/392

AUTHORISED OFFICER
Electronic signature of me, Kristy Cousins affixed by me or at my direction on 13 March 2024

Plans Used in the preparation of this survey

DP65706, DP747391, DP818314, DP837392, DP975690, DP1112961, DP1137872, DP1214402, DP1219648, DP1238395

Statement of intention to dedicate public roads, create public reserves and drainage reserves, acquire/resume land.

Surveyor's Reference 220064DPA

Signatures, Seals and Section 88B Statements should appear on the following sheet(s)

Plan Form 6_Digital (2021)	**Deposited Plan Administration Sheet**	Sheet 2 of 2
Registered 09.04.2024 OFFICE USE ONLY	DP1299958	

Plan of Subdivision of lot 2 DP818314 and lots 35 – 38 in DP975690 inclusive

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2017*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Subdivision Certificate Number

SC/2023/129

Date of Endorsement

13 MARCH 2024

STREET ADDRESS SCHEDULE

Lot	Sub-Address	Address	Road Name	Road Type	Locality
1	-	20	Cantwell	Road	Lochinvar
2	-	20A	Cantwell	Road	Lochinvar

THE COMMON SEAL OF THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF MAITLAND-NEWCASTLE was hereunto affixed in the presence of the Most Reverend Michael Robert Kennedy Bishop of the Diocese of Maitland-Newcastle under and in pursuance of a Delegation made to him under Section 9B of the Roman Catholic Church Trust Property Act, 1936, as amended:

.....

Most Reverend Michael Robert Kennedy - Bishop

witnessed by

Elizabeth Doyle

full name of witness

The Trustees of the Roman Catholic Church for the Diocese of Maitland-Newcastle
Common Seal

Surveyor's Reference 220064DPA

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
31/5/2024 2:03PM

FOLIO: 2/818314

First Title(s): OLD SYSTEM
Prior Title(s): CA55587

Recorded	Number	Type of Instrument	C.T. Issue
21/9/1992	DP818314	DEPOSITED PLAN	FOLIO CREATED EDITION 1
21/5/2009	DP1137872	DEPOSITED PLAN	
7/8/2012	AH31420	TRANSFER GRANTING EASEMENT	EDITION 2
27/12/2017	DP1238395	DEPOSITED PLAN	
21/12/2018	AN908180	TRANSFER GRANTING EASEMENT	EDITION 3
10/5/2022	AS106139	CAVEAT	EDITION 4
23/8/2022	AS371784	TRANSFER	EDITION 5
9/4/2024	DP1299958	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

advlegs PRINTED ON 31/5/2024

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
31/5/2024 2:03PM

FOLIO: 35/975690

First Title(s): OLD SYSTEM
Prior Title(s): BK 333 NO 746 BK 4143 NO 947

Recorded	Number	Type of Instrument	C.T. Issue
5/9/2006	CA101910	CONVERSION ACTION	FOLIO CREATED EDITION 1
17/9/2018	AN716513	DEPARTMENTAL DEALING	
10/5/2022	AS106139	CAVEAT	EDITION 2
23/8/2022	AS371784	TRANSFER	EDITION 3
9/4/2024	DP1299958	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

advlegs PRINTED ON 31/5/2024

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 2/1299958

SEARCH DATE	TIME	EDITION NO	DATE
31/5/2024	2:03 PM	1	9/4/2024

LAND

LOT 2 IN DEPOSITED PLAN 1299958
AT LOCHINVAR
LOCAL GOVERNMENT AREA MAITLAND
PARISH OF GOSFORTH COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1299958

FIRST SCHEDULE

THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF MAITLAND-NEWCASTLE

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AN908180 EASEMENT FOR PIPELINE 10 METRE(S) WIDE AFFECTING THE PART(S) DESIGNATED (S) SHOWN IN DP1238395

NOTATIONS

UNREGISTERED DEALINGS: NIL

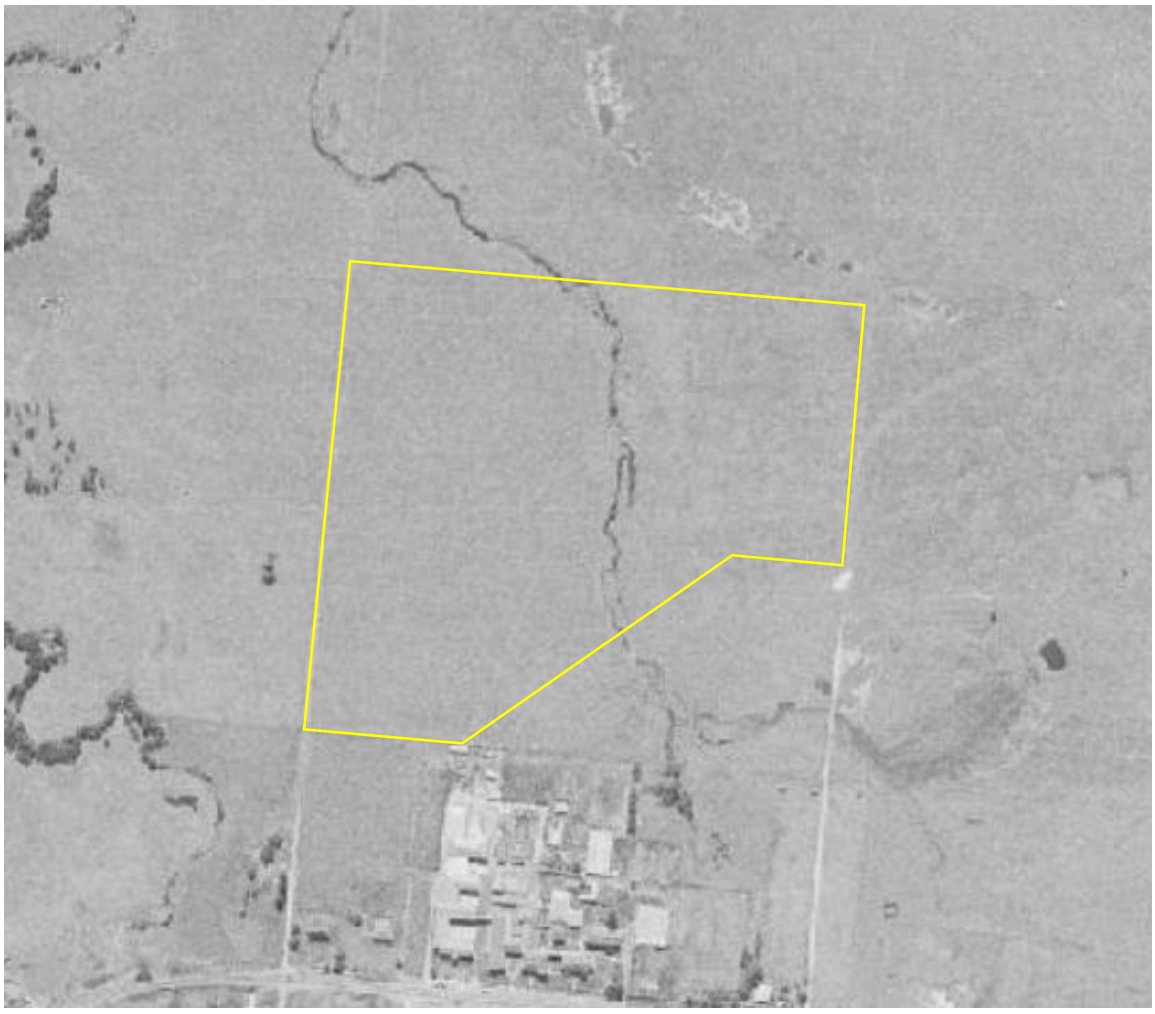
*** END OF SEARCH ***

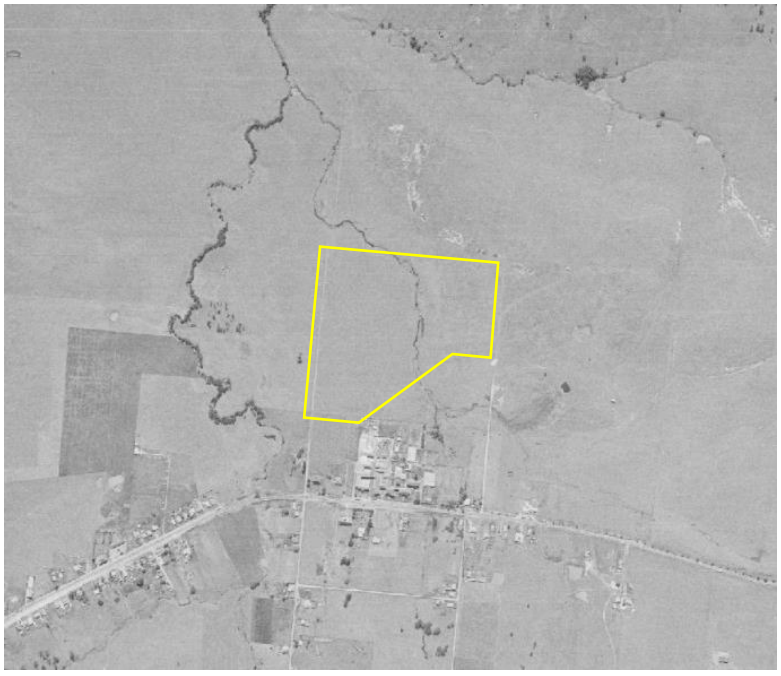
advlegs PRINTED ON 31/5/2024

APPENDIX D:
Aerial Photographs

Aerial Photograph

1971





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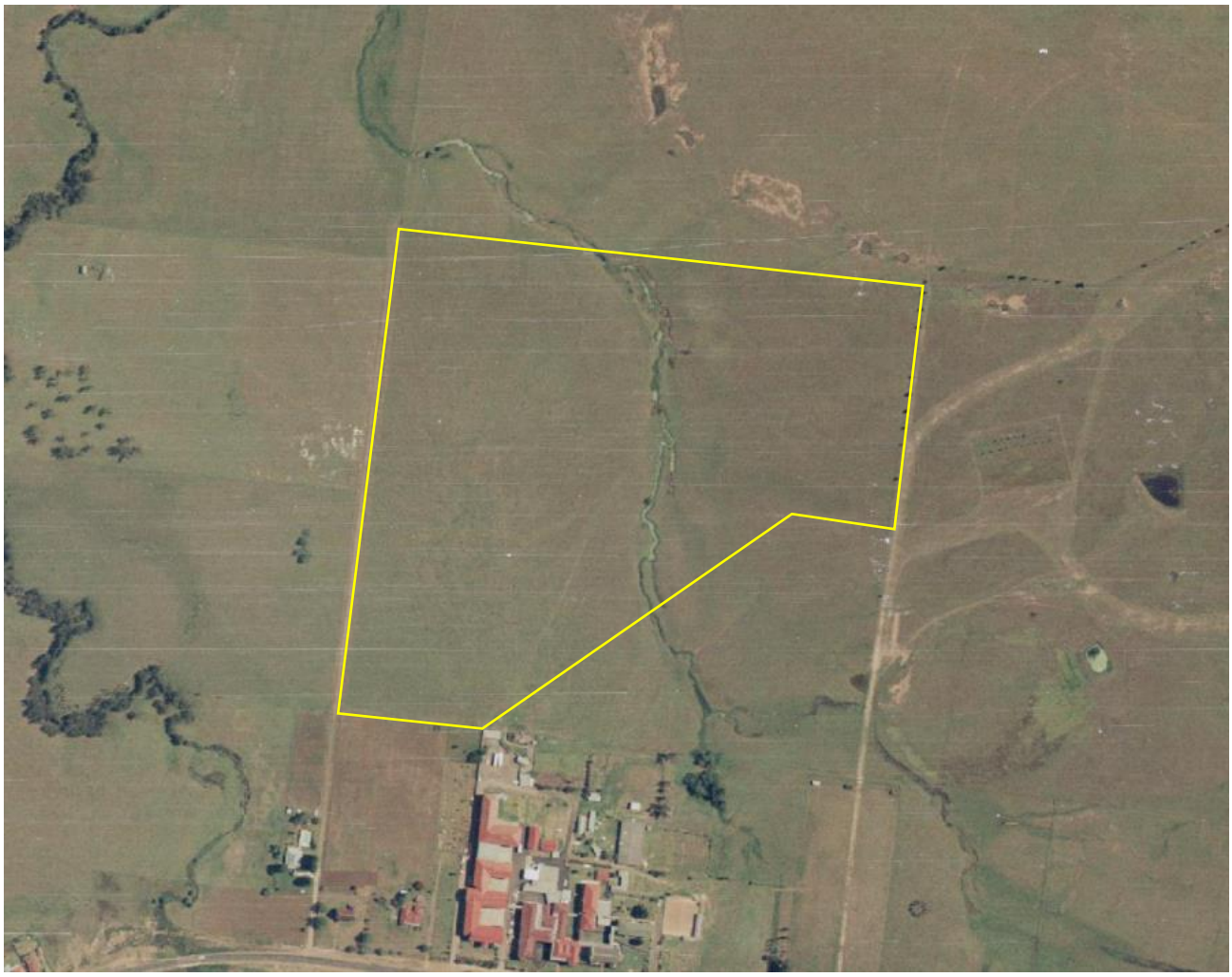
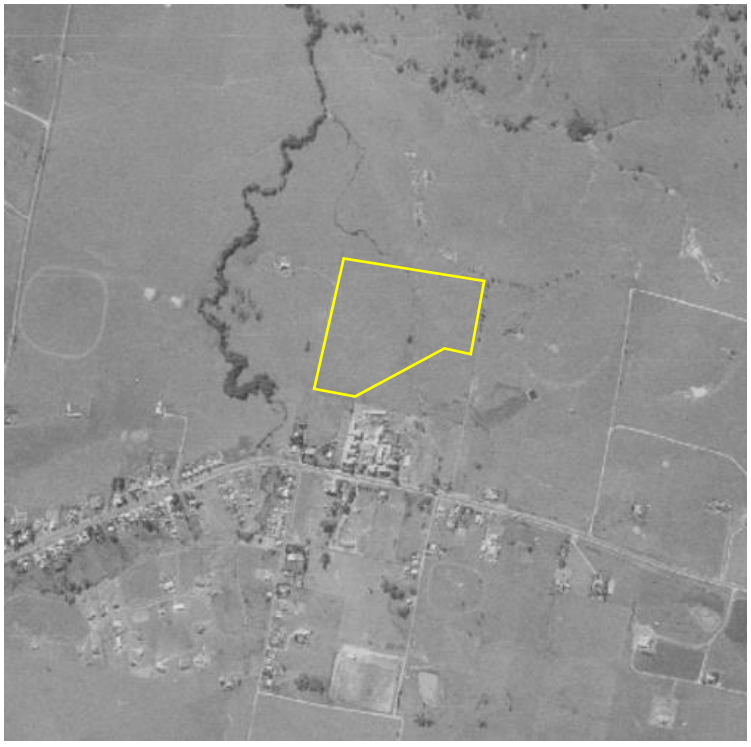


1987



1993

2006

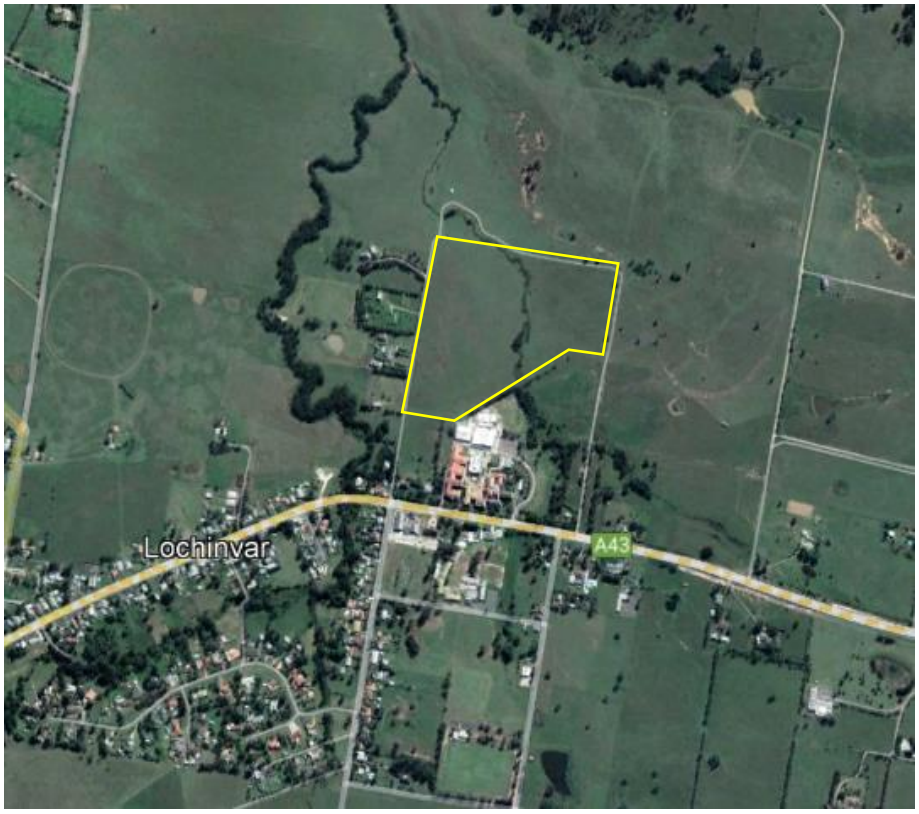

Lochinvar Creek
Cantwell Rd
Cantwell Rd
Cantwell Rd
Cantwell Rd
Holy Trinity Anglican Church, Lochinvar
St Joseph's College
New England Hwy


Lochinvar
A43
A43

2014

2023


Cantwell Rd
Holy Trinity Anglican Church, Lochinvar
St Joseph's College
New England Hwy


Lochinvar
A43

APPENDIX E:
Site Photographs

Photograph 1 - Showing general site conditions, facing north-east from the south-western portion of the site.

Photograph 2 - Showing general site conditions, facing west from the north-eastern portion of the site.

Qualtest LABORATORY (NSW) PTY LTD	Client:	CATHOLIC DIOCESE C/- MONTEATH & POWYS	Project No:	NEW24P-0120-AA
	Project:	PRELIMINARY AND DETAILED SITE INVESTIGATION	Date:	21/06/2024
	Location:	20 & 20A CANTWELL ROAD, LOCHINVAR, NSW	No:	**1 and 2**
	Title:	SITE PHOTOGRAPHS		

Photograph 3 - Showing general site conditions, facing north from the southern portion of the site.

Photograph 4 - Showing stagnant water in the central portion of Lochinvar Creek.

Qualtest LABORATORY (NSW) PTY LTD	Client:	CATHOLIC DIOCESE C/- MONTEATH & POWYS	Project No:	NEW24P-0120-AA
	Project:	PRELIMINARY AND DETAILED SITE INVESTIGATION	Date:	21/06/2024
	Location:	20 & 20A CANTWELL ROAD, LOCHINVAR, NSW	No:	**3 and 4**
	Title:	SITE PHOTOGRAPHS		

Photograph 5 - Showing part of Lochinvar Creek, located in the central-northern portion of the site.

Photograph 6 - Showing observed rubble/waste cattle crossing.

Qualtest LABORATORY (NSW) PTY LTD	Client:	CATHOLIC DIOCESE C/- MONTEATH & POWYS	Project No:	NEW24P-0120-AA
	Project:	PRELIMINARY AND DETAILED SITE INVESTIGATION	Date:	21/06/2024
	Location:	20 & 20A CANTWELL ROAD, LOCHINVAR, NSW	No:	**5 and 6**
	Title:	SITE PHOTOGRAPHS		

Photograph 7 - Showing ballast rock in the southern portion of Lochinvar Creek.

Qualtest LABORATORY (NSW) PTY LTD	Client:	CATHOLIC DIOCESE C/- MONTEATH & POWYS	Project No:	NEW24P-0120-AA
	Project:	PRELIMINARY AND DETAILED SITE INVESTIGATION	Date:	21/06/2024
	Location:	20 & 20A CANTWELL ROAD, LOCHINVAR, NSW	No:	**7**
	Title:	SITE PHOTOGRAPHS		

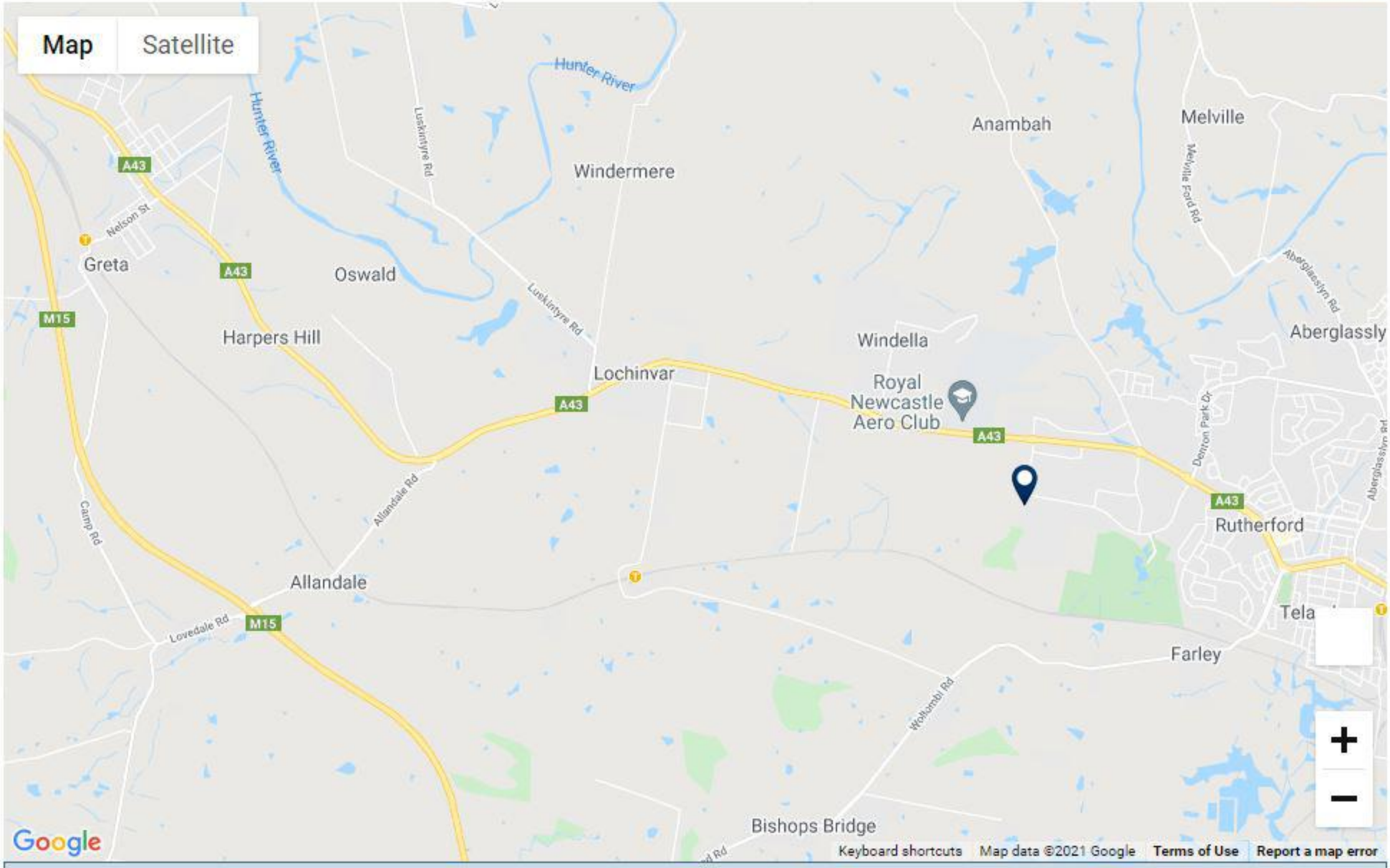
APPENDIX F:
NSW EPA Records

Map view | List view

Filter by | No filter set

Showing 1 of 49 sites

Reset map



PFAS investigation site ☑ | Multiple sites

Search results

Your search for: Suburb: LOCHINVAR

Search Again Refine Search

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... more search tips

More information about particular sites may be available from:

- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act.

See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.
This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register.POEO public register

10 July 2024

Hay Shire Council	Coke Street, Hay	Contact council
Junee Shire Council	Lord Street, Junee	Contact council
Junee Shire Council	Peel Street, Junee	Contact council
Lismore City Council	Keen Street, Lismore	Search record of EPA notices
Liverpool City Council	Mill Road, Liverpool	Contact council
Liverpool Plains Shire Council	Single Street, Werris Creek	Contact council
Maitland City Council	Charles Street, Maitland	Search record of EPA notices
Maitland City Council	Melbourne Street, East Maitland	Search record of EPA notices
Manly Council	Stuart Street, Manly	Search record of EPA notices
Mudgee Shire Council	Mortimer Street, Mudgee	Contact council
Muswellbrook Shire Council	Carl Street, Muswellbrook	Contact council
Newcastle City Council	Clyde Street, Hamilton North	Search record of EPA notices
Newcaslte City Council	Ellis Road, Turton Road, Georgetown	Contact council

Search results

Your search for: **POEO Licences** with the following criteria

Suburb - lochinvar
returned 0 results

Search Again

LIVERPOOL	Woodward Park	84 Memorial AVENUE	Other Industry	Regulation under CLM Act not required	-33.92477836	150.9169229
LIVERPOOL	Hoxton Park Bus Depot - Len Waters Estate	Lot 2, Airfield DRIVE	Other Industry	Regulation under CLM Act not required	-33.91534402	150.852797
LOFTUS	BP Freedom Fuel Service Station Loftus	127 Loftus AVENUE	Service Station	Regulation under CLM Act not required	-34.04570765	151.0508004
LONG JETTY	Metro Petroleum Service Station Long Jetty	326 The Entrance ROAD	Service Station	Under assessment	-33.35897356	151.4847709
LONG JETTY	Caltex Service Station	431 The Entrance ROAD	Service Station	Regulation under CLM Act not required	-33.36022468	151.4826553
LONG JETTY	Westside Petroleum Service Station	290-294 The Entrance ROAD	Service Station	Contamination currently regulated under CLM Act	-33.35686757	151.4861479
LONG JETTY	7-Eleven (former Mobil) Service Station	184-186 The Entrance ROAD	Service Station	Regulation under CLM Act not required	-33.35089363	151.4924904

APPENDIX G:
Section 10.7 Certificate

Certificate No.:
PC/2024/1853
Certificate Date: 30/05/2024
Fee Paid: $168.00
Receipt No.:
Your Reference: NEW24P-0120

SECTION 10.7 PLANNING CERTIFICATE
Environmental Planning and Assessment Act, 1979 as amended

APPLICANT:	Qualtest
	billysnow@qualtest.com.au
PROPERTY DESCRIPTION:	20A Cantwell Road LOCHINVAR NSW 2321
PARCEL NUMBER:	105890
LEGAL DESCRIPTION:	Lot 2 DP 1299958

IMPORTANT: Please read this Certificate carefully.

The information provided in this Certificate relates only to the land described above. If you need information about an adjoining property or nearby land, a separate certificate will be required.

All information provided is correct as at the date of issue of this Certificate. However, it is possible for changes to occur at any time after the issue of this Certificate.

For more information on the Planning Certificate please contact our Customer Experience team on 4934 9700.

SECTION 10.7(2)

The following matters relate to the land, as required by section 10.7(2) of the *Environmental Planning and Assessment Act (1979)* ("the Act") and clause 284 and Schedule 2 of the *Environment Planning and Assessment Regulation 2021.*

ITEM 1 - Names of relevant planning instruments and development control plans

The following environmental planning instruments and development control plans apply to the carrying out of development on the land:

State Environmental Planning Policies

The Minister for Planning has notified that the following State Environmental Planning Policies (SEPPs) shall be specified on Certificates under Section 10.7 of the Environmental Planning and Assessment Act, 1979.

The land is affected by the following State Environmental Planning Policies:

- SEPP65 Design Quality of Residential Apartment Development
- SEPP (Biodiversity and Conservation) 2021
- SEPP (Industry and Employment) 2021
- SEPP (Primary Production) 2021
- SEPP (Planning Systems) 2021
- SEPP (Housing) 2021
- SEPP Building Sustainability Index: BASIX 2004
- SEPP (Exempt and Complying Development Codes) 2008
- SEPP (Resources and Energy) 2021
- SEPP (Transport and Infrastructure) 2021
- SEPP (Resilience and Hazards) 2021

Local Environmental Plan (LEP)

Maitland LEP 2011, published 16 December 2011, applies to the land.

Development Control Plan prepared by Council

Maitland Development Control Plan 2011 applies to the land.

The following proposed environmental planning instruments and draft development control plans are or have been the subject of community consultation or on public exhibition under the Environmental Planning and Assessment Act 1979, apply to the carrying out of development on the land and:

Planning Proposal for a Local Environmental Plan

No draft local Environmental Plans that have been on public exhibition under the Act are applicable to the land.

Detailed information on draft environmental planning instruments is available at

the NSW Department of Planning and Environment Current LEP Proposals website; or Maitland City Council's website.

Draft Development Control Plans

No draft Development Control Plan(s) that have been on public exhibition under the Act are applicable to the land.

Draft State Environmental Planning Policies

No draft State Environmental Planning Policy(s) applying to the land is, or has been publicised the subject of community consultation or on public exhibition under the Act.

ITEM 2 – Zoning and land use under relevant planning instruments

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a State Environmental Planning Policy or proposed State Environmental Planning Policies)

Zone and Land Use Table from Local Environmental Plan

C3 Environmental Management

1 Objectives of zone

- To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values
- To provide for a limited range of development that does not have an adverse effect on those values
- To maintain and improve the connectivity of habitat between remnant areas of native vegetation

2 Permitted without Consent

Home occupations

3 Permitted with Consent

Bed and breakfast accommodation; Building identification signs; Business identification signs; Dwelling houses; Eco-tourist facilities; Environmental facilities; Environmental protection works; Extensive agriculture; Home-based child care; Home businesses; Oyster Aquaculture; Pond-based Aquaculture; Recreation areas; Roads; Tank-based Aquaculture; Water reticulation systems

4 Prohibited

Dairies (pasture-based); Industries; Multi dwelling housing; Residential flat buildings; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3.

Detailed information on the land zone mapping is available at the NSW Department of Planning and Environment ePlanning Spatial Viewer website; or Maitland City Council's website.

R1 General Residential

1 Objectives of zone

- To provide for the housing needs of the community
- To provide for a variety of housing types and densities
- To enable other land uses that provide facilities or services to meet the day to day needs of residents

2 Permitted without Consent

Home occupations

3 Permitted with Consent

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Centre-based child care facilities; Community facilities; Dwelling houses; Group homes; Home-based child care; Home industries; Hostels; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Pond-based aquaculture; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Serviced apartments; Shop top housing; Tank-based aquaculture; Any other development not specified in item 2 or 4

4 Prohibited

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Entertainment facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Information and education facilities; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities

(indoor); Recreation facilities (major); Registered clubs; Research stations; Restricted premises; Rural industries; Rural workers' dwellings; Service stations; Sewage treatment plants; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water recycling facilities; Wharf or boating facilities; Wholesale supplies.

Note: Detailed information on the local environmental plan is available at NSW Legislation – In force legislation.

Whether development standards applying to the land fix minimum land dimensions for the erection of a dwelling house on the land and, if so, the fixed minimum land dimensions.

For the land zoned C3 Environmental Management Clause 4.2A in the Maitland Local Environmental Plan 2011 applies to the land. This clause fixes a minimum lot size for the erection of a dwelling-house that is identified on the Maitland Local Environmental Plan 2011 Lot Size Map as 400,000 Square Metres.

For the land zoned R1 General Residential the Maitland LEP 2011 does not contain a development standard specifying the land dimensions required to permit the erection of a dwelling house on the land.

Is the land in an area of outstanding biodiversity value under the Biodiversity Conservation Act 2016?

The land IS NOT identified in an area of outstanding biodiversity value under the Biodiversity Conservation Act.

Is the land within a conservation area, however described?

The land IS NOT in a Heritage Conservation Area.

Is there an item of environmental heritage in a local environmental plan?

The land does NOT contain an item of Environmental Heritage.

Note: An item of environmental heritage, namely Aboriginal heritage, listed on the Aboriginal Heritage Information Management System (AHIMS), may be situated on the land. The Department of Planning and Environment, Biodiversity and Conservation Division.

ITEM 3 – Contribution plans

The name of each contributions plan under the Act, Division 7.1 applying to the land, including draft contributions plans.

- Maitland S94A Levy Contributions Plan 2006
- Lochinvar S94 Contribution Plan 2013
- Maitland City Wide Section 94 Contributions Plan 2016
- Maitland S94 Contributions Plan (City Wide) 2006

If the land is in a special contributions area under the Act, Division 7.1, the name of the area.

The land IS NOT in a special contributions area.

Note: In addition to the above developer contribution plans, Development Servicing Plans for water and sewer connection may be applicable, attracting additional contributions for the development, particularly where development will connect to water and/or sewer services.

ITEM 4 – Complying Development

If the land is land on which complying development may be carried out under each of the complying development codes under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, because of that Policy, clause 1.17A(1)(c)–(e), (2), (3) or (4), 1.18(1)(c3) or 1.19.

Complying development under the **Housing Code** may not be carried out on the land as it is:

Land identified under an environmental planning instrument as an ecologically sensitive area.

Complying development under the **Low Rise Medium Density Housing Code and Greenfield Housing Code** may not be carried out on the land as it is:

Land identified under an environmental planning instrument as an ecologically sensitive area.

Complying development under the **Rural Housing Code** may not be carried out on the land as it is not within an applicable zone and the land is:

Land identified under an environmental planning instrument as an ecologically sensitive area.

Complying development under the **Housing Alterations Code** may be carried out on the land.

Complying development under the **General Development Code** may be carried out on the land.

Complying development under the **Commercial and Industrial Alterations Code** may be carried out on the land.

Complying development under the **Commercial and Industrial (New Buildings and Additions) Code** may not be carried out on the land as it is not within an applicable zone and the land is:

Land identified under an environmental planning instrument as an ecologically sensitive area.

Complying development under the **Subdivisions Code** may be carried out on the land.

Complying development under the **Demolition Code** may be carried out on the land.

Complying development under the **Fire Safety Code** may be carried out on the land.

Complying development under the **Container Recycling Facilities Code** may not be carried out on the land.

Note: Despite the above provisions, if only part of a lot is subject to an exclusion or exemption under Clause 1.17A or Clause 1.19 of *State Environmental Planning Policy (Exempt and Complying Development Codes) Amendment (Commercial and Industrial Development and Other Matters) 2013*, complying development may be carried out on that part of the lot that is not affected by the exclusion or exemption.
The complying development may not be carried out on the land because of the following provisions of Clauses 1.17A(1)(c) to (e), (2), (3) and (4), 1.18(1)(c3) and 1.19 of the Policy.

The provisions of Clauses 1.17A(1)(c) to (e), (2), (3) and (4), 1.18(1)(c3) and 1.19 are not identified on the land. Complying development may be undertaken in accordance with the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 as amended.

Note: This information needs to be read in conjunction with the whole of the State Environment Planning Policy. If an identification, restriction or characteristic of land referred to above is not located on or does not comprise, the whole of the relevant land, complying development may be carried out on any part of the land not so identified, restricted or characterised.

Note: Information regarding whether the property is affected by flood related development controls or is bushfire prone land is identified in other sections of this certificate. If your property is identified as being impacted by bushfire or flooding, a specific technical assessment of these issues will be required as part of any Complying Development Certificate application under the State Environment Planning Policy, or a development application for any other type of development requiring consent from Council.

Note: Despite any references above advising that Complying Development may be undertaken on the land, certain Complying Development may be precluded from occurring on the land due to requirements contained in the remainder of State Environment Planning Policy (Exempt and Complying Development Codes) 2008. It is necessary to review the State Environment Planning Policy in detail to ensure that specific types of complying development may be undertaken on the land.

If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that

(a) a restriction applies to the land, but it may not apply to all of the land,
(b) and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

If the complying development codes are varied, under that Policy, clause 1.12, in relation to the land.

There are no variations to the exempt development codes within the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 that apply in the Maitland local government area.

For further information on complying development, please refer to the Department of Planning and Environment.

ITEM 5 – Exempt Development

If the land is land on which exempt development may be carried out under each of the exempt development codes under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, because of that Policy, clause 1.16(1)(b1)–(d) or 1.16A.

If exempt development may not be carried out on the land because of 1 of those clauses, the reasons why it may not be carried out under the clause.

If the council does not have sufficient information to ascertain the extent to which exempt development may or may not be carried out on the land, a statement that

a) a restriction applies to the land, but it may not apply to all of the land, and
b) the council does not have sufficient information to ascertain the extent to which exempt development may or may not be carried out on the land.

If the exempt development codes are varied, under that Policy, clause 1.12, in relation to the land.

ITEM 6 – Affected building notices and building product rectification orders

Whether the council is aware that –

The Council IS NOT aware of any affected building notice which is in force in respect of the land.

The Council is NOT aware of any building product rectification order which is in force in respect of the land and that has not been fully complied with.

The Council IS NOT aware of any notice of intention to make a building product rectification order being given in respect of the land and that is outstanding.

ITEM 7 - Land Reserved for Acquisition

Whether an environmental planning instrument or proposed environmental planning instrument referred to in section 1 makes provision in relation to the acquisition of the land by an authority of the State, as referred to in the Act, section 3.15.

No environmental planning instrument, deemed environmental planning instrument or draft environmental planning instrument applying to the land provides for the

acquisition of the land by a public authority, as referred to in section 3.15 of the Act.

ITEM 8 – Road widening and road realignment

Whether the land is affected by road widening or road realignment under –

a) The land is NOT affected by road widening under Division 2 of Part 3 of the Roads Act 1993.

b) The land is NOT affected by road widening under any environmental planning instrument

c) The land is NOT affected by any road-widening or realignment under any resolution of the Council

d) The land is NOT affected by road-widening or realignment under a resolution of the Council

Note: This item relates to Council's road proposals only. Other authorities, including the NSW Roads and Traffic Authority may have road widening proposals.

ITEM 9 – Flood related development controls

The land or part of the land IS within the flood planning area and subject to flood related development controls.

The land or part of the land IS between the flood planning area and the probable maximum flood and subject to flood related development controls.

The Maitland LEP 2011 identifies the flood planning level (FPL) as the level of a 1:100 ARI flood event plus 0.5m freeboard. The probable maximum flood has the same meaning as the Floodplain Development Manual.

Note in this section – ***flood planning area*** has the same meaning as in the Floodplain Development Manual. ***Floodplain Development Manual*** means the Floodplain Development Manual (ISBN 0 7347 5476 00) published by the NSW Government in April 2005. ***probable maximum flood*** has the same meaning as in Floodplain Development Manual

Note: The information provided in item 9 is based on the data and information presently available to the Council and on development controls in force as at the date of this certificate. The identification of land as not being subject to flood related development controls does not mean that the land is not, or may not be, subject to flooding or that the land will not in the future be subject to flood related development controls, as additional data and information regarding the land become available.

ITEM 10 – Council and other public authority policies on hazard risk restrictions

Whether any of the land is affected by an adopted policy that restricts the development of the land because of the likelihood of land slip, bush fire, tidal inundation, subsidence, acid sulfate soils, contamination, aircraft noise, salinity, coastal hazards, sea level rise or another risk, other than flooding.

All land within the Maitland Local Government Area has the potential to contain

acid sulfate soils. Clause 7.1 of the Maitland Local Environmental Plan 2011 generally applies. Development consent is required where works described in the Table to this clause are proposed on land shown on the Maitland LEP 2011 Acid Sulfate Soils Map as being of the class specified for those works.

The Council has adopted by resolution a policy on contaminated land which may restrict the development of the land to which this certificate relates. This policy is implemented when zoning or land use changes are proposed on lands which:

- are considered to be contaminated; or
- which have previously been used for certain purposes; or
- which have previously been used for certain purposes but Council's records do not have sufficient information about previous use of the land to determine whether the land is contaminated; or
- have been remediated for a specific use.

Consideration of Council's adopted policy and the application of provisions under relevant State legislation is warranted.

Note in this section –
adopted policy means a policy adopted –
a) by the council,or
b) by another public authority, if the public authority has notified the council that the policy will be included in a planning certificate issued by council.

ITEM – 11 Bush fire prone land

If any of the land is bush fire prone land, designated by the Commissioner of the NSW Rural Fire Service under the Act, section 10.3, a statement that all or some of the land is bush fire prone land.

The land is mapped as bushfire prone land and as such restrictions may apply to new development on this land.

Note – In accordance with the *Environmental Planning and Assessment Act 1979,* bush fire prone land, in relation to area, means land recorded for the time being as bush fire prone on a bush fire prone land map for the area. This mapping is subject to periodic review.

Note – The identification of land as not being bushfire prone does not mean that the land is not, or may not be affected by bushfire or that the land will not in the future be subject to bushfire related development controls, as additional data and information regarding the land become available.

ITEM – 12 Loose-fill asbestos insulation

If the land includes residential premises, within the meaning of the Home Building Act 1989, Part 8, Division 1A, that are listed on the Register kept under that Division, a statement to that effect.

There are no premises on the subject land listed on the register.

ITEM – 13 Mine subsidence

Whether the land is declared to be a mine subsidence district, within the meaning of the Coal Mine Subsidence Compensation Act 2017.

The land has NOT been proclaimed to be within a Mine Subsidence District under

the meaning of section 20 of the Coal Mine Subsidence Compensation Act 2017.

ITEM – 14 Paper subdivision information

There is no development plan that applies to the:

1) Land or that is proposed to be subject to a consent ballot
2) There is no subdivision order that applies to the land.

ITEM – 15 Property vegetation plans

If the land in relation to which a property vegetation plan is approved and in force under the Native Vegetation Act 2003, Part 4, a statement to that effect, but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act.

The Council has not received any notification from Hunter Local Land Services that this land is affected by a property vegetation plan under Part 4 of the Native Vegetation Act 2003 (and that continues in force).

ITEM – 16 Biodiversity stewardship sites

If the land is a biodiversity stewardship site under a biodiversity stewardship agreement under the Biodiversity Conservation Act 2016, Part 5, a statement to that effect, but only if the council has been notified of the existence of the agreement by the biodiversity Conservation Trust.

The Council is not aware if the land is a biodiversity stewardship site under a biodiversity stewardship agreement under part 5 of the *Biodiversity Conservation Act 2016.*

Note – Biodiversity stewardship agreements include biobanking agreements under the *Threatened Species Conservation Act 1995,* Part 7A that are taken to be biodiversity stewardship agreements under the *Biodiversity Conservation Act 2016,* Part 5.

ITEM 17 – Biodiversity certified land

If the land is biodiversity certified land under the Biodiversity Conservation Act 2016, Part 8, a statement to that effect.

The land is not biodiversity certified land under Part 8 of the Biodiversity Conservation Act 2016.

Note – Biodiversity certified land includes land certified under the *Threatened Species Conservation Act 1995,* Part 7AA that is taken to be certified under the *Biodiversity Conservation Act 2016,* Part 8.

ITEM 18 – Orders under Trees (Disputes Between Neighbours) Act 2006

Whether an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land, but only if the council has been notified or the order.

Council has NOT received notification from the Land and Environment Court of NSW that the land is affected by an Order under Trees – (Disputes Between Neighbours) Act 2006.

ITEM 19 – Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

If the *Coastal Management Act 2016* applies to the council, whether the owner, or a previous owner, of the land has given written consent to the land being subject to annual charges under the *Local Government Act 1993,* section 496B, for coastal protection services that relate to existing coastal protection works.

The owner (or any previous owner) of the land has NOT consented in writing to the land being subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

Note - In this section existing coastal protection works has the same meaning as in the Local Government Act 1993, section 553B.

Note – Existing coastal protection works are works to reduce the impact of coastal hazards on land, such as seawalls, revetments, groynes and beach nourishment, that existed before 1 January 2011

ITEM 20 – Western Sydney Aerotropolis

The State Environmental Planning Policy (Precincts – Western Parkland City) 2021 does not apply to land within the Maitland City Council local government area.

ITEM 21 – Development consent conditions for seniors housing

If State Environmental Planning Policy (Housing) 2021, Chapter 3, Part 5 applies to the land, any conditions of a development consent granted after 11 October 2007 in relation to the land that are of the kind set out in that Policy, section 88(2).

Clause 88(2) of the *State Environmental Planning Policy (Housing) 2021* restricts occupation of development approved for seniors housing to:

a) Seniors or people who have a disability
b) People who live in the same household with seniors or people who have a disability,
c) Staff employed to assist in the administration and provision of services to housing provided under this Part.

ITEM 22 – Site compatibility certificates and development consent conditions for affordable rental housing

Whether there is a current site compatibility certificate under State Environmental Planning Policy (Housing) 2021, or a former site compatibility certificate, of which the council is aware, in relation to proposed development on the land and, if there is a certificate –

a) the period for which the certificate is current, and
b) that a copy may be obtained from the Department.

If State Environmental Planning Policy (Housing) 2021, Chapter 2, Part 2, Division 1 or 5 applies to the land, any conditions of a development consent in relation to the land that are of a kind referred to in that Policy, section 21(1) or 40(1).

Any conditions of a development consent in relation to land that are kind referred

to in State Environmental Planning Policy (Affordable Rental Housing) 2009, clause 17(1) or 38(1).

Note - No Seniors Housing development consent conditions apply to this land.

Note - In this section – Former site compatibility certificate means a site compatibility certificate issued under State Environmental Planning Policy (Affordable Rental Housing) 2009.

Council is unaware if a Site Compatibility Certificate (Affordable Rental Housing) has been issued in accordance with State Environmental Planning Policy (Affordable Rental Housing) 2009.

Note. The following matters are prescribed by section 59(2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate.

Contaminated Land

a) The land to which this certificate relates is NOT significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.

b) The land to which this certificate relates is NOT subject to a management order within the meaning of the Contaminated Land Management Act 1997.

c) The land to which this certificate relates is NOT the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.

d) The land to which this certificate relates is NOT the subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.

e) Council has NOT been provided with a site audit statement, within the meaning of the Contaminated Land Management Act 1997, for the land to which this Certificate relates.

PART 2: ADDITIONAL MATTERS PROVIDED PURSUANT TO SECTION 10.7 (5)

The following information is provided in accordance with section 10.7(5) of the Environmental Planning and Assessment Act 1979. Section 10.7(6) of the Act states that a Council shall not incur any liability in respect of advice provided in good faith pursuant to sub-section 10.7(5). If this information is to be relied upon, it should be independently checked.

1. Development Consent

Councils records indicate that the land has not had any development consent granted within the five (5) years preceding the date of this certificate.

2. Draft Development Control Plan

No draft Development Control Plans apply to the land.

3. Suspension of Covenants

Clause 1.9A in the Maitland LEP 2011 applies to all land within the Maitland Local Government Area. This clause suspends any agreement, covenant or other instrument that restricts the development of land that is permissible under the

provisions of the Maitland Local Environmental Plan 2011 to the extent necessary to serve that purpose.

4. Filling of Land

Earthworks (excavation and filling of land) require development consent. Clause 7.2 in the Maitland LEP 2011 applies to all land within the Maitland Local Government Area. Earthworks (defined as both excavation and filling of land) require development consent of Council unless the works are exempt development, ancillary to other development for which development consent is required or granted, or considered by Council to be of a minor nature.

5. Development in the Vicinity of Heritage Items

Clause 5.10 in the Maitland LEP 2011 generally applies to all land in the Maitland Local Government Area, where the land is located in the vicinity of a heritage item or heritage conservation area. This Clause requires a consent authority to consider the effect of the proposed development on the heritage significance of the item or area concerned, before granting development consent.

6. Other Matters

There are no other specific matters.

Jeff Smith
General Manager

APPENDIX H:
Test Pit Logs

ENGINEERING LOG - TEST PIT

TEST PIT NO: TPQ06

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PAGE: 1 OF 1
PROJECT: PROPOSED SUBDIVISION
JOB NO: NEW24P-0120
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR
LOGGED BY: BS / BE
DATE: 12/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
SURFACE RL:
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E 0.10m				CH	TOPSOIL: Sandy CLAY - medium to high plasticity, pale grey to pale brown, fine grained sand, root affected.					TOPSOIL
		0.20m					0.10m					RESIDUAL SOIL
		E 0.30m					CLAY - medium to high plasticity, pale grey and pale brown.			HP	150	
		CBR 0.50m		0.5						HP	150	
		U50 0.65m								HP	120	
									St	HP	150	
				1.0		CH						
							Pale grey to pale brown, with pale orange, with some silt.	M > w_P		HP	250	
				1.5						HP	280	
									VSt	HP	250	
							1.90m					
				2.0			Silty CLAY - medium to high plasticity, pale grey to white and pale orange.					
						CH				HP	380	
							2.30m					
							Hole Terminated at 2.30 m					
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

TEST PIT NO: TPQ07
PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
						CH	TOPSOIL: Sandy CLAY - medium to high plasticity, dark grey-brown, fine grained sand, root affected.					TOPSOIL
							0.10m					
							CLAY - medium to high plasticity, grey-brown, with some brown, trace fine to medium grained rounded gravel.					RESIDUAL SOIL
										HP	180	
										HP	230	
				0.5						HP	250	
						CH	Pale grey to pale brown, with some brown, trace white.					
										HP	250	
				1.0								
							1.10m					
E	Not Encountered						Silty CLAY - pale grey to white and pale orange, with some extremely weathered pockets.	M > w_P	VSt	HP	390	
				1.5								
						Cl						
										HP	300	
				2.0								
							2.40m					
				2.5			Hole Terminated at 2.40 m					

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

TEST PIT NO: TPQ08

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PAGE: 1 OF 1
PROJECT: PROPOSED SUBDIVISION
JOB NO: NEW24P-0120
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
SURFACE RL:
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	E 0.10m				CH	TOPSOIL: Sandy CLAY - medium to high plasticity, dark grey-brown, fine grained sand, root affected.					TOPSOIL
		0.20m					0.15m					
		E 0.30m					CLAY - medium to high plasticity, pale brown with some pale grey.			HP	180	RESIDUAL SOIL
		0.30m							St			
		CBR 0.50m		0.5						HP	180	
										HP	200	
		U50 0.70m								HP	230	
										HP	230	
				1.0		CH		$M > w_P$		HP	300	
									VSt			
				1.5			With extremely weathered rock pockets, trace white.			HP	350	
				2.0			2.00m					
							Hole Terminated at 2.00 m Slow progress					
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

TEST PIT NO: TPQ09

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	E 0.10m				CH	0.10m TOPSOIL: Sandy CLAY - medium to high plasticity, pale grey to pale brown, fine grained sand, root affected.					TOPSOIL
		0.20m					CLAY - medium to high plasticity, pale grey and pale brown.					RESIDUAL SOIL
		E 0.30m								HP	120	
										HP	130	
		0.50m		0.5						HP	150	
		U50 0.65m								HP	130	
									St	HP	170	
				1.0				$M > w_P$				
						CH	Pale grey to white with some orange and pale brown, trace fine to medium grained sand.			HP	200	
				1.5						HP	220	
										HP	230	
									VSt	HP	280	
				2.0			With some extremely to highly weathered pockets/bands.					
							2.30m					
				2.5			Hole Terminated at 2.30 m Slow progress					

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

TEST PIT NO: TPQ10

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PAGE: 1 OF 1

PROJECT: PROPOSED SUBDIVISION
JOB NO: NEW24P-0120

LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR
LOGGED BY: BS / BE

DATE: 12/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
SURFACE RL:

TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
						CI	0.10m TOPSOIL: Sandy CLAY - medium plasticity, dark grey to brown, fine grained sand, root affected.					TOPSOIL
							CLAY - medium to high plasticity, grey-brown and pale brown.			HP	150	RESIDUAL SOIL
		0.30m										
		CBR							St	HP	180	
		0.50m		0.5								
		U50				CH				HP	180	
		0.70m								HP	310	
							Trace fine to medium grained angular gravel, trace white.	M > w_P				
				1.0						HP	310	
E	Not Encountered						1.20m CLAY - medium to high plasticity, pale grey to pale brown, with orange to brown, trace silt, trace white.		VSt	HP	300	
							Trace extremely weathered / highly weathered rock pockets.			HP	320	
				1.5						HP	340	
						CH	With extremely weathered / highly weathered rock pockets.					
				2.0				M < w_P	H - Fb			
							2.40m					
				2.5			Hole Terminated at 2.40 m Practical Refusal					

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

TEST PIT NO: TPQ11
PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	0.30m				CH	TOPSOIL: Sandy CLAY - medium to high plasticity, dark grey-brown, fine grained sand, root affected.					TOPSOIL
							0.10m CLAY - medium to high plasticity, pale grey to pale brown.			HP	120	RESIDUAL SOIL
		CBR 0.50m		0.5						HP	150	
		U50 0.70m				CH		$M > w_P$	St	HP	150	
		1.00m		1.0			Pale grey to grey, with some white and pale orange, trace silt, trace extremely weathered pockets.			HP	200	
		U50 1.20m								HP	300	
									VSt	HP	350	
				1.5			1.50m					
							Sandy CLAY - medium plasticity, pale grey to white and pale brown, with some pale orange to orange, fine to coarse grained (mostly fine to medium) grained sand.			HP	380	
							With Gravelly SAND pockets.					
						CI		$M \sim w_P$	VSt - Fb			
				2.0			2.30m					
							Hole Terminated at 2.30 m Slow progress					
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

TEST PIT NO: TPQ12

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PAGE: 1 OF 1
PROJECT: PROPOSED SUBDIVISION
JOB NO: NEW24P-0120
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR
LOGGED BY: BS / BE
DATE: 12/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
SURFACE RL:
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
						CI	TOPSOIL: Sandy CLAY - medium plasticity, dark grey to brown, fine grained sand, root affected.					TOPSOIL
							0.10m CLAY - medium to high plasticity, pale grey, with orange to red-brown.					RESIDUAL SOIL
										HP	120	
		0.30m								HP	140	
		CBR 0.50m		0.5						HP	140	
										HP	180	
		0.70m										
		U50 0.85m								HP	180	
E	Not Encountered			1.0		CH		M > w_P	St	HP	180	
										HP	180	
				1.5						HP	180	
							With some fine to coarse grained sand, with some fine to medium grained angular ironstone gravel.			HP	210	
										HP	250	
				2.0						HP	300	
									VSt	HP	350	
							Trace fine to medium grained rounded gravel.			HP	320	
										HP	350	
				2.5			2.50m					
							Hole Terminated at 2.50 m					

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density		
V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition	
D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

TEST PIT NO: TPQ13

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PAGE: 1 OF 1

PROJECT: PROPOSED SUBDIVISION
JOB NO: NEW24P-0120

LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR
LOGGED BY: BS / BE

DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
SURFACE RL:

TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	E 0.10m				CH	0.10m TOPSOIL: CLAY - medium to high plasticity, grey with brown, trace fine to medium grained sand, root affected.					TOPSOIL
		0.20m					CLAY - medium to high plasticity, pale brown to pale grey, with some brown.					RESIDUAL SOIL
		E 0.30m								HP	180	
		0.50m		0.5						HP	160	
		U50 0.65m				CH			St	HP	180	
								M > w_P		HP	150	
				1.0			1.20m CLAY - medium to high plasticity, pale grey to pale brown, with brown and pale orange, with some silt.			HP	300	
				1.5		CH	Trace extremely weathered rock pockets.		VSt	HP	300	
							1.80m ANDESITE - pale grey to pale brown, with some white and dark grey, estimated low to medium strength. 1.90m	D				HIGHLY WEATHERED ROCK
				2.0			Hole Terminated at 1.90 m Practical Refusal					
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

Qualtest LABORATORY (NSW) PTY LTD

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

TEST PIT NO: TPQ14
PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	E 0.10m 0.20m E 0.30m				GC	FILL: MIXTURE OF SOIL & CONCRETE BLOCKS: About 40% of Concrete Blocks (up to approximately 0.5m in size) in matrix of Clayey GRAVEL - fine to coarse (mostly fine to medium) grained angular, dark brown, fines of medium to high plasticity, with some fine to medium grained angular coal chitter, trace steel and brick fragments.	W				FILL
							0.20m					
						CH	CLAY - medium to high plasticity, pale grey and pale orange.	M > w_P	St	HP HP	100 120	RESIDUAL SOIL
				0.5			0.50m					
							Hole Terminated at 0.50 m					
				1.0								
				1.5								
				2.0								
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

TEST PIT NO: TPQ15

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PAGE: 1 OF 1

PROJECT: PROPOSED SUBDIVISION
JOB NO: NEW24P-0120

LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR
LOGGED BY: BS / BE

DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
SURFACE RL:

TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered					CL	TOPSOIL: Sandy CLAY - low to medium plasticity, dark grey, fine to coarse (mostly fine) grained sand, with some fine to medium grained rounded gravel, root affected in top 0.1m.					TOPSOIL
							0.35m					
				0.5			CLAY - medium to high plasticity, grey-brown, with some orange-brown.			HP	120	RESIDUAL SOIL
										HP	160	
							Pale brown to orange and grey.			HP	180	
								M > w_P	St	HP	180	
				1.0		CH						
										HP	200	
									VSt	HP	250	
				1.5								
							1.60m			HP	280	
						CI	1.70m Extremely Weathered Sandy Siltstone with soil properties: breaks down into Sandy CLAY - medium plasticity, orange-brown and pale grey to pale brown, fine grained sand, trace fine to medium grained rounded gravel.	M < w_P	H / Fb			EXTREMELY WEATHERED ROCK
							Hole Terminated at 1.70 m					
				2.0								
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

Qualtest LABORATORY (NSW) PTY LTD

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

TEST PIT NO: TPQ16
PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	E 0.10m				CH	TOPSOIL: Sandy CLAY - medium to high plasticity, dark grey-brown, fine to coarse grained (mostly fine) grained sand, with some silt, trace fine to medium grained, rounded to sub-rounded gravel, root affected.					TOPSOIL
		0.20m					0.15m					
		E 0.30m					CLAY - medium to high plasticity, grey, with some pale brown, trace fine to medium grained, rounded to sub-rounded gravel.		F - St	HP	120	RESIDUAL SOIL
		CBR 0.50m		0.5		CH		M > w_P		HP	80 - 100	
		U50 0.65m								HP	120	
										HP	150	
										HP	130	
									VSt	HP	150	
							0.80m					
						CL	Silty CLAY - low to medium plasticity, pale grey to white and pale orange to orange, with some extremely weathered pockets.			HP	220	
				1.0						HP	220	
							1.00m					EXTREMELY WEATHERED ROCK
						CL	Extremely Weathered Sandy Siltstone with soil properties: breaks down into Silty CLAY - low to medium plasticity, orange-brown and pale grey to white, with some highly weathered pockets/bands.	M < w_P	H / Fb			
							1.40m					
							1.42m	D				HIGHLY WEATHERED ROCK
				1.5			Sandy SILTSTONE - orange-brown and pale grey to white, fine grained sand in rock matrix, estimated low to medium strength, fractured, with extremely weathered pockets. (Breaks up into 60mm thick blocks).					
							Hole Terminated at 1.42 m Refusal					
				2.0								
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

TEST PIT NO: TPQ17

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	0.30m CBR & U50 0.50m		0.5 1.0 1.5 2.0 2.5		CL CH Cl	0.10m TOPSOIL: Sandy CLAY - low to medium plasticity, grey-brown, fine to medium grained sand, with some silt, root affected. CLAY - medium to high plasticity, grey. 0.90m Extremely Weathered Sandy Siltstone with soil properties: breaks down into Silty CLAY - medium plasticity, pale grey to white and orange-brown, with highly weathered pockets/bands. 1.30m Sandy SILTSTONE - pale grey to white, fine grained sand in rock matrix, estimated low to medium strength, fractured, trace extremely weathered rock pockets. 1.40m Hole Terminated at 1.40 m Slow progress	M > w_P M < w_P D	St H / Fb	HP HP HP HP HP HP	100 110 110 120 150 150	TOPSOIL RESIDUAL SOIL EXTREMELY WEATHERED ROCK HIGHLY WEATHERED ROCK

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

TEST PIT NO: TPQ18
PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	0.30m				CH	0.10m TOPSOIL: CLAY - medium to high plasticity, grey, with some brown, trace fine grained sand, root affected.					TOPSOIL
		CBR 0.50m		0.5			CLAY - medium to high plasticity, pale brown and grey-brown.		St	HP	180	RESIDUAL SOIL
		U50 0.70m								HP	180	
										HP	200	
				1.0		CH		$M > w_P$		HP	230	
				1.5					VSt	HP	230	
				2.0			2.20m			HP	280	
										HP	350	
				2.5			Hole Terminated at 2.20 m					

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

TEST PIT NO: TPQ19
PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	E 0.10m 0.20m E 0.30m		0.5 1.0 1.5 2.0		CI CH	0.10m TOPSOIL: Sandy CLAY - medium plasticity, pale grey to pale brown, fine grained sand, with some silt, root affected. CLAY - medium to high plasticity, pale grey and pale brown, trace fine grained sand. Pale grey and pale orange. 2.00m	M > w_P M < w_P	St VSt H / Fb	HP HP HP HP HP HP HP HP HP HP	120 120 210 210 350 380 450 >600 >600 >600	TOPSOIL RESIDUAL SOIL
				2.5			Hole Terminated at 2.00 m Very slow progress					

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

TEST PIT NO: TPQ20

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PAGE: 1 OF 1
PROJECT: PROPOSED SUBDIVISION
JOB NO: NEW24P-0120
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
SURFACE RL:
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	E 0.10m				CL	TOPSOIL: Sandy CLAY - low to medium plasticity, grey and dark brown, fine grained sand, root affected.					TOPSOIL
		0.15m					CLAY - medium to high plasticity, grey and brown.			HP	180	RESIDUAL SOIL
		0.20m								HP	180	
		E 0.30m							St	HP	180	
		0.50m		0.5			Pale brown and pale grey, trace orange.			HP	220	
		B & U50							VSt			
		0.80m								HP	200	
				1.0		CH		M > w_P		HP	180	
									St			
				1.5						HP	180	
										HP	250	
									VSt	HP	240	
				2.0			2.00m					
							Hole Terminated at 2.00 m					
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

TEST PIT NO: TPQ21
PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered					CH	TOPSOIL: CLAY - medium to high plasticity, dark grey-brown.					TOPSOIL
							0.15m					
							CLAY - medium to high plasticity, pale brown, with some pale grey.			HP	220	RESIDUAL SOIL
										HP	210	
									VSt			
		0.50m		0.5						HP	200	
		B								HP	150	
		0.80m							St	HP	180	
										HP	200	
				1.0								
								M > w_P	St - VSt			
						CH	Trace coarse grained angular gravel.			HP	200	
										HP	200	
		1.50m		1.5						HP	220	
		B							VSt	HP	220	
		1.80m					Brown, with grey.					
										HP	300	
				2.0						HP	300	
							2.10m					
							Hole Terminated at 2.10 m					
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

TEST PIT NO: TPQ22
PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	E 0.10m				CH	FILL-TOPSOIL: CLAY - medium to high plasticity, brown, trace fine grained sand, root affected.					FILL - TOPSOIL
							0.20m					
						CH	CLAY - medium to high plasticity, grey, with dark brown.	M > w_P		HP	250	RESIDUAL SOIL - POSSIBLE FILL
		0.40m					0.40m					
		E 0.50m		0.5		CH	CLAY - medium to high plasticity, pale brown, with pale grey.		VSt	HP	250	RESIDUAL SOIL
							0.60m			HP	200	
							Hole Terminated at 0.60 m					
				1.0								
				1.5								
				2.0								
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

ENGINEERING LOG - TEST PIT

CLIENT: CATHOLIC DIOCESE C/- MONTEATH & POWYS
PROJECT: PROPOSED SUBDIVISION
LOCATION: 20 & 20A CANTWELL ROAD, LOCHINVAR

TEST PIT NO: TPQ23
PAGE: 1 OF 1
JOB NO: NEW24P-0120
LOGGED BY: BS / BE
DATE: 13/6/24

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.5 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
E	Not Encountered	E 0.10m				CH	FILL-TOPSOIL: CLAY - medium to high plasticity, brown, trace fine grained sand, root affected.					FILL - TOPSOIL
							0.20m					
		0.40m				CH	CLAY - medium to high plasticity, grey, with dark brown.	$M > w_P$		HP	250	RESIDUAL SOIL - POSSIBLE FILL
							0.40m		VSt	HP	250	
		E 0.50m		0.5		CH	CLAY - medium to high plasticity, pale brown, with pale grey.			HP	200	RESIDUAL SOIL
							0.60m					
							Hole Terminated at 0.60 m					
				1.0								
				1.5								
				2.0								
				2.5								

LEGEND:

Water
- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes
- Gradational or transitional strata
- Definitive or distict strata change

Notes, Samples and Tests

U_{50}	50mm Diameter tube sample
CBR	Bulk sample for CBR testing
E	Environmental sample (Glass jar, sealed and chilled on site)
ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
B	Bulk Sample

Field Tests

PID	Photoionisation detector reading (ppm)
DCP(x-y)	Dynamic penetrometer test (test depth interval shown)
HP	Hand Penetrometer test (UCS kPa)

Consistency

		UCS (kPa)
VS	Very Soft	<25
S	Soft	25 - 50
F	Firm	50 - 100
St	Stiff	100 - 200
VSt	Very Stiff	200 - 400
H	Hard	>400
Fb	Friable	

Density

V	Very Loose	Density Index <15%
L	Loose	Density Index 15 - 35%
MD	Medium Dense	Density Index 35 - 65%
D	Dense	Density Index 65 - 85%
VD	Very Dense	Density Index 85 - 100%

Moisture Condition

D	Dry
M	Moist
W	Wet
W_p	Plastic Limit
W_L	Liquid Limit

APPENDIX I:
Tables

Catholic Diocese C/- Monteath and Powys
NEW24P-0120

Table 1 - Soil Analytical Results
20 and 20A Cantwell Road Lochinvar, NSW

					Field ID	TPQ06 0.0-0.1	TPQ08 0.0-0.1	TPQ09 0.0-0.1	TPQ13 0.0-0.1	TPQ14 0.0-0.1	TPQ16 0.2-0.3	TPQ19 0.0-0.1	TPQ20 0.0-0.1	TPQ22 0.0-0.1	TPQ23 0.0-0.1	SED1	SED2
					Date	13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024	13/06/2024
Analytes		**Units**	**LOR**	**HIL/HSL A [1]**	**EIL/ESL A [2]**												
pH & CEC	pH (1:5 Aqueous extract)	pH units	0.1			-	-	-	-	8.3	-	-	-	9.2	-	-	-
	Cation Exchange Capacity	meq/100g	0.05			-	-	-	-	14	-	-	-	20	-	-	-
Metals	Arsenic	mg/kg	2	100	100	4	3.1	2.9	3.2	4.7	3.8	2.9	2.7	3	3.3	3.6	18
	Cadmium	mg/kg	0.4	20		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.9
	Chromium (Trivalent)	mg/kg	1		690	-	-	-	-	-	-	-	-	-	-	-	36
	Chromium (Hexavalent)	mg/kg	1	100		-	-	-	-	-	-	-	-	-	-	-	<1
	Chromium (Total)	mg/kg	5			19	34	17	23	28	11	8.1	35	29	43	23	160
	Copper	mg/kg	5	6000	220*	< 5	11	5.1	11	14	< 5	< 5	11	11	16	11	140
	Lead	mg/kg	5	300	1100	10	10	11	17	21	12	6.3	12	9.4	14	7.7	97
	Mercury	mg/kg	5	40		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.4
	Nickel	mg/kg	5	400	240*	5.1	16	< 5	13	14	< 5	< 5	15	20	22	23	100
	Zinc	mg/kg	5	7400	690*	10	17	12	41	110	25	7.6	23	21	28	24	790
PAHs	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		0.7	-	-	-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5
	Benzo(a)pyrene TEQ (medium bound)	mg/kg	0.6	3		-	-	-	0.6	0.6	0.6	-	0.6	0.6	-	0.6	0.6
	Benzo(b&j)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
	Benzo(k)fluoranthene	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-cd)pyrene	mg/kg	0.5			-	-	-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5
	Naphthalene	mg/kg	0.5		170	-	-	-	< 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
	Total PAH	mg/kg	0.5	300		-	-	-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5
BTEX	Benzene	mg/kg	0.1	0.7	50	-	-	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1
	Toluene	mg/kg	0.1	480	85	-	-	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1
	Ethylbenzene	mg/kg	0.1	NL	70	-	-	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1
	Xylenes - Total	mg/kg	0.3	110	105	-	-	-	< 0.3	< 0.3	< 0.3	-	< 0.3	< 0.3	-	< 0.3	< 0.3
TRH	Naphthalene	mg/kg	0.5	3	170	-	-	-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5
	TRH C6-C10	mg/kg	20		180	-	-	-	< 20	< 20	< 20	-	< 20	< 20	-	< 20	< 20
	TRH C6-C10 less BTEX (F1)	mg/kg	20	50		-	-	-	< 20	< 20	< 20	-	< 20	< 20	-	< 20	< 20
	TRH >C10-C16	mg/kg	50		120	-	-	-	< 50	< 50	< 50	-	< 50	< 50	-	< 50	< 50
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	280		-	-	-	< 50	< 50	< 50	-	< 50	< 50	-	< 50	< 50
	TRH >C16-C34	mg/kg	100		1300	-	-	-	< 100	< 100	< 100	-	< 100	< 100	-	< 100	160
	TRH >C34-C40	mg/kg	100		5600	-	-	-	< 100	< 100	< 100	-	< 100	< 100	-	< 100	< 100
OCP	DDT + DDE + DDD	mg/kg	0.05	240		-	-	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05
	Aldrin and Dieldrin (Total)*	mg/kg	0.05	6		-	-	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05
	Chlordanes - Total	mg/kg	0.1	50		-	-	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1
	Endosulfan I	mg/kg	0.05	270		-	-	-	< 0.05	0.09	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05
	Endrin	mg/kg	0.05	10		-	-	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05
	Heptachlor	mg/kg	0.05	6		-	-	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05
	HCB	mg/kg	0.05	10		-	-	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05
	Methoxychlor	mg/kg	0.1	300		-	-	-	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	< 0.05
	Toxaphene	mg/kg	0.5	20		-	-	-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	-	< 0.5	< 0.5
	Total OCP	mg/kg	0.1			-	-	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1

Notes

* EIL based on pH of 8.8, CEC of 17mg/kg, and Clay content 50%, and using Ambient Background Concentration obtained from Olszowy et al (1995) using urban soils, new suburbs with high traffic , 25% percentile.

^ Guidelines for Hexavalent Chromium (VI)

^^ Guidelines for Trivalent Chromium (III)

Result Concentration exceeds adopted HIL/HSL A

Result Concentration exceeds the adopted EIL/ESL A

1 ASC NEPM (2013) Health Investigation Levels and Health Screening Levels for Vapour Intrusion, Residential, Sand 0m to <1m

2 NEPC (2013) Soil Ecological Investigation & Screening Levels, residential

Catholic Diocese C/- Monteath and Powys
NEW24P-0120

Table 2: Asbestos Results
20 and 20A Cantwell Road Lochinvar, NSW

Sample ID	Matrix	Sample Date	ACM weight (g)	ACM weight (kg)	Soil density (kg/L)	Soil Volume (L)	Asbestos Content (%)	%w/w ACM in Soil	HSL-A	%w/w FA/AF in Soil	HSL-A
TPQ06 0.0-0.1	Soil	13/06/2024	0	0	1.8	10	15	0	0.01	< 0.001	0.001
TPQ09 0.0-0.1	Soil	13/06/2024	0	0	1.8	10	15	0	0.01	< 0.001	0.001
TPQ13 0.0-0.1	Soil	13/06/2024	0	0	1.8	10	15	0	0.01	< 0.001	0.001
TPQ14 0.0-0.1	Soil	13/06/2024	0	0	1.8	10	15	0	0.01	< 0.001	0.001
TPQ16 0.0-0.1	Soil	13/06/2024	0	0	1.8	10	15	0	0.01	< 0.001	0.001
TPQ19 0.0-0.1	Soil	13/06/2024	0	0	1.8	10	15	0	0.01	< 0.001	0.001
TPQ20 0.0-0.1	Soil	13/06/2024	0	0	1.8	10	15	0	0.01	< 0.001	0.001
TPQ22 0.0-0.1	Soil	13/06/2024	0	0	1.8	10	15	0	0.01	< 0.001	0.001

Notes:

%w/w asbestos in soil calculated using: % asbestos content x bonded ACM (kg) / soil volume (L) x soil density (kg/L)

Result Concentration exceeds adopted criteria

Criteria from ASC NEPM (2013) Table 7 - Health Screening Level (HSL) for Asbestos, Residential A

Table 3: Surface Water Analytical Results
20 and 20A Cantwell Road Lochinvar, NSW

						Field ID	WS1	WS2
						Date	13/06/2024	13/06/2024
Analytes		Units	EQL	Aquatic Ecosystem[1]	Stockwatering[2]	Irrigation[3##]		
Metals	Arsenic	mg/L	5	0.013	0.5	20	< 0.001	< 0.001
	Cadmium	mg/L	0.1	0.0002	0.01	0.05	< 0.0002	< 0.0002
	Chromium	mg/L	0.05	0.001	1	1	0.002	0.001
	Copper	mg/L	0.5	0.0014	0.5	5	0.002	0.002
	Lead	mg/L	0.001	0.0034	0.1	5	< 0.001	< 0.001
	Mercury	mg/L	0.001	0.00006	0.002	0.002	< 0.0001	< 0.0001
	Nickel	mg/L	0.001	0.011	1	2	0.004	0.003
	Zinc	mg/L	0.005	0.008	20	5	0.016	0.011
BTEX	Benzene	mg/L	0.001	0.95			< 0.001	< 0.001
	Tolune	mg/L	0.001	0.180**			< 0.001	< 0.001
	Ethylbenzene	mg/L	0.001	0.080**			< 0.001	< 0.001
	Xylenes	mg/L	0.003	0.075**a			< 0.003	< 0.003
TRH	TRH C6-C9	mg/L	0.02				< 0.02	< 0.02
	TRH C10-C14	mg/L	0.05				< 0.05	< 0.05
	TRH C15-C28	mg/L	0.1				0.1	< 0.1
	TRH C29-C36	mg/L	0.1				0.3	< 0.1
	TRH C10-36 (Total)	mg/L	0.1				0.4	< 0.1
	Naphthalene	mg/L	0.01				< 0.01	< 0.01
	TRH C6-C10	mg/L	0.02				< 0.02	< 0.02
	TRH C6-C10 less BTEX (F1)	mg/L	0.02				< 0.02	< 0.02
	TRH >C10-C16	mg/L	0.05				< 0.05	< 0.05
	TRH >C10-C16 less Naphthalene (F2)	mg/L	0.05				< 0.05	< 0.05
	TRH >C16-C34	mg/L	0.1				0.3	< 0.1
	TRH >C34-C40	mg/L	0.1				< 0.1	< 0.1
PAHs	Acenaphthene	mg/L	0.001				< 0.001	< 0.001
	Acenaphthylene	mg/L	0.001				< 0.001	< 0.001
	Anthracene	mg/L	0.001	0.00001**			< 0.001	< 0.001
	Benz(a)anthracene	mg/L	0.001				< 0.001	< 0.001
	Benzo(a)pyrene	mg/L	0.001	0.0001**			< 0.001	< 0.001
	Benzo(b&j)fluoranthene	mg/L	0.001				< 0.001	< 0.001
	Benzo(g.h.i)perylene	mg/L	0.001				< 0.001	< 0.001
	Benzo(k)fluoranthene	mg/L	0.001				< 0.001	< 0.001
	Chrysene	mg/L	0.001				< 0.001	< 0.001
	Dibenz(a.h)anthracene	mg/L	0.001				< 0.001	< 0.001
	Fluoranthene	mg/L	0.001				< 0.001	< 0.001
	Fluorene	mg/L	0.001				< 0.001	< 0.001
	Indeno(1.2.3-cd)pyrene	mg/L	0.001				< 0.001	< 0.001
	Naphthalene	mg/L	0.001	0.016			< 0.001	< 0.001
	Phenanthrene	mg/L	0.001				< 0.001	< 0.001
	Pyrene	mg/L	0.001				< 0.001	< 0.001
	Total PAH	mg/L	0.001				< 0.001	< 0.001
OCP	4.4'-DDD	mg/L	0.0001				< 0.0002	< 0.0002
	4.4'-DDE	mg/L	0.0001				< 0.0002	< 0.0002
	4.4'-DDT	mg/L	0.0001	0.006			< 0.0002	< 0.0002
	a-BHC	mg/L	0.0001				< 0.0002	< 0.0002
	Aldrin	mg/L	0.0001				< 0.0002	< 0.0002
	Dieldrin	mg/L	0.0001				< 0.0002	< 0.0002
	b-BHC	mg/L	0.0001				< 0.0002	< 0.0002
	Chlordanes - Total	mg/L	0.001	0.03			< 0.002	< 0.002
	d-BHC	mg/L	0.0001				< 0.0002	< 0.0002
	Endosulfan I	mg/L	0.0001	0.03			< 0.0002	< 0.0002
	Endosulfan II	mg/L	0.0001				< 0.0002	< 0.0002
	Endosulfan sulphate	mg/L	0.0001				< 0.0002	< 0.0002
	Endrin	mg/L	0.0001	0.01			< 0.0002	< 0.0002
	Endrin aldehyde	mg/L	0.0001				< 0.0002	< 0.0002
	Endrin ketone	mg/L	0.0001				< 0.0002	< 0.0002
	g-BHC (Lindane)	mg/L	0.0001	0.2			< 0.0002	< 0.0002
	Heptachlor	mg/L	0.0001	0.01			< 0.0002	< 0.0002
	Heptachlor epoxide	mg/L	0.0001				< 0.0002	< 0.0002
	Hexachlorobenzene	mg/L	0.0001				< 0.0002	< 0.0002
	Methoxychlor	mg/L	0.0001				< 0.0002	< 0.0002
	Toxaphene	mg/L	0.01	0.1			< 0.005	< 0.005

Notes:

Concentration exceeds the Protection of 95-99% of species in Freshwater trigger values
Concentration exceeds the Stockwatering trigger values
Concentration exceeds the Irrigation trigger values

Italics LOR exceeds adopted criteria

** Low reliability value - ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality.

a. Conservatively assumes xylene is p-xylene.

Based on short-term trigger values (STV) - Short term use, up to 20 years

1 ANZECC (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality

2 ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Table 4.3.2

3 ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Tables 4.2.10 and 4.2.11

Table 4 - Field Water Quality Parameters
20 and 20A Cantwell Road Lochinvar, NSW

Sample ID	Date	Event	Dissolved Oxygen (mg/L)	Electrical Conductivity (µS/cm)	TDS (mg/L)	pH	Redox Potential (mV)	Temperature (oC)	Comments (Clarity, Odour, Colour, Sediments, Sheens etc)
WS1	13/06/2024	-	2.35	3180	-	7.15	255.1	12.8	Clear
WS2	13/06/2024	-	2.03	1201	-	7.54	227.5	13.1	Clear, slight brown tinge

Notes

ID = identification

Table 5 - Quality Control Results
20 and 20A Cantwell Road Lochinvar, NSW

		Sample ID		TPQ13 0.0-0.1	D.13.06.24	RPD %		Sample ID	WS1	WD.13.06.24	RPD %
		Date		13/06/2024	13/06/2024			Date	13/06/2024	13/06/2024	
		Type		Primary	Duplicate			Type	Primary	Duplicate	
Analytes		**Soil Units**	**LOR**				**Water Units**	**Water LOR**			
Metals	Arsenic	mg/kg	2	3.2	3.2	0	mg/L	0.001	< 0.001	< 0.001	0
	Cadmium	mg/kg	0.4	< 0.4	< 0.4	0	mg/L	0.0002	< 0.0002	< 0.0002	0
	Chromium	mg/kg	5	23	20	14	mg/L	0.001	0.002	< 0.001	67
	Copper	mg/kg	5	11	9.8	12	mg/L	0.001	0.002	0.003	40
	Lead	mg/kg	5	17	12	34	mg/L	0.001	< 0.001	< 0.001	0
	Mercury	mg/kg	5	< 0.1	< 0.1	0	mg/L	0.0001	< 0.0001	< 0.0001	0
	Nickel	mg/kg	5	13	14	7	mg/L	0.001	0.004	0.003	29
	Zinc	mg/kg	5	41	45	9	mg/L	0.005	0.016	0.014	13
PAHs	Acenaphthene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Acenaphthylene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Anthracene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Benz(a)anthracene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Benzo(a)pyrene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Benzo(b&j)fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Benzo(g.h.i)perylene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Benzo(k)fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Chrysene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Dibenz(a.h)anthracene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Fluorene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Indeno(1.2.3-cd)pyrene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Naphthalene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Phenanthrene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Pyrene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
	Total PAH	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.001	< 0.001	< 0.001	0
BTEX	Benzene	mg/kg	0.1	< 0.1	< 0.1	0	mg/L	0.001	< 0.001	< 0.001	0
	Toluene	mg/kg	0.1	< 0.1	< 0.1	0	mg/L	0.001	< 0.001	< 0.001	0
	Ethylbenzene	mg/kg	0.1	< 0.1	< 0.1	0	mg/L	0.001	< 0.001	< 0.001	0
	Xylenes - Total	mg/kg	0.3	< 0.3	< 0.3	0	mg/L	0.003	< 0.003	< 0.003	0
TRH	Naphthalene	mg/kg	0.5	< 0.5	< 0.5	0	mg/L	0.01	< 0.01	< 0.01	0
	TRH C6-C10	mg/kg	20	< 20	< 20	0	mg/L	0.02	< 0.02	< 0.02	0
	TRH >C10-C16	mg/kg	50	< 50	59	17	mg/L	0.05	< 0.05	< 0.05	0
	TRH >C16-C34	mg/kg	100	< 100	< 100	0	mg/L	0.1	0.3	0.1	100
	TRH >C34-C40	mg/kg	100	< 100	< 100	0	mg/L	0.1	< 0.1	< 0.1	0
OCPs	DDT + DDE + DDD	mg/kg	0.1	< 0.05	< 0.05	0	mg/L	0.0001	< 0.0002	< 0.0002	0
	Aldrin and Dieldrin (Total)*	mg/kg	0.1	< 0.05	< 0.05	0	mg/L	0.0001	< 0.0002	< 0.0002	0
	Chlordanes - Total	mg/kg	0.1	< 0.1	< 0.1	0	mg/L	0.001	< 0.002	< 0.002	0
	Endosulfan I	mg/kg	0.1	< 0.05	< 0.05	0	mg/L	0.0001	< 0.0002	< 0.0002	0
	Endrin	mg/kg	0.1	< 0.05	< 0.05	0	mg/L	0.0001	< 0.0002	< 0.0002	0
	Heptachlor	mg/kg	0.1	< 0.05	< 0.05	0	mg/L	0.0001	< 0.0002	< 0.0002	0
	HCB	mg/kg	0.1	< 0.05	< 0.05	0	mg/L	0.0001	< 0.0002	< 0.0002	0
	Methoxychlor	mg/kg	0.1	< 0.05	< 0.05	0	mg/L	0.0001	< 0.0002	< 0.0002	0
	Total OCP	mg/kg	0.1	< 0.1	< 0.1	0	mg/L	0.0001	< 0.002	< 0.002	0

*RPDs have only been considered where a concentration is greater than 10 times the EQL.
**High RPDs are in bold (Acceptable RPD range is 30% (>10 x EQL))

APPENDIX J:
Data Validation Report

QA/QC DATA VALIDATION REPORT
JOB NO.: NEW24P-0120 – PRELIMINARY & DETAILED SITE INVESTIGATION

Eurofins reports: 1107782-S, 1107782-AID, 1107782-W, 1113898-S

1. SAMPLE HANDLING

Item	Yes/No	Comments
Were the sample holding times met?	Yes	-
Were the samples in proper custody between collection in the field and reaching the laboratory?	Yes	-
Were the samples properly and adequately preserved?	Yes	-
Were the samples received by the laboratory in good condition?	Yes	-

Sampling Handling was:

Satisfactory :	✓	**Partially Satisfactory:**	**Unsatisfactory:**

2. PRECISION AND ACCURACY ASSESSMENT

Item	Yes/No	Comment
Was a NATA registered laboratory used?	Yes	-
Did the laboratory perform the requested tests?	Yes	-
Were the laboratory methods adopted NATA endorsed?	Yes	-
Were the appropriate test procedures followed?	Yes	-
Were the reporting limits satisfactory?	Yes	-
Was the NATA seal on the reports?	Yes	-
Were the reports signed by an authorised person?	Yes	-

Laboratory Precision and Accuracy was:

Satisfactory :	✓	**Partially Satisfactory:**	**Unsatisfactory:**

3. FIELD QA/QC

Soil, Sediment and Water Samples

No. Samples Analysed	14
Duplicates	2
Triplicates	0
Trip Blanks	0
Wash Blanks	0
Trip Spikes	0

No. Days Sampling

Item	Soil
Number of Days Sampling	1
Number of Sampling Events	1

Field Duplicates

Item	Yes/No	Comments
Were an adequate number of field duplicates collected?	Yes	Duplicates collected at a rate of 1 per 7 samples (soil and sediment), 14.3%. Duplicates collected at a rate of 1 per 2 samples (water), 50%.
Were RPDs within control limits? No Limit for 5-10 x EQL and 30% for >10 x EQL	Yes	-

Trip Blanks/Trip Spikes

Item	Yes/No	Comments
Were an adequate number of trip blanks and trip spikes collected?	Yes	No trip blanks or spikes were collected, as volatiles were not a primary contaminant of concern
Were the trip blanks free of contaminants?	NA	
Were the trip spikes within recovery limits (between 80% and 120%)	NA	

Rinsate Samples

Item	Yes/No	Comments
Were an adequate number of rinsate samples used? (1 per day of using reusable sampling equipment – trowel, hand auger etc)	Yes	Rinsate samples were not collected, as no reusable sampling equipment was used.
Were the rinsate samples free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and	N/A	

whether they are common laboratory chemicals).		

Field QC was:

Satisfactory :	✓	**Partially Satisfactory:**		**Unsatisfactory:**	

4. LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

A) Type of QA/QC Sample	Yes/No	Comments
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	Yes	
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples)	Yes	
Matrix Spikes, Matrix Spike Duplicates (1 for each soil type)	Yes	
Laboratory Control Spike	Yes	
Surrogate (where appropriate)	Yes	

Item	Yes/ No	Comments
B) Were the laboratory blanks and/or reagent blanks free of contamination?	Yes	
C) Were the spike recoveries within control limits?	Yes	
D) Were the RPDs of the laboratory duplicates within control limits?	Yes	For lead the lab quoted code Q15 which states *"The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report."* Based on this, the RPDs is not considered to affect the data usability
E) Were the surrogate recoveries within control limits?	Yes	

Laboratory Internal QA/QC was:

Satisfactory :	✓	**Partially Satisfactory:**		**Unsatisfactory:**	

5. DATA USABILITY

Item	Yes/No	Comments
Was the data directly usable?	Yes	
Was the data usable with the following corrections/modifications? (see comments)	NA	
Was the data not usable?	NA	

APPENDIX K:
Laboratory Documentation

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

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

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

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

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

Company	Qualtest	Project №	NEW24P-0120	Project Manager	Billy Snow
Address	2 Murray Dwyer Circuit NSW 2304	Project Name	Catholic Diocese - Lochinvar	EDD Format (ESdat, EQuIS etc)	Excel
Contact Name	Billy Snow				
Phone №	0432 563 250				
Special Directions					
Purchase Order					
Quote ID №	180622QUAN-1				

Sampler(s)	Billy Snow
Handed over by	
Email for Invoice	accounts@qualtest.com.au
Email for Results	libbybetz@qualtest.com.au emmacoleman@qualtest.com.au billysnow@qualtest.com.au lewiscallinan@qualtest.com.au

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

Containers — Change container type & size if necessary.

Required Turnaround Time (TAT) — Default will be 5 days if not ticked. ♦Surcharge will apply

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

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Asbestos NEPM (%w/w)	Suite B7 (TRH, PAHs, Metals, BTEX)	pH & CEC	OCPs	Metals	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	TPQ06 0.0-0.1	13/06/24	SOIL	X				X							1	1	
2	TPQ06 0.2-0.3	13/06/24	SOIL												1		
3	TPQ08 0.0-0.1	13/06/24	SOIL					X							1	1	
4	TPQ08 0.2-0.3	13/06/24	SOIL												1		
5	TPQ09 0.0-0.1	13/06/24	SOIL	X				X							1	1	
6	TPQ09 0.2-0.3	13/06/24	SOIL												1		
7	TPQ13 0.0-0.1	13/06/24	SOIL	X	X		X								1	1	
8	TPQ13 0.2-0.3	13/06/24	SOIL												1		
9	TPQ14 0.0-0.1	13/06/24	SOIL	X	X	X	X								1	1	
10	TPQ14 0.2-0.3	13/06/24	SOIL												1		
	Total Counts			4	2	1	2	3							10	5	

Method of Shipment: ☐ Courier (#) ☐ Hand Delivered ☐ Postal Name Signature Date 14-6 Time Temperature 9.7

Laboratory Use Only

Received By	Nandkill	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date 14/6	Time 1.30	Report № 1167752
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

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

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

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

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

Company	Qualtest	Project №	NEW24P-0120	Project Manager	Billy Snow
Address	2 Murray Dwyer Circuit NSW 2304	Project Name	Catholic Diocese - Lochinvar	EDD Format (ESdat, EQuIS etc)	Excel
Contact Name	Billy Snow				
Phone №	0432 563 250				
Special Directions					
Purchase Order					
Quote ID №	180622QUAN-1				

Sampler(s)	Billy Snow	
Handed over by		
Email for Invoice	accounts@qualtest.com.au	
Email for Results	libbybetz@qualtest.com.au emmacoleman@qualtest.com.au billysnow@qualtest.com.au lewiscallinan@qualtest.com.au	

Containers (Change container type & size if necessary)

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

♦Surcharge will apply

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

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

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Asbestos NEPM (%w/w)	Suite B7 (TRH, PAHs, Metals, BTEX)	pH & CEC	OCPs	Metals	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	TPQ16 0.0-0.1	13/06/24	SOIL	X	X		X								1	1	
2	TPQ16 0.2-0.3	13/06/24	SOIL												1		
3	TPQ19 0.0-0.1	13/06/24	SOIL	X				X							1	1	
4	TPQ19 0.2-0.3	13/06/24	SOIL												1		
5	TPQ20 0.0-0.1	13/06/24	SOIL	X	X		X								1	1	
6	TPQ20 0.2-0.3	13/06/24	SOIL												1		
7	TPQ22 0.0-0.1	13/06/24	SOIL	X	X	X	X								1	1	
8	TPQ22 0.4-0.5	13/06/24	SOIL												1		
9	TPQ23 0.0-0.1	13/06/24	SOIL					X							1	1	
10	TPQ23 0.4-0.5	13/06/24	SOIL												1		
	Total Counts			4	3	1	3	2							10	5	

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name		Signature		Date		Time	
Laboratory Use Only	Received By	Mendgil	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	14/6	Time	1:30	Temperature	9.7
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	1107052

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing | ABN 50 005 085 521

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

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

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

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

Company	Qualtest	Project №	NEW24P-0120	Project Manager	Billy Snow
Address	2 Murray Dwyer Circuit NSW 2304	Project Name	Catholic Diocese - Lochinvar	EDD Format (ESdat, EQuIS etc)	Excel
Contact Name	Billy Snow				
Phone №	0432 563 250				
Special Directions					
Purchase Order					
Quote ID №	180622QUAN-1				

Sampler(s)	Billy Snow
Handed over by	
Email for Invoice	accounts@qualtest.com.au
Email for Results	libbybetz@qualtest.com.au emmacoleman@qualtest.com.au billysnow@qualtest.com.au lewiscallinan@qualtest.com.au

Containers (Change container type & size if necessary.)

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

♦Surcharge will apply

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

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

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Asbestos NEPM (%w/w)	Suite B7 (TRH, PAHs, Metals, BTEX)	pH & CEC	OCPs	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	WS1	13/06/24	WATER		X		X			1	1	2				
2	WS2	13/06/24	WATER		X		X			1	1	2				
3	SED1	13/06/24	SOIL		X		X							1		
4	SED2	13/06/24	SOIL											1		
5	D.13.6.24	13/06/24	SOIL		X		X							1		
6	T.13.6.24	13/06/24	SOIL											1		
7	WD.13.6.24	13/06/24	WATER		X		X			1	1	2				
8	SD.13.6.24	13/06/24	SOIL											1		
9																
10																
	Total Counts				5		5			3	3	6		5		

Method of Shipment: ☐ Courier (#) ☐ Hand Delivered ☐ Postal — Name | Signature | Date | Time

Laboratory Use Only

Received By	Jlandau	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date 14/6	Time 1:30	Temperature 9.7
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report № 467052

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079 & 25289

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd

ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Qualtest
Contact name: Billy Snow
Project name: CATHOLIC DIOCESE - LOCHINVAR
Project ID: NEW24P-0120
Turnaround time: 5 Day
Date/Time received Jun 14, 2024 1:30 PM
Eurofins reference 1107782

Sample Information

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

Notes

Contact

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

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Billy Snow - billysnow@qualtest.com.au.

Note: A copy of these results will also be delivered to the general Qualtest email address.

Certificate of Analysis

eurofins | Environment Testing

Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention:	Billy Snow
Report	1107782-AID-V2
Project Name	CATHOLIC DIOCESE - LOCHINVAR
Project ID	NEW24P-0120
Received Date	Jun 14, 2024
Date Reported	Jul 01, 2024

Methodology:

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

Project Name CATHOLIC DIOCESE - LOCHINVAR
Project ID NEW24P-0120
Date Sampled Jun 13, 2024
Report 1107782-AID-V2

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TPQ06 0.0-0.1	24-Jn0033417	Jun 13, 2024	Approximate Sample 519g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TPQ09 0.0-0.1	24-Jn0033419	Jun 13, 2024	Approximate Sample 580g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TPQ13 0.0-0.1	24-Jn0033420	Jun 13, 2024	Approximate Sample 524g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TPQ14 0.0-0.1	24-Jn0033421	Jun 13, 2024	Approximate Sample 635g Sample consisted of: Grey-black coarse-grained clayey sandy soil, cement, brick, bitumen like material and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TPQ16 0.0-0.1	24-Jn0033422	Jun 13, 2024	Approximate Sample 449g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TPQ19 0.0-0.1	24-Jn0033423	Jun 13, 2024	Approximate Sample 589g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TPQ20 0.0-0.1	24-Jn0033424	Jun 13, 2024	Approximate Sample 449g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TPQ22 0.0-0.1	24-Jn0033425	Jun 13, 2024	Approximate Sample 502g Sample consisted of: Brown coarse-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jun 14, 2024	Indefinite

eurofins

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Eurofins Environment Testing Australia Pty Ltd
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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: CATHOLIC DIOCESE - LOCHINVAR
Project ID: NEW24P-0120

Order No.:
Report #: 1107782
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Jun 14, 2024 1:30 PM
Due: Jul 1, 2024
Priority: 5 Day
Contact Name: Billy Snow

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254												X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X		X
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	TPQ06 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033417	X				X	X		
2	TPQ08 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033418					X	X		
3	TPQ09 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033419	X				X	X		
4	TPQ13 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033420	X			X		X		X
5	TPQ14 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033421	X		X	X		X	X	X
6	TPQ16 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033422	X			X		X		X
7	TPQ19 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033423	X				X	X		
8	TPQ20 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033424	X			X		X		X
9	TPQ22 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033425	X		X	X		X	X	X
10	TPQ23 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033426					X	X		
11	WS1	Jun 13, 2024		Water	N24-Jn0033427				X				X
12	WS2	Jun 13, 2024		Water	N24-Jn0033428				X				X
13	SED1	Jun 13, 2024		Soil	N24-Jn0033429				X		X		X

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: CATHOLIC DIOCESE - LOCHINVAR
Project ID: NEW24P-0120

Order No.:
Report #: 1107782
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Jun 14, 2024 1:30 PM
Due: Jul 1, 2024
Priority: 5 Day
Contact Name: Billy Snow

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254												X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X		X
14	D.13.6.24	Jun 13, 2024		Soil	N24-Jn0033430				X		X		X
15	WD.13.6.24	Jun 13, 2024		Water	N24-Jn0033431				X				X
16	TPQ06 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033432		X						
17	TPQ08 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033433		X						
18	TPQ09 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033434		X						
19	TPQ13 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033435		X						
20	TPQ14 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033436		X						
21	TPQ16 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033437		X						
22	TPQ19 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033438		X						
23	TPQ20 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033439		X						
24	TPQ22 0.4-0.5	Jun 13, 2024		Soil	N24-Jn0033440		X						
25	TPQ23 0.4-0.5	Jun 13, 2024		Soil	N24-Jn0033441		X						
26	SED2	Jun 13, 2024		Soil	N24-Jn0033442				X		X		X
27	T.13.6.24	Jun 13, 2024		Soil	N24-Jn0033443		X						
28	SD.13.6.24	Jun 13, 2024		Soil	N24-Jn0033444		X						
Test Counts						8	12	2	11	5	13	2	11

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix may be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**). This estimate is not NATA-accredited.
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to “non-bonded / friable”.
AFM	Airborne Fibre Monitoring, e.g., by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total %w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
Sampling	Unless otherwise stated Eurofins are not responsible for sampling equipment or the sampling process.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average %w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

24-Jn0033422, 24-Jn0033424: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

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

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos

Authorised by:

Laxman Dias	Senior Analyst-Asbestos

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Attention: **Billy Snow**

Report **1107782-S-V2**
Project name CATHOLIC DIOCESE - LOCHINVAR
Project ID NEW24P-0120
Received Date Jun 14, 2024

Client Sample ID			**TPQ06 0.0-0.1**	**TPQ08 0.0-0.1**	**TPQ09 0.0-0.1**	**TPQ13 0.0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**N24-Jn0033417**	**N24-Jn0033418**	**N24-Jn0033419**	**N24-Jn0033420**
Date Sampled			**Jun 13, 2024**	**Jun 13, 2024**	**Jun 13, 2024**	**Jun 13, 2024**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	4.0	3.1	2.9	3.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	19	34	17	23
Copper	5	mg/kg	< 5	11	5.1	11
Lead	5	mg/kg	10	10	11	17
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	5.1	16	< 5	13
Zinc	5	mg/kg	10	17	12	41
Sample Properties						
% Moisture	1	%	25	22	20	28
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	%	-	-	-	80
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

Client Sample ID			TPQ06 0.0-0.1	TPQ08 0.0-0.1	TPQ09 0.0-0.1	TPQ13 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24-Jn0033417	N24-Jn0033418	N24-Jn0033419	N24-Jn0033420
Date Sampled			Jun 13, 2024	Jun 13, 2024	Jun 13, 2024	Jun 13, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	-	-	-	98
p-Terphenyl-d14 (surr.)	1	%	-	-	-	98
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-HCH	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-HCH	0.05	mg/kg	-	-	-	< 0.05
d-HCH	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	0.5	mg/kg	-	-	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	111
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	97
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

Client Sample ID			TPQ14 0.0-0.1	TPQ16 0.0-0.1	TPQ19 0.0-0.1	TPQ20 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24-Jn0033421	N24-Jn0033422	N24-Jn0033423	N24-Jn0033424
Date Sampled			Jun 13, 2024	Jun 13, 2024	Jun 13, 2024	Jun 13, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	4.7	3.8	2.9	2.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	28	11	8.1	35
Copper	5	mg/kg	14	< 5	< 5	11
Lead	5	mg/kg	21	12	6.3	12
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	14	< 5	< 5	15
Zinc	5	mg/kg	110	25	7.6	23
Sample Properties						
% Moisture	1	%	22	30	18	22
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	51	66	-	< 50
TRH C10-C36 (Total)	50	mg/kg	51	66	-	< 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	%	118	106	-	93
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	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5

Client Sample ID			TPQ14 0.0-0.1	TPQ16 0.0-0.1	TPQ19 0.0-0.1	TPQ20 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24-Jn0033421	N24-Jn0033422	N24-Jn0033423	N24-Jn0033424
Date Sampled			Jun 13, 2024	Jun 13, 2024	Jun 13, 2024	Jun 13, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	68	71	-	83
p-Terphenyl-d14 (surr.)	1	%	57	57	-	74
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	0.09	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	[Q09]INT	[Q09]INT	-	62
Tetrachloro-m-xylene (surr.)	1	%	58	57	-	68
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
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	55	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	8.3	-	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.5	meq/100g	14	-	-	-

Client Sample ID			TPQ22 0.0-0.1	TPQ23 0.0-0.1	SED1	D.13.6.24
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24-Jn0033425	N24-Jn0033426	N24-Jn0033429	N24-Jn0033430
Date Sampled			Jun 13, 2024	Jun 13, 2024	Jun 13, 2024	Jun 13, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	3.0	3.3	3.6	3.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	29	43	23	20
Copper	5	mg/kg	11	16	11	9.8
Lead	5	mg/kg	9.4	14	7.7	12
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	20	22	23	14
Zinc	5	mg/kg	21	28	24	45
Sample Properties						
% Moisture	1	%	20	22	34	27
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	-	83	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	-	83	< 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	%	126	-	69	95
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	59
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	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5

Client Sample ID			TPQ22 0.0-0.1	TPQ23 0.0-0.1	SED1	D.13.6.24
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24-Jn0033425	N24-Jn0033426	N24-Jn0033429	N24-Jn0033430
Date Sampled			Jun 13, 2024	Jun 13, 2024	Jun 13, 2024	Jun 13, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Total PAH*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	86	-	72	85
p-Terphenyl-d14 (surr.)	1	%	78	-	63	78
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	80	-	60	87
Tetrachloro-m-xylene (surr.)	1	%	68	-	56	70
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	-	< 50	59
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
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	51	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	9.2	-	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.5	meq/100g	20	-	-	-

Client Sample ID			SED2
Sample Matrix			Soil
Eurofins Sample No.			N24-Jn0033442
Date Sampled			Jun 13, 2024
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	2	mg/kg	18
Cadmium	0.4	mg/kg	0.9
Chromium	5	mg/kg	160
Copper	5	mg/kg	140
Lead	5	mg/kg	97
Mercury	0.1	mg/kg	0.4
Nickel	5	mg/kg	100
Zinc	5	mg/kg	790
Sample Properties			
% Moisture	1	%	90
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	58
TRH C15-C28	50	mg/kg	110
TRH C29-C36	50	mg/kg	75
TRH C10-C36 (Total)	50	mg/kg	243
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	%	81
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

Client Sample ID			SED2
Sample Matrix			Soil
Eurofins Sample No.			N24-Jn0033442
Date Sampled			Jun 13, 2024
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	94
p-Terphenyl-d14 (surr.)	1	%	88
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-HCH	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-HCH	0.05	mg/kg	< 0.05
d-HCH	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	0.5	mg/kg	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	136
Tetrachloro-m-xylene (surr.)	1	%	91
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	160
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	160

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
Metals M8	Sydney	Jul 01, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 21, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jun 21, 2024	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 21, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 21, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 21, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
% Moisture	Sydney	Jun 18, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Organochlorine Pesticides	Sydney	Jun 21, 2024	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
pH (1:5 Aqueous extract at 25 °C as rec.)	Sydney	Jun 20, 2024	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Melbourne	Jun 24, 2024	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Jun 26, 2024	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			

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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079 & 25289

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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: CATHOLIC DIOCESE - LOCHINVAR
Project ID: NEW24P-0120

Order No.:
Report #: 1107782
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Jun 14, 2024 1:30 PM
Due: Jul 1, 2024
Priority: 5 Day
Contact Name: Billy Snow

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254												X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X		X
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	TPQ06 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033417	X				X	X		
2	TPQ08 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033418					X	X		
3	TPQ09 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033419	X				X	X		
4	TPQ13 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033420	X			X		X		X
5	TPQ14 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033421	X		X	X		X	X	X
6	TPQ16 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033422	X			X		X		X
7	TPQ19 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033423	X				X	X		
8	TPQ20 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033424	X			X		X		X
9	TPQ22 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033425	X		X	X		X	X	X
10	TPQ23 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033426					X	X		
11	WS1	Jun 13, 2024		Water	N24-Jn0033427				X				X
12	WS2	Jun 13, 2024		Water	N24-Jn0033428				X				X
13	SED1	Jun 13, 2024		Soil	N24-Jn0033429				X		X		X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

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Project ID: NEW24P-0120

Order No.:
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Phone: 02 4968 4468
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Received: Jun 14, 2024 1:30 PM
Due: Jul 1, 2024
Priority: 5 Day
Contact Name: Billy Snow

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254												X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X		X
14	D.13.6.24	Jun 13, 2024		Soil	N24-Jn0033430				X		X		X
15	WD.13.6.24	Jun 13, 2024		Water	N24-Jn0033431				X				X
16	TPQ06 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033432		X						
17	TPQ08 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033433		X						
18	TPQ09 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033434		X						
19	TPQ13 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033435		X						
20	TPQ14 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033436		X						
21	TPQ16 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033437		X						
22	TPQ19 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033438		X						
23	TPQ20 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033439		X						
24	TPQ22 0.4-0.5	Jun 13, 2024		Soil	N24-Jn0033440		X						
25	TPQ23 0.4-0.5	Jun 13, 2024		Soil	N24-Jn0033441		X						
26	SED2	Jun 13, 2024		Soil	N24-Jn0033442				X		X		X
27	T.13.6.24	Jun 13, 2024		Soil	N24-Jn0033443		X						
28	SD.13.6.24	Jun 13, 2024		Soil	N24-Jn0033444		X						
Test Counts						8	12	2	11	5	13	2	11

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							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
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							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.5			0.5	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	96			80-120	Pass	
Cadmium	%	100			80-120	Pass	
Chromium	%	91			80-120	Pass	
Copper	%	87			80-120	Pass	
Lead	%	83			80-120	Pass	
Mercury	%	99			80-120	Pass	
Nickel	%	105			80-120	Pass	
Zinc	%	104			80-120	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	98			70-130	Pass	
TRH C10-C14	%	81			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	102			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	%	97			70-130	Pass	
Ethylbenzene	%	100			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
o-Xylene	%	96			70-130	Pass	
Xylenes - Total*	%	93			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	79			70-130	Pass	
TRH C6-C10	%	96			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	84			70-130	Pass	
Acenaphthylene	%	84			70-130	Pass	
Anthracene	%	85			70-130	Pass	
Benz(a)anthracene	%	80			70-130	Pass	
Benzo(a)pyrene	%	86			70-130	Pass	
Benzo(b&j)fluoranthene	%	79			70-130	Pass	
Benzo(g.h.i)perylene	%	82			70-130	Pass	
Benzo(k)fluoranthene	%	84			70-130	Pass	
Chrysene	%	84			70-130	Pass	
Dibenz(a.h)anthracene	%	85			70-130	Pass	
Fluoranthene	%	87			70-130	Pass	
Fluorene	%	86			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	85			70-130	Pass	
Naphthalene	%	83			70-130	Pass	
Phenanthrene	%	85			70-130	Pass	
Pyrene	%	87			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	85			70-130	Pass	
4.4'-DDD	%	83			70-130	Pass	
4.4'-DDE	%	89			70-130	Pass	
4.4'-DDT	%	96			70-130	Pass	
a-HCH	%	85			70-130	Pass	
Aldrin	%	88			70-130	Pass	
b-HCH	%	87			70-130	Pass	
d-HCH	%	88			70-130	Pass	
Dieldrin	%	87			70-130	Pass	
Endosulfan I	%	81			70-130	Pass	
Endosulfan II	%	85			70-130	Pass	
Endosulfan sulphate	%	88			70-130	Pass	
Endrin	%	93			70-130	Pass	
Endrin aldehyde	%	87			70-130	Pass	
Endrin ketone	%	95			70-130	Pass	
g-HCH (Lindane)	%	87			70-130	Pass	
Heptachlor	%	87			70-130	Pass	
Heptachlor epoxide	%	84			70-130	Pass	
Hexachlorobenzene	%	88			70-130	Pass	
Methoxychlor	%	98			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	82			70-130	Pass	
LCS - % Recovery							
Heavy Metals							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic			%	95			80-120	Pass	
Cadmium			%	96			80-120	Pass	
Chromium			%	99			80-120	Pass	
Copper			%	100			80-120	Pass	
Lead			%	96			80-120	Pass	
Mercury			%	100			80-120	Pass	
Nickel			%	101			80-120	Pass	
Zinc			%	99			80-120	Pass	
LCS - % Recovery									
Conductivity (1:5 aqueous extract at 25 °C as rec.)			%	90			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S24-Jn0053049	NCP	%	93			70-130	Pass	
TRH C10-C14	S24-Jn0040066	NCP	%	82			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S24-Jn0053049	NCP	%	91			70-130	Pass	
Toluene	S24-Jn0053049	NCP	%	89			70-130	Pass	
Ethylbenzene	S24-Jn0053049	NCP	%	95			70-130	Pass	
m&p-Xylenes	S24-Jn0053049	NCP	%	82			70-130	Pass	
o-Xylene	S24-Jn0053049	NCP	%	86			70-130	Pass	
Xylenes - Total*	S24-Jn0053049	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S24-Jn0053049	NCP	%	85			70-130	Pass	
TRH C6-C10	S24-Jn0053049	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S24-Jn0056019	NCP	%	78			70-130	Pass	
Acenaphthylene	S24-Jn0056019	NCP	%	72			70-130	Pass	
Anthracene	S24-Jn0056019	NCP	%	80			70-130	Pass	
Benz(a)anthracene	S24-Jn0056019	NCP	%	75			70-130	Pass	
Benzo(b&j)fluoranthene	S24-Jn0056019	NCP	%	73			70-130	Pass	
Benzo(g.h.i)perylene	S24-Jn0056019	NCP	%	82			70-130	Pass	
Benzo(k)fluoranthene	S24-Jn0056019	NCP	%	74			70-130	Pass	
Chrysene	S24-Jn0056019	NCP	%	86			70-130	Pass	
Dibenz(a.h)anthracene	S24-Jn0056019	NCP	%	83			70-130	Pass	
Fluoranthene	S24-Jn0056019	NCP	%	79			70-130	Pass	
Fluorene	S24-Jn0056019	NCP	%	81			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S24-Jn0056019	NCP	%	81			70-130	Pass	
Naphthalene	S24-Jn0056019	NCP	%	78			70-130	Pass	
Pyrene	S24-Jn0056019	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S24-Jn0057094	NCP	%	84			70-130	Pass	
4.4'-DDD	S24-Jn0057094	NCP	%	75			70-130	Pass	
4.4'-DDE	S24-Jn0057094	NCP	%	79			70-130	Pass	
4.4'-DDT	S24-Jn0055802	NCP	%	70			70-130	Pass	
a-HCH	S24-Jn0057094	NCP	%	80			70-130	Pass	
Aldrin	S24-Jn0057094	NCP	%	84			70-130	Pass	
b-HCH	S24-Jn0057094	NCP	%	75			70-130	Pass	
d-HCH	S24-Jn0057094	NCP	%	81			70-130	Pass	
Dieldrin	S24-Jn0057094	NCP	%	79			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan I	S24-Jn0057094	NCP	%	80			70-130	Pass	
Endosulfan II	S24-Jn0057094	NCP	%	74			70-130	Pass	
Endosulfan sulphate	S24-Jn0057094	NCP	%	81			70-130	Pass	
Endrin	S24-Jn0057094	NCP	%	78			70-130	Pass	
Endrin aldehyde	S24-Jn0057094	NCP	%	80			70-130	Pass	
Endrin ketone	S24-Jn0057094	NCP	%	88			70-130	Pass	
g-HCH (Lindane)	S24-Jn0057094	NCP	%	83			70-130	Pass	
Heptachlor	S24-Jn0057094	NCP	%	73			70-130	Pass	
Heptachlor epoxide	S24-Jn0057094	NCP	%	82			70-130	Pass	
Hexachlorobenzene	S24-Jn0057094	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S24-Jn0040066	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Benzo(a)pyrene	S24-Jn0060687	NCP	%	89			70-130	Pass	
Phenanthrene	S24-Jn0060687	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Methoxychlor	S24-Jn0056901	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	N24-Jn0033426	CP	%	99			75-125	Pass	
Cadmium	N24-Jn0033426	CP	%	111			75-125	Pass	
Chromium	N24-Jn0033426	CP	%	106			75-125	Pass	
Copper	N24-Jn0033426	CP	%	94			75-125	Pass	
Lead	N24-Jn0033426	CP	%	92			75-125	Pass	
Mercury	N24-Jn0033426	CP	%	110			75-125	Pass	
Nickel	N24-Jn0033426	CP	%	118			75-125	Pass	
Zinc	N24-Jn0033426	CP	%	115			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	N24-Jn0033417	CP	%	25	23	9.1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S24-Jn0040065	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S24-Jn0040065	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S24-Jn0040065	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Naphthalene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	N24-Jn0033420	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	N24-Jn0033420	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	N24-Jn0033420	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	N24-Jn0033420	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	S24-Jn0040065	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S24-Jn0040065	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S24-Jn0040065	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	N24-Jn0033421	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	N24-Jn0033421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	N24-Jn0033421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	N24-Jn0033421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	N24-Jn0033421	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	N24-Jn0033421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	N24-Jn0033421	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	N24-Jn0033421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	N24-Jn0033421	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	B24-Jn0062087	NCP	uS/cm	250	250	<1	30%	Pass	
pH (1:5 Aqueous extract at 25 °C as rec.)	N24-Jn0033350	NCP	pH Units	9.6	9.7	<1	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	L24-Jn0049784	NCP	meq/100g	8.0	8.3	2.8	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	N24-Jn0033425	CP	mg/kg	3.0	3.7	23	30%	Pass	
Cadmium	N24-Jn0033425	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	N24-Jn0033425	CP	mg/kg	29	38	26	30%	Pass	
Copper	N24-Jn0033425	CP	mg/kg	11	13	18	30%	Pass	
Lead	N24-Jn0033425	CP	mg/kg	9.4	13	32	30%	Fail	Q15
Mercury	N24-Jn0033425	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	N24-Jn0033425	CP	mg/kg	20	26	25	30%	Pass	
Zinc	N24-Jn0033425	CP	mg/kg	21	27	24	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	N24-Jn0033429	CP	%	34	36	7.9	30%	Pass	

Comments

V2- new version with repeated metals on Jn0033442 as per client request.

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
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal
Fang Yee Tan	Senior Analyst-Metal
Laxman Dias	Senior Analyst-Asbestos
Mary Makarios	Senior Analyst-Inorganic
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Sample Properties
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Attention: **Billy Snow**

Report **1107782-W-V2**
Project name CATHOLIC DIOCESE - LOCHINVAR
Project ID NEW24P-0120
Received Date Jun 14, 2024

Client Sample ID			**WS1**	**WS2**	**WD.13.6.24**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins Sample No.			**N24-Jn0033427**	**N24-Jn0033428**	**N24-Jn0033431**
Date Sampled			**Jun 13, 2024**	**Jun 13, 2024**	**Jun 13, 2024**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	0.3	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	0.4	< 0.1	< 0.1
BTEX					
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	121	122	119
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001

Client Sample ID			WS1	WS2	WD.13.6.24
Sample Matrix			Water	Water	Water
Eurofins Sample No.			N24-Jn0033427	N24-Jn0033428	N24-Jn0033431
Date Sampled			Jun 13, 2024	Jun 13, 2024	Jun 13, 2024
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	[Q09]INT	71	85
p-Terphenyl-d14 (surr.)	1	%	[Q09]INT	117	[Q09]INT
Organochlorine Pesticides					
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	[Q09]INT	104	144
Tetrachloro-m-xylene (surr.)	1	%	[Q09]INT	111	148
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	0.3	< 0.1	0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	0.3	< 0.1	0.1
Heavy Metals					
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.002	0.001	< 0.001
Copper	0.001	mg/L	0.002	0.002	0.003
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.004	0.003	0.003
Zinc	0.005	mg/L	0.016	0.011	0.014

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	Sydney	Jun 21, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jun 21, 2024	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 21, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 21, 2024	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 21, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Jun 21, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Organochlorine Pesticides	Sydney	Jun 21, 2024	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: CATHOLIC DIOCESE - LOCHINVAR
Project ID: NEW24P-0120

Order No.:
Report #: 1107782
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Jun 14, 2024 1:30 PM
Due: Jul 1, 2024
Priority: 5 Day
Contact Name: Billy Snow

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254												X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X		X
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	TPQ06 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033417	X				X	X		
2	TPQ08 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033418					X	X		
3	TPQ09 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033419	X				X	X		
4	TPQ13 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033420	X			X		X		X
5	TPQ14 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033421	X		X	X		X	X	X
6	TPQ16 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033422	X			X		X		X
7	TPQ19 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033423	X				X	X		
8	TPQ20 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033424	X			X		X		X
9	TPQ22 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033425	X		X	X		X	X	X
10	TPQ23 0.0-0.1	Jun 13, 2024		Soil	N24-Jn0033426					X	X		
11	WS1	Jun 13, 2024		Water	N24-Jn0033427				X				X
12	WS2	Jun 13, 2024		Water	N24-Jn0033428				X				X
13	SED1	Jun 13, 2024		Soil	N24-Jn0033429				X		X		X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
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Received: Jun 14, 2024 1:30 PM
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Melbourne Laboratory - NATA # 1261 Site # 1254												X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X		X
14	D.13.6.24	Jun 13, 2024		Soil	N24-Jn0033430				X		X		X
15	WD.13.6.24	Jun 13, 2024		Water	N24-Jn0033431				X				X
16	TPQ06 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033432		X						
17	TPQ08 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033433		X						
18	TPQ09 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033434		X						
19	TPQ13 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033435		X						
20	TPQ14 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033436		X						
21	TPQ16 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033437		X						
22	TPQ19 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033438		X						
23	TPQ20 0.2-0.3	Jun 13, 2024		Soil	N24-Jn0033439		X						
24	TPQ22 0.4-0.5	Jun 13, 2024		Soil	N24-Jn0033440		X						
25	TPQ23 0.4-0.5	Jun 13, 2024		Soil	N24-Jn0033441		X						
26	SED2	Jun 13, 2024		Soil	N24-Jn0033442				X		X		X
27	T.13.6.24	Jun 13, 2024		Soil	N24-Jn0033443		X						
28	SD.13.6.24	Jun 13, 2024		Soil	N24-Jn0033444		X						
Test Counts						8	12	2	11	5	13	2	11

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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	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
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	%	111			70-130	Pass	
TRH C10-C14	%	88			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	115			70-130	Pass	
Toluene	%	121			70-130	Pass	
Ethylbenzene	%	113			70-130	Pass	
m&p-Xylenes	%	116			70-130	Pass	
o-Xylene	%	111			70-130	Pass	
Xylenes - Total*	%	114			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	113			70-130	Pass	
TRH C6-C10	%	110			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	80			70-130	Pass	
Acenaphthylene	%	84			70-130	Pass	
Anthracene	%	79			70-130	Pass	
Benz(a)anthracene	%	80			70-130	Pass	
Benzo(a)pyrene	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	%	77			70-130	Pass	
Benzo(g.h.i)perylene	%	73			70-130	Pass	
Benzo(k)fluoranthene	%	82			70-130	Pass	
Chrysene	%	80			70-130	Pass	
Dibenz(a.h)anthracene	%	74			70-130	Pass	
Fluoranthene	%	87			70-130	Pass	
Fluorene	%	83			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	75			70-130	Pass	
Phenanthrene	%	85			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pyrene	%	86			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	95			70-130	Pass	
4.4'-DDD	%	91			70-130	Pass	
4.4'-DDE	%	91			70-130	Pass	
4.4'-DDT	%	97			70-130	Pass	
a-HCH	%	93			70-130	Pass	
Aldrin	%	97			70-130	Pass	
b-HCH	%	94			70-130	Pass	
d-HCH	%	98			70-130	Pass	
Dieldrin	%	93			70-130	Pass	
Endosulfan I	%	92			70-130	Pass	
Endosulfan II	%	91			70-130	Pass	
Endosulfan sulphate	%	93			70-130	Pass	
Endrin	%	99			70-130	Pass	
Endrin aldehyde	%	102			70-130	Pass	
Endrin ketone	%	94			70-130	Pass	
g-HCH (Lindane)	%	96			70-130	Pass	
Heptachlor	%	97			70-130	Pass	
Heptachlor epoxide	%	95			70-130	Pass	
Hexachlorobenzene	%	93			70-130	Pass	
Methoxychlor	%	90			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	83			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	87			80-120	Pass	
Cadmium	%	90			80-120	Pass	
Chromium	%	102			80-120	Pass	
Copper	%	100			80-120	Pass	
Lead	%	102			80-120	Pass	
Mercury	%	98			80-120	Pass	
Nickel	%	93			80-120	Pass	
Zinc	%	95			80-120	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	S24-Jn0059284	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S24-Jn0059284	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S24-Jn0036632	NCP	%	81			75-125	Pass	
Cadmium	S24-Jn0036632	NCP	%	84			75-125	Pass	
Chromium	S24-Jn0036632	NCP	%	95			75-125	Pass	
Copper	S24-Jn0036632	NCP	%	94			75-125	Pass	
Lead	S24-Jn0036632	NCP	%	95			75-125	Pass	
Mercury	S24-Jn0036632	NCP	%	91			75-125	Pass	
Nickel	S24-Jn0036632	NCP	%	88			75-125	Pass	
Zinc	S24-Jn0036632	NCP	%	88			75-125	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organochlorine Pesticides				Result 1					
Chlordanes - Total	N24-Jn0033428	CP	%	85			70-130	Pass	
4.4'-DDD	N24-Jn0033428	CP	%	82			70-130	Pass	
4.4'-DDE	N24-Jn0033428	CP	%	80			70-130	Pass	
4.4'-DDT	N24-Jn0033428	CP	%	81			70-130	Pass	
a-HCH	N24-Jn0033428	CP	%	83			70-130	Pass	
Aldrin	N24-Jn0033428	CP	%	85			70-130	Pass	
b-HCH	N24-Jn0033428	CP	%	77			70-130	Pass	
d-HCH	N24-Jn0033428	CP	%	88			70-130	Pass	
Dieldrin	N24-Jn0033428	CP	%	81			70-130	Pass	
Endosulfan I	N24-Jn0033428	CP	%	84			70-130	Pass	
Endosulfan II	N24-Jn0033428	CP	%	81			70-130	Pass	
Endosulfan sulphate	N24-Jn0033428	CP	%	82			70-130	Pass	
Endrin	N24-Jn0033428	CP	%	83			70-130	Pass	
Endrin aldehyde	N24-Jn0033428	CP	%	94			70-130	Pass	
Endrin ketone	N24-Jn0033428	CP	%	81			70-130	Pass	
g-HCH (Lindane)	N24-Jn0033428	CP	%	86			70-130	Pass	
Heptachlor	N24-Jn0033428	CP	%	84			70-130	Pass	
Heptachlor epoxide	N24-Jn0033428	CP	%	84			70-130	Pass	
Hexachlorobenzene	N24-Jn0033428	CP	%	82			70-130	Pass	
Methoxychlor	N24-Jn0033428	CP	%	76			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	S24-Jn0036806	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S24-Jn0053970	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S24-Jn0053970	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S24-Jn0053970	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S24-Jn0036806	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S24-Jn0036806	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S24-Jn0036806	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S24-Jn0036806	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S24-Jn0036806	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S24-Jn0036806	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S24-Jn0036806	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S24-Jn0036806	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Indeno(1.2.3-cd)pyrene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	N24-Jn0033427	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	N24-Jn0033427	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor epoxide	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Hexachlorobenzene	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	N24-Jn0033427	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	N24-Jn0033427	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S24-Jn0053970	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S24-Jn0053970	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S24-Jn0053970	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	N24-Jn0033524	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	N24-Jn0033524	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	N24-Jn0033524	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	N24-Jn0033524	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	N24-Jn0033524	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	N24-Jn0033524	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	N24-Jn0033524	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	N24-Jn0033524	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
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC

Authorised by:

Andrew Black	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

3 DAY TAT ADDITIONAL ANALYSIS: FW: Batch 1107782 additional testing

Andrew Black <AndrewBlack@eurofins.com>
Tue 2024-07-02 11:01 AM
To:#AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

1 attachments (830 KB)
Batch 110782 additional testing;

Urgent 3 day TAT additional thanks team

Andrew Black
Analytical Services Manager

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1 / 2 Frost Drive
Mayfield West, NSW, 2304
Phone: +61 2 9900 8490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website: eurofins.com.au/environmental-testing
https://www.eurofins-estore.com.au/

Please note my work hours are 8:30am-5:30pm, anything outside of that I will get to the next day. Contact evening shift ASM for anything urgent.

From: Emma Coleman <EmmaColeman@qualtest.com.au>
Sent: Tuesday, July 2, 2024 11:00 AM
To: Andrew Black <AndrewBlack@eurofins.com>
Subject: Batch 110782 additional testing

Hi Andrew,
Can I please get sample SED2 tested for chromium speciation on a 3 day TAT. Thanks

Emma Coleman
Senior Environmental Scientist

Qualtest
LABORATORY (NSW) PTY LTD

Mob: 0429 359 411
Tel: 02 4968 4468
Web: www.qualtest.com.au
2 Murray Dwyer Circuit, Mayfield West, NSW, 2304

emmacoleman@qualtest.com.au

eurofins | Environment Testing

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079 & 25289

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NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Qualtest
Contact name: Billy Snow
Project name: ADDITIONAL: CATHOLIC DIOCESE-LOCHINVAR
Project ID: Not provided
Turnaround time: 3 Day
Date/Time received Jul 2, 2024 11:01 AM
Eurofins reference 1113898

Sample Information

✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

✓ All samples have been received as described on the above COC.

✓ COC has been completed correctly.

✓ Attempt to chill was evident.

✓ Appropriately preserved sample containers have been used.

✓ All samples were received in good condition.

✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

✓ Appropriate sample containers have been used.

✓ Sample containers for volatile analysis received with zero headspace.

X Split sample sent to requested external lab.

X Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Contact

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

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Billy Snow - billysnow@qualtest.com.au.

Note: A copy of these results will also be delivered to the general Qualtest email address.

Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Billy Snow**

Report **1113898-S**
Project name ADDITIONAL: CATHOLIC DIOCESE-LOCHINVAR
Received Date Jul 02, 2024

Client Sample ID			**SED2**
Sample Matrix			**Soil**
Eurofins Sample No.			**S24-Jl0006502**
Date Sampled			**Jun 13, 2024**
Test/Reference	LOR	Unit	
Chromium (hexavalent)	1	mg/kg	< 1
Chromium (trivalent)	5	mg/kg	36
Heavy Metals			
Chromium	5	mg/kg	36
Sample Properties			
% Moisture	1	%	62

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
Chromium (speciated)			
Chromium (hexavalent)	Sydney	Jul 03, 2024	28 Days
- Method: In-house method E057.2			
Chromium (trivalent)	Sydney	Jul 02, 2024	28 Days
- Method: E043 /E057 Total Speciated Chromium			
Heavy Metals	Sydney	Jul 03, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Jul 02, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins

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

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079 & 25289

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NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: ADDITIONAL: CATHOLIC DIOCESE-LOCHINVAR

Order No.:
Report #: 1113898
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Jul 2, 2024 11:01 AM
Due: Jul 5, 2024
Priority: 3 Day
Contact Name: Billy Snow

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Chromium (speciated)	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	SED2	Jun 13, 2024		Soil	S24-Jl0006502	X	X
Test Counts						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							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Method Blank							
Heavy Metals							
Chromium	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	110			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Chromium	%	97			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Chromium	S24-Jl0005706	NCP	%	92			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	S24-Jn0077553	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium	S24-Jl0006175	NCP	mg/kg	11	11	4.0	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S24-Jl0006736	NCP	%	40	35	13	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

Authorised by:

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Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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