# Detailed Salinity Assessment Report

## 421 The Northern Road, Cobbitty NSW 2570
## Lot 2005 in DP 1162239

Report Ref. **P33603.1_R01**
Report Date: 2nd February 2022

**Mirvac Homes (NSW) Pty Limited**
Level 28, 200 George Street
Sydney NSW 2000

**Geotest Services Pty Ltd.**
**ABN: 39 089 302 009**
**P.O. Box 928, Kings Langley NSW 2147**
**Tel: (02) 9671 4443**

Geotest Services

ABN: 39 089 302 009
PO Box 928, Kings Langley NSW 2147
P (02) 9671 4443
E admin@geotestservices.com.au

2nd February 2022

**Mirvac Homes (NSW) Pty Limited**

**Re: Detailed Salinity Assessment Report; 421 The Northern Road, Cobbitty NSW 2570.**

Please find enclosed the Detailed Salinity Assessment Report prepared by Geotest Services for the Site 421 The Northern Road, Cobbitty NSW 2570. Should you have any queries regarding the report and its contents, please do not hesitate to be in contact with Geotest.

We look forward to assisting you in future development and project works.

**Document Control:**

| Reference | Version | Date | Prepared | Checked | Approved |
|---|---|---|---|---|---|
| **P33603.1_R01** | Draft | 21/01/2022 | D.Spasojevic<br>J. Barnes<br>A. Halpin | D.Spasojevic | |
| **P33603.1_R01** | 01 | 02/02/2022 | D.S., J.B., A.H. | D.Spasojevic | D.Spasojevic |
| | | | | | |
| | | | | | |

TABLE OF CONTENTS


| | | |
|---|---|---|
| 1 | INTRODUCTION | 1 |
| 1.1 | Objectives | 1 |
| 1.2 | Scope of Works | 1 |
| 1.3 | Regulatory Setting | 1 |
| 1.4 | Site Description | 2 |
| 2 | PREVIOUS ASSESSMENTS | 3 |
| 3 | HISTORICAL AERIAL REVIEW | 5 |
| 4 | REGIONAL GEOLOGY, SOIL LANDSCAPES AND HYDROGEOLOGY | 6 |
| 4.1 | Regional geology and soil landscapes | 6 |
| 4.2 | Salinity Potential | 6 |
| 4.3 | Sub-surface Conditions | 6 |
| 4.4 | Regional Hydrogeology | 6 |
| 4.5 | Acid Sulfate Soils | 7 |
| 5 | SITE WORKS | 8 |
| 6 | LABORATORY ANALYSIS | 8 |
| 7 | SALINITY ASSESSMENT | 8 |
| 7.1 | Salinity Results & Discussion | 8 |
| 8 | SALINITY AND MANGEMENT PLAN | 11 |
| 9 | CLOSING | 12 |


## FIGURES


**Figure 1** – Site Locality

**Figure 2** – Site Sampling Plan


## APPENDIX A


**Appendix A** – Engineering Logs

**Appendix B** – Emerson, pH, EC Data

**Appendix C** – ESP and CEC Analytical Data

**Appendix D** – Laboratory Certificates of Analysis

# 1 INTRODUCTION

This report presents the results of a Detailed Salinity Assessment (DSA) for a single parcel of land located at 421 The Northern Road, Cobbitty NSW 2570 (legally identified as lot 2005 in Deposited Plan (DP) 1162239) and herein referred to as 'The Site'. This report was commissioned to address development and planning requirements for the proposed master-planned community incorporating various urban land use settings, local urban facilities, infrastructure, and open spaces. It is expected that an experienced earthworks contractor with knowledge of the soils in Western Sydney will be engaged to undertake civil earthworks that may be required at the Site.

## 1.1 Objectives

The objectives of this DSA are to:

- Expand on the existing DP 2020 PSA[1].
- Characterise Site soils to identify the nature and degree of salinity; and
- Provide a salinity management plan to assist in future Site works.

## 1.2 Scope of Works

To achieve the objectives, Geotest undertook the following scope of works:

- Review of existing PSA pertaining to the Site.
- Undertake a supplementary desktop review of the Site setting addressing any data gaps.
- Derive and present assessment criteria and discussion on appropriateness with respect to the proposed development.
- Preparation of a field works program and Site soil sampling plan.
- Establishment on-site and intrusive field works with mechanical equipment for excavation of investigation locations across the Site.
- Undertake excavation of 25 test pit investigation locations penetrating through multiple soil horizons to target depth of 1.5m and a maximum depth of 3.0m below ground surface level.
- Logging of bore hole investigation locations and record any presence of groundwater presence/seepage.
- Collection of samples from each horizon for laboratory analysis of Electrical Conductivity (EC) and Potential Hydrogen (pH).
- Analysis of representative samples from target horizons and soil landscape groupings for the analysis of Dispersion through Emmerson aggregate analysis, analysis for Cation Exchange Capacity (CEC), Exchangeable Sodium Potential (ESP), Sulphates, and Chlorides to assess soil physiochemical characteristics and potential stresses on the built environment (ie. concrete and steel).
- Assessment of laboratory results.
- Discussion on results, and
- Reporting including an updated Salinity Management Plan for the development.

## 1.3 Regulatory Setting

The preparation of this salinity assessment was carried out with reference to the following Department of Infrastructure Planning and Natural Resources (DIPNR) publications.

[1] Preliminary Salinity Assessment, Lot 2005 in DP 1162239, Douglas Partners Report Ref. 92323.01, dated February 2020

- Map of Salinity Potential in Western Sydney – 2002.
- Site Investigations for Urban Salinity – 2002.
- Building in a Saline Environment – 2003.
- Indicators of Urban Salinity – 2002; and
- AS 2159 2009 Piling – Design and Installation.

## 1.4 Site Description

| Item | Description |
|---|---|
| **Address**[2] | 421 The Northern Road, Cobbitty NSW 2570 |
| **Legal Identity**[2] | Lot 2005 in DP 1162239 |
| **Site area**[2] | Approximately 79.80 ha |
| **LGA**[2] | Camden City Council |
| **Location Description** | The Site is situated to the north of Cobbitty Road and to the east of Charles Mcintosh Parkway |
| **Current Land Zoning**[3] | • Zone R1 – General Residential<br>• Zone B1 – Neighbourhood Centre<br>• Zone C2 – Environmental Conservation<br>• Zone C4 – Environmental Living |
| **Current use of Site** | Agricultural land, primarily for cattle grazing. |
| **Proposed use of Site** | Various urban land use settings, local urban facilities, infrastructure, and open spaces |
| **Elevation**[2] | The Site lies between approximately 68-92 metres Australian Height Datum (AHD) |
| **Geographic Coordinates**[2] | -34.010014 S, 150.7107913 E. |

[2] https://maps.six.nsw.gov.au/

[3] https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address

# 2 PREVIOUS ASSESSMENTS

Geotest is aware of the following PSA relating to the Site as listed below. Geotest has carried out a review of the report as part of this DSA.

- ***Douglas Partners 2020 PSA[4]***

Douglas Partners Pty Ltd (DP) were commissioned to complete a Desktop Preliminary Salinity Investigation and Management Plan (SMP) for Lot 2005 in DP 1162239, Cobbitty NSW. DP stated that the Site was proposed for residential subdivision and that an assessment of soil salinity was required for submission to Camden Council with the subdivision application, and to assist in conceptual planning of the development.

DP undertook the following scope of work:

- Review of available mapping and the Land Capability Assessment (LCA), with respect to potential for salinity effects on the development.
- Review of the regulatory and industry guidelines detailing Council requirements; and
- Preparation of a SMP providing management strategies to reduce the impact of saline material on the proposed development.

A previous investigation within the subject site and its immediate surroundings was undertaken by DP in 2006 as part of the LCA. A review of this report by DP indicated the relevant site was located within the southwestern corner of the larger project. Site observations made during the site walkovers completed for the LCA, identified the following salinity concerns within the site:

- Salt efflorescence were present within the banks and bases of erosion gullies along Cobbitty Creek and its tributary and also around the margins of the dam.
- Salt tolerant vegetation was also present along the course of Cobbitty Creek and the tributary erosion gullies.
- Bare soil patches which were associated with the salt efflorescence.
- Areas of possible surface ponding, seepage and waterlogging, with consequent salinity risks, were noted in the vicinity of the farm dam.

A review of the of the LCA indicated that nine test pits were excavated within the Site boundary and four test pits were excavated in close proximity to the site. Based on a review of the limited selected laboratory analysis, soils within the site were identified to range from non-saline to very saline, and non-aggressive to mildly aggressive towards steel and concrete.

Based on the desktop review and limited testing completed as part of the prior LCA, DP considered that the site had a moderate to high salinity potential and would have salinity constraints. Furthermore, DP considered that an intrusive salinity investigation will be required prior to development so that an appropriate salinity management plan can be prepared. The salinity management plan will need to include appropriate management strategies to address the site-specific salinity constraints.

DP made the following recommendations regarding management strategies for the assumed salinity at the Site

- Management should focus on capping of the upper surface of the sodic soils, both exposed by excavation and placed as filling, with a more permeable material to prevent ponding, to reduce capillary rise, to act as a drainage layer and to reduce the potential for erosion.

[4] Preliminary Salinity Assessment, Lot 2005 in DP 1162239, Douglas Partners Report Ref. 92323.01, dated February 2020

- When possible, placement of excavated soils in fill areas with similar salinity characteristics. (ie. to place material on to in-situ soils with a similar or higher aggressivity or salinity classification).
- Sodic soils can also be managed by maintaining vegetation where possible and planting new salt tolerant species. The addition of organic matter, gypsum and lime can also be considered where appropriate.
- Avoiding water collecting in low lying areas, in depressions or behind fill. This can lead to water logging of the soils, evaporative concentration of salts, and eventual breakdown in soil structure resulting in accelerated erosion
- Any pavements should be designed to be well drained of surface water. There should not be excessive concentrations of runoff or ponding that would lead to waterlogging of the pavement or additional recharge to the groundwater through any more permeable zones in the underlying filling material.
- Surface drains should generally be provided along the top of batter slopes to reduce the potential for concentrated flows of water down slopes possibly causing scour.
- Salt tolerant grasses and trees should be considered for landscaping, to reduce soil erosion as in Strategy A above and to maintain the existing evapotranspiration and groundwater levels. Reference should be made to an experienced landscape planner or agronomist.

In addition to the above, DP also provided the following management strategies for the installation of services or construction of pavements and structures/buildings, tailored by Geotest for relevance to the subject site:

- For soils which are classified as mildly aggressive to concrete, piles should have a minimum strength of 32 MPa and a minimum cover to reinforcement of 60 mm (as per AS 2159) to limit the corrosive effects of the surrounding soils (in accordance with AS 2159).
- Wet cast concrete pipes and currently manufactured spun concrete pipes are understood to have estimated compressive strengths of 50 MPa and 60 - 70 MPa, respectively, in excess of the requirements for mass concrete in F above. It is recommended that any concrete pipes installed within the site should employ AS 4058 - compliant steel reinforced pipes of general-purpose Portland cement, with minimum cover to reinforcement of 20 mm, or should be fibre reinforced.

# 3 HISTORICAL AERIAL REVIEW

Geotest reviewed a selection of available historical aerial photographs for the Site from 2009 to 2021, in order to ascertain any potential changes from the time of the DP 2006 LCA as referenced within the DP 2020 PSA. Images were sourced via NearMap online imagery. Geotest makes the following comments regarding land use at the Site and surrounding the Site:

| | |
|---|---|
| 2009<br>(Nearmap) | In the 2009 image, the Site is described as primarily vacant paddocks with a large dam occupying the central portion of the Site. Small bare patches of surface vegetation with exposed soils are visible in eastern portion of the Site. Cobbitty Creek is observed in the southern portion of the Site, aligned generally from south to north-west.<br>The land use surrounding the Site is described as vacant pastoral lands, rural residency, and areas of dense woodland. Cobbitty Road is visible to the south of the Site. |
| 2011<br>(Nearmap) | In the 2011 image, civil works occur for the installation of sewer main alignments, a sewage pumping station and upgraded access way are observed in the centre, southern and western portion of the Site. The civil works are observed to include the excavation and potential trenching of large alignments and the stockpiling of materials on-site.<br>The remainder of the Site appears to remain generally unchanged since previous image.<br>The land surrounding the Site appears to remain generally unchanged since previous image with the exception to the increased presence of low density styled residency to east. |
| 2013<br>(Nearmap) | In the 2013 image, a small structure (present today) was observed in the eastern portion along the eastern boundary. An access way is observed connecting the Site to Cobbitty Road transecting the Site from the southern to northern boundary. The remainder of the Site appears to remain generally unchanged since previous image.<br>The land surrounding the Site appears to remain generally unchanged since previous image with the exception to the increased presence of low density styled residency to east. |
| 2015<br>(Nearmap) | In the 2015 image, the Site appears generally unchanged since the previous image.<br>The land surrounding the Site shows an increase low-density styled residency and civil works to east. |
| 2017<br>(Nearmap) | In the 2017 image, the Site appears generally unchanged since the previous image.<br>The land surrounding the Site shows an increase low-density styled residency and civil works to east. |
| 2019<br>(Nearmap) | In the 2019 image, the Site appears generally unchanged since the previous image.<br>The land surrounding the Site shows an increase low-density styled residency and civil works to east. |
| 2021<br>(Nearmap) | In the 2021 image, the Site appears generally unchanged since the previous image.<br>The land surrounding the Site shows an increase low density styled residency and civil works to east. |

# 4 REGIONAL GEOLOGY, SOIL LANDSCAPES AND HYDROGEOLOGY

## 4.1 Regional geology and soil landscapes

The 1:100,000 Wollongong - Port Hacking Geological Series Sheet 9030 (Geological Survey of New South Wales, Edition 1, 1991) indicates that the Site locality is likely to be underlain by Middle Triassic Bringelly Shale.

The 1:100,000 Penrith Soil Landscape Series Sheet 9030 (Soil Conservation Service of NSW, 1989) indicates that the Site is situated at or near the boundary of two mapping categories. The Site can be described as situated predominantly on Richmond Group soils with Blacktown Group soils present in the south-western and south-eastern portion of the Site.

The Richmond soil groups are described as poorly structured orange to red clay loams, clays and sands. Plastic clays (U46.12) in drainage lines. Deep acid non-calcic brown soils (Gn3.14, Gn4.34), red earths (Gn2.11) and red podzolic soils (Dr2.41), occur on terrace surfaces with earthy sands (Uc5.21, Uc1.23) on terrace edges. The limitations associated with this soil landscape are localised flood hazard, localised seasonal waterlogging, localised water erosion hazard on terrace edges.

The Blacktown soil groups are described as shallow to moderately deep (<100cm) hard setting mottled texture contrast soils, *red and brown podzolic soils (Dr3.21, Dr3.31, Db2.11, Db2.21)* on crests grading to yellow podzolic soils on lower slopes and in drainage lines. The limitations associated with this soil landscape are moderately reactive highly plastic subsoil, low soil fertility and poor soil drainage (low hydraulic permeability).

## 4.2 Salinity Potential

The 1:100000 Salinity Potential in Western Sydney Sheet indicates the Site appears to be situated near to the boundary of two mapping categories. The Site is observed situated within a zone of moderate salinity potential and high salinity potential.

## 4.3 Sub-surface Conditions

Reference should be made to the engineering logs (Appendix A) for detailed sub surface conditions. A summary of the generalised profile is as follows -

| | |
|---|---|
| **Topsoil** | Sandy Silty Clay, brown to dark brown |
| **Residual** | Silty Clay, brown, red and grey |
| **Bedrock** | Extremely Weathered Shale, grey |

Groundwater was not observed in the test pits during the short time that they remained open. It must be noted however, that fluctuations in the level of ground water may occur due to variations in rainfall, temperature and/or other factors.

## 4.4 Regional Hydrogeology

The NSW Department of Lands Spatial Information Exchange (http://imagery.maps.nsw.gov.au) indicates that the sites topography ranges from 92m relative to Australia height datum (AHD) in the north east of the site, to 68m AHD along the central/western and north-western Site boundaries.

A review of nearby surface water bodies and the surrounding topography indicates Cobbitty Creek transects the Site, flowing from east to west through the approximate center. A large dam (approximately 8.20 ha) is located within the central/eastern portion of the Site.

The Site slopes from the south and from the north toward the dam, while further generally draining to the west. It is expected that Site surface waters would either percolate into sub-surface soils (where permeability allows), accumulate within the on-site dam, or become surface run-off and drain off-site to the west.

A search for registered groundwater monitoring bores within a 500m radius of the Site was undertaken using the NSW Office of Water Groundwater Bore map data (http://allwaterdata.water.nsw.gov.au/water.stm) on the 16th of

December 2021. Information presented in the individual groundwater bore work summary reports has been summarised and presented within the table below:

**Table 4.3 Groundwater Bore Summary Information**

| **Groundwater Bore I.D.** | **Completion date** (ie. installed) | **Distance / Direction** | **Intended purpose** | **Drilled depth** (m, bgl) | **Standing water level** (m, bgl) |
|---|---|---|---|---|---|
| GW106394 | 01/06/2004 | 10m East | Stock, domestic | 279.0 | 63.00 w/ yield of 2.0 L/s |
| GW027135 | 01/01/1941 | 350m North | Stock, domestic | 47.5 | N/A |

Geotest further searched the Office of Environment & Heritage eSPADE hydrogeological landscapes mapping tool[5] on the 16th of December 2021 which indicates that the Site is situated within the Cawdor Hydrogeological Landscape (USCHGL). The CHGL report identifies the following hydrogeological characteristics:

| **Characteristic:** | • **Information (CHGL):** |
|---|---|
| **Aquifer Type** | • Unconfined in unconsolidated alluvial sediments.<br>• Unconfined to semi-confined in fractured rock along structures<br>• Vertical and lateral flow components<br>• Local perching above clay-rich layers (seasonal) |
| **Hydraulic Conductivity** | Moderate, range: >$10^{-2}$-10 metres/day |
| **Aquifer Transmissivity** | Lot to moderate, range: <2-100 metres$^2$/day |
| **Specific Yield** | Moderate, range: 5-15% |
| **Hydraulic Gradient** | Gentle to moderate, range: <10-30% |
| **Groundwater Salinity** | Saline, range: >4.8 dS/m |
| **Depth to Water Table** | Shallow to Intermediate, range 0-8m |
| **Typical Catchment Size** | Medium (<1000 ha) |
| **Scale (flow length)** | Local, Flow Length: <5km (short) |
| **Recharge Estimate** | Moderate |
| **Residence Time** | Medium (years) |
| **Responsiveness to Change** | Fast to medium (months to years) |

## 4.5 Acid Sulfate Soils

Geotest searched the National Acid Sulfate Soils Atlas develop by the Australian government (in conjunction with Commonwealth Scientific and Industrial Research Organisation CSIRO - http://www.asris.csiro.au/). The Site is situated in an area where there is a low probability of ASS and no known occurrence. Land management activities at the Site are not likely to be affected by ASS.

The Site is situated at an approximate elevation of 68-92 meters AHD, while the presence of acid sulphate soils is generally limited to elevations less than 10m AHD. It is considered that ASS or potential ASS are unlikely to be present at the Site.

[5] https://www.environment.nsw.gov.au/eSpade2WebApp#

# 5 SITE WORKS

Field works for the assessment were carried out on the 17th of December 2021 by members of our engineering and environmental staff. The field work consisted of a walk over inspections of the Site to assess whether any salinity effects and impacts could be observed and the excavation of twenty-five (25) test pits for sample recovery.

During the walkover of the Site and the adjacent properties, areas of salt tolerant vegetation (e.g. Casuarina and Melaleuca) were observed surrounding the Site dam and sparsely scattered across the western portion of the Site. There were no other salinity indicators observed to be present at the Site such as salt-affected infrastructure, bare patches of soil with scalding nor salt effervescence. Vegetation appeared normal for this part of Sydney with no indications of salinity affected trees.

The locations of the test pits, which are indicated on Figure 2, were obtained by taking measurements relative to on Site in-situ Site features. A summary of the field data obtained is presented in Appendix A.

# 6 LABORATORY ANALYSIS

During the course of the investigations, a total of one hundred and fifteen (115) samples were collected from 25 investigation locations at appropriate depths to assess salinity at the Site which were subsequently sent to Eurofins MGT Lane Cove Soils Laboratory. Of the 115 samples collected:

- Ninety-nine (99) samples were recovered for the testing of; pH and Electrical Conductivity (EC).
- Twenty-five (25) samples were recovered to determine the soils aggressivity towards concrete and steel through sulfate and chloride analysis; and
- Seventeen (17) samples were recovered to determine the soils exchangeable sodium percentage (ESP) and cation exchange capacity (CEC).

Additionally, forty-nine (49) samples were retained at the NATA Accredited Geotest Laboratory for Emerson class testing.

Tabled results of the pH, EC and Emerson class number may be found in Appendix B. The Tabled ESP and CEC results may be found in Appendix C. The laboratory certificates of analysis have been presented as Appendix D.

# 7 SALINITY ASSESSMENT

## 7.1 Salinity Results & Discussion

The fundamental criteria for assessing soil salinity are based on electrical conductivity. The following measures of soil salinity are based on Site Investigations for Urban Salinity (2002), Table 6.2 which has been reproduced below:

| Class | $EC_e$ (dS/m) | Comments |
|---|---|---|
| **Non Saline** | <2 | Salinity effects mostly negligible |
| **Slightly Saline** | 2-4 | Yields of very sensitive crops may be affected |
| **Moderately Saline** | 4-8 | Yields of many crops affected |
| **Very Saline** | 8-16 | Only tolerant crops yield satisfactorily |
| **Highly Saline** | >16 | Only a few very tolerant crops yield satisfactorily |

The EC results reported from all samples tested were calculated using a select soil texture conversion factor for the interpreted soil textures observed at the Site.

The results of the salinity test results and calculation incorporating soil texture results ranged from 0.14 dS/m to 7.70 dS/m.

According to Site Investigations for Urban Salinity (2002); salinity class for the soils on this Site were found to be **Non-Saline, Slightly Saline** and **Moderately Saline.**

Soil stability is a function of soil salinity. Other parameters may be used to assess for saline soils. The Emerson crumb test measures a soils dispersibility in water. The following measures of soil dispersion are based on the "Australian standard Emerson aggregate test" –

| Emerson Class Number | Dispersibility |
|---|---|
| **1** | Very High |
| **2** | High |
| **3** | Moderate |
| **4&5** | Slight |
| **6,7,8** | Negligible |

- **Emerson class test results ranged from 1 – 8.**

According to the "Australian Standard Emerson aggregate test"; the Emerson class indicates that results across the Site are considered to be **highly dispersive** to **negligible** (non-dispersive) absent of any strong delineation between result categories. Generally, the Site is considered to have moderately sodic soils throughout. Sodic soils are normal for this part of Sydney.

Importantly on a construction Site, soils may show aggressivity towards steel and concrete, particularly if the soils are in direct contact with the concrete and/or steel. The following is a measure of soil aggressivity based on AS 2159 2009 "Piling – Design and Installation":

| Concrete Foundation* | |
|---|---|
| **pH** | **Classification** |
| >5 | Non-aggressive |
| 4.5-5 | Mild |
| 4.0-4.5 | Moderate |
| <4.0 | Severe |

| Steel Structures | |
|---|---|
| **pH** | **Classification** |
| >4 | Non-aggressive |
| 3-4 | Mild |
| <3 | Moderate |

**Where there is running water the rating should be moved at least one level due to the increased risk of erosion.*

- **pH test result results ranged from 4.4 – 9.3**

According to AS2159-2009, the pH is considered to be **moderately-aggressive** towards concrete, and **non-aggressive** towards steel from all samples tested. Refer to Australian Standard AS2159-2009 "Piling – Design and Installation" and for guidelines on protection of buried steel and concrete structures.

Selected samples were assessed for their Sulphate and Chloride levels. The following is a measure of soil aggressivity based on AS 2159 2009 "Piling – Design and Installation".

| Concrete Foundation* | |
|---|---|
| **Sulfate ($mgS0_4/kg$)** | **Classification** |
| <5,000 | Non-aggressive |
| 5000-10,000 | Mild |
| 10,000 –20,000 | Moderate |
| >20,000 | Severe |

| Steel Structures | |
|---|---|
| **Chloride (mgCl/kg)** | **Classification** |
| <20,000 | Non-aggressive |
| 20,000-50,000 | Mild |
| >50,000 | Moderate |

* Where there is running water the rating should be moved at least one level due to the increased risk of erosion

- **Sulphate ranged from 13 – 640 mg/kg and Chloride ranged from 14 – 1500 mg/kg.**

According to AS2159-2009, the chloride and sulphate levels are considered **non-aggressive** to concrete and **non-aggressive** towards steel from all samples tested.

Selected samples were assessed for their CEC and ESP. The following is a measure of ESP and CEC based on "Site Investigations for Urban Salinity (2002)".

| ESP (%) | Classification |
|---|---|
| <5 | Non-sodic |
| 5-15 | Sodic |
| >15 | Highly-sodic |
| **CEC (cmol+/Kg)** | **Classification** |
| <6 | Very Low |
| 6-12 | Low |
| 13-25 | Moderate |
| 26-40 | High |
| >40 | Very High |

- **ESP ranged from 7.9 – 43% and CEC ranged from 10 – 85 cmol+/kg**

According to "Site Investigations for Urban Salinity" Exchangeable Sodium Percentage (ESP) analysis ranged from **sodic** to **highly-sodic**. Fifteen samples were highly sodic and the remaining two samples fell within the sodic threshold. The results of the CEC analysis ranged from **low** to **very high**. One sample was recorded as having very high CEC whilst the remaining samples ranged from low to moderate CEC.

When wet, sodic soils lose their structure and disperse into very small particles, the small particles fill the pore spaces in the soil effectively blocking them. This impermeable layer can severely impede water movement. However, this does not pose any construction and environmental risk to residential redevelopment.

CEC is the total capacity of a soil to hold exchangeable cations. CEC is an inherent soil characteristic and is difficult to alter significantly. It influences the soil's ability to hold onto essential nutrients through ionic bonding and provides a buffer against soil acidification.

# 8 SALINITY AND MANGEMENT PLAN

Salinity management on the Site during construction will depend on the final earthworks design and the volume of cut and fill works required on the Site. In conjunction with the recommendations of the DP 2020 PSA, options for managing moderately saline soils on this Site further include the following –

- Develop the best use of existing topography to minimise cut and fill operations where possible.
  - Noting the necessity for cut and fill as part of the inferred earthworks plan, use of robust sediment control measures may be implemented to mitigate the impacts of erosion and sediment transport.
- Maintenance and improvement of native vegetation along drainage courses.
- Management to limit excessive water discharges across landscaped areas.
- Utilise native and deep-rooted plants in order to minimise soil erosion.
- Minimise any prolonged exposure of any moderately saline soils in temporary excavation faces.
- Minimise any prolonged exposure of any moderately saline soils in stockpiles during Site works.
- Minimise potential for ponding or water logging areas on the Site.
- Provision of lining in temporary ponds with non-saline clays to minimise groundwater recharge through the soils.
- Placement of any excavated moderately saline soils to locations where salts cannot be leached to the environment.
- Natural drainage patterns to be maintained where possible.
- Drainage infrastructure in vulnerable areas to be installed as soon as practical to avoid excessive water infiltration, ponding of water on Site and salt leaching.
- Imported material should be tested for salinity to avoid importing large quantities of soil considered moderately saline, while soils considered very saline or highly saline should not be imported to the Site.
- Roads should have well designed sub soil drainage.
- In fill areas. place the soils with highest salinity at the deepest levels.
- Application of gypsum to areas of exposed moderately saline soils where applicable.
- Concrete of suitable strength and reinforcement cover is to be used for drainage structures and wherever contact with water and increased soil moisture is expected.
- Pipes used for stormwater drainage should be sealed to minimise the risk of leakage.
- Soils that are excavated from either roads or service trenches throughout areas or the Site found to be moderately saline should be re-instated at the same horizontal level or lower where possible; and
- <u>Conduct a comprehensive post-earthworks Site exposure classification assessment to determine the final exposure classification of each individual lot.</u>
  - Should any near-surface soil material be identified to be saline or aggressive toward concrete and/or steel, the impacts of these soil conditions can be mitigated through relatively simple construction techniques such as the use of concrete of appropriate strength (ie. MPa), correct concrete thickness/cover over metal reinforcements and correct installation of appropriately designed damp-course barrier.

These and other techniques may be used by construction management team to minimise the effects of salinity on this Site.

Constructors and house builders should follow all relevant Australian Standards and should also be made aware of the Cement Concrete & Aggregates Australia publication “Guide to Residential Slabs and Footings in Saline Environments”.

Providing the management practices outlined in this report are followed during the construction period the proposed development of this Site is unlikely to have any significant impact on the existing salinity on this Site or on any downstream sites.

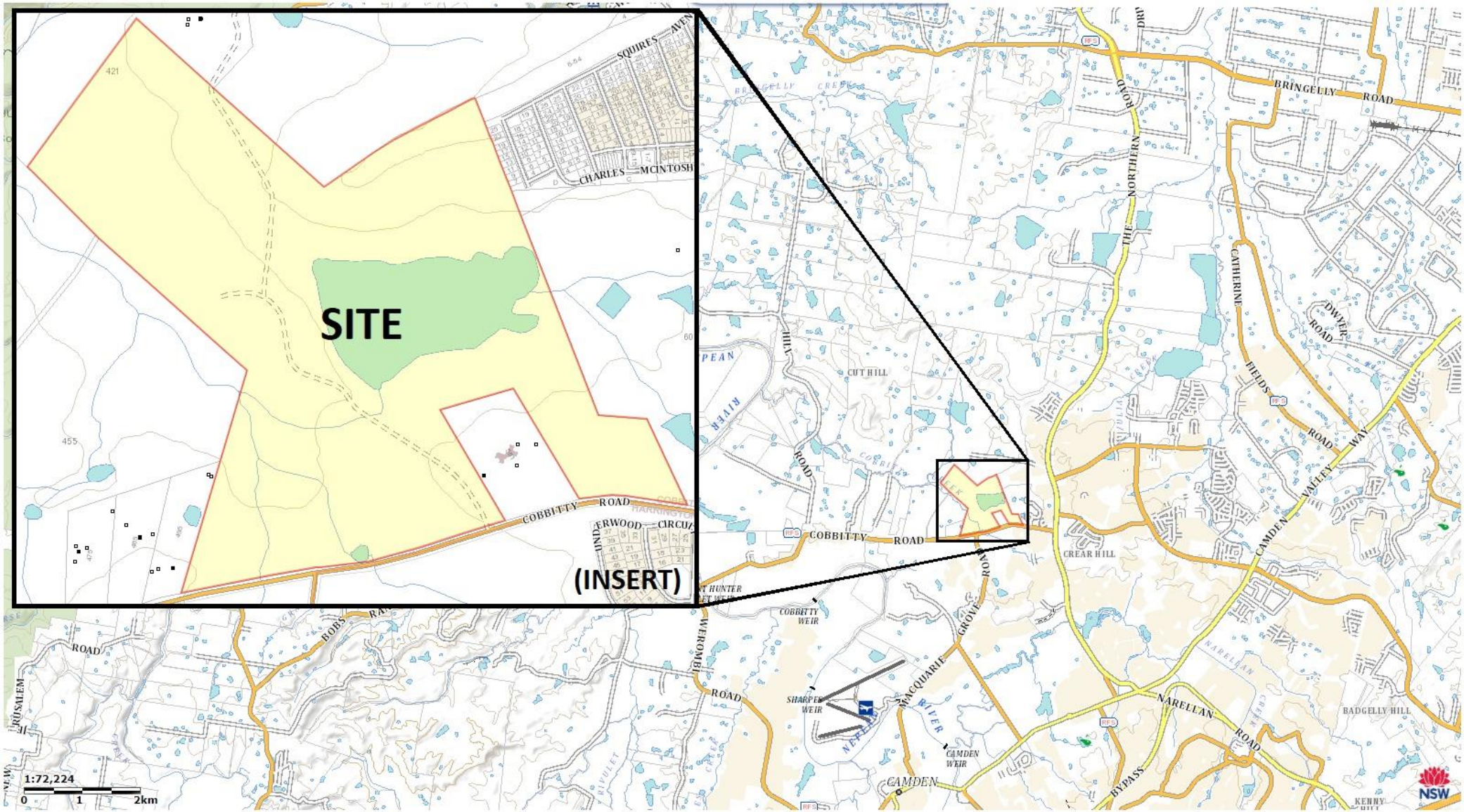
## 9 CLOSING

If you have any further questions regarding this matter, please don't hesitate to contact me.

Yours Faithfully

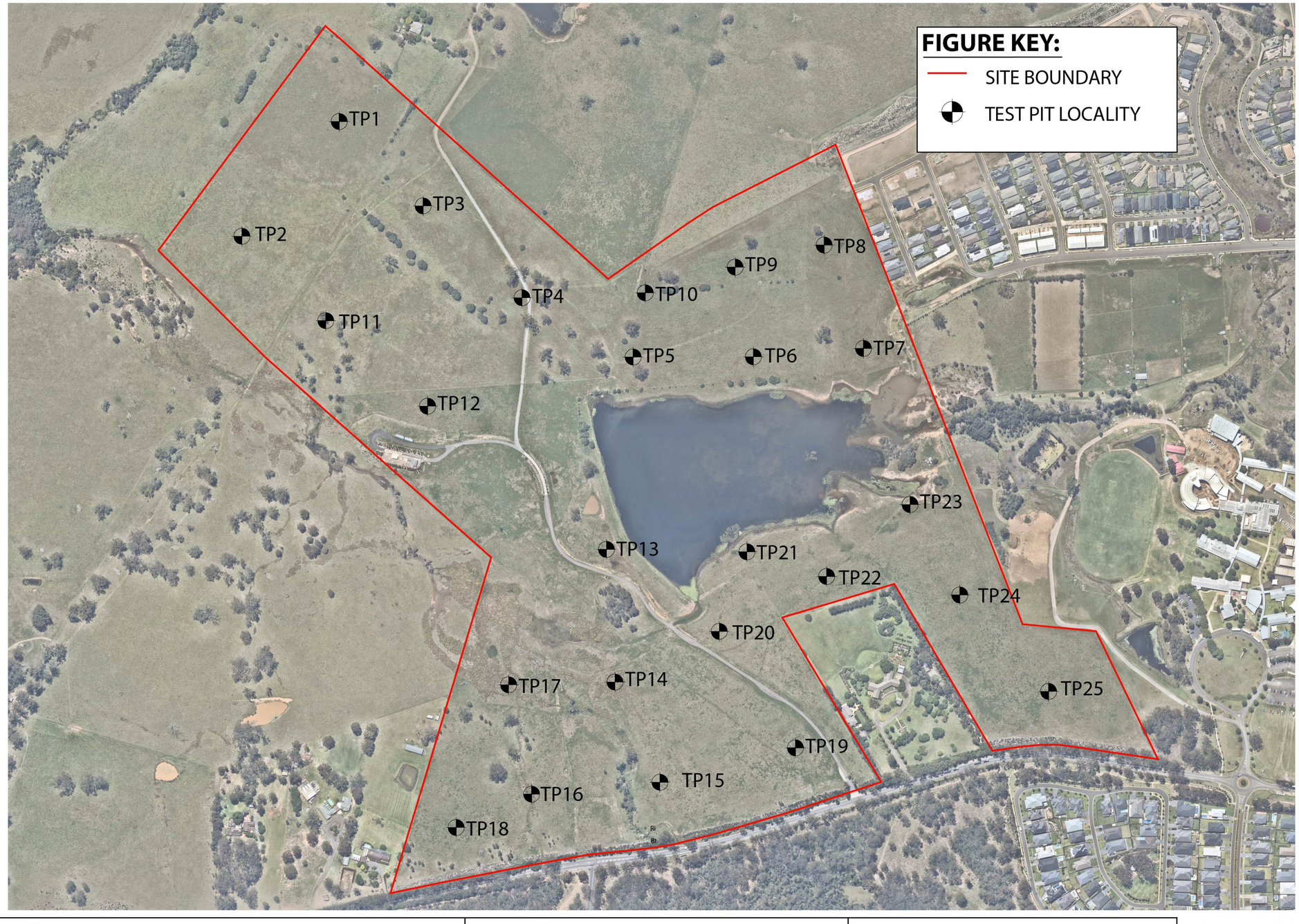
D. Spasojevic

Geotest Services Pty Ltd




| | | | |
|---|---|---|---|
| Title: **Site Locality** | | Figure: **Figure 1** | Project No: **P33603.1_R01** |
| Project:<br>Detailed Salinity Assessment | Scale:<br>Not to Scale | Geotest Services | |
| Location:<br>421 The Northern Road, Cobbitty NSW 2570 | Date:<br>20/01/2022 | | |
| Client:<br>Mirvac Homes (NSW) Pty Limited | Drawn:<br>D.R.S | | |

Image source: SIXMap accessed 2022




| | | | |
|---|---|---|---|
| Title: **Site Sampling Plan** | | Figure: **Figure 2** | Project No: **P33603.1_R01** |
| Project: Detailed Salinity Assessment | Scale: Not to Scale | Geotest Services | |
| Location: 421 The Northern Road, Cobbitty NSW 2570 | Date: 20/01/2022 | | |
| Client: Mirvac Homes (NSW) Pty Limited | Drawn: D.R.S | | |

Image source: Nearmap, accessed 2021.

# APPENDIX A

**Engineering Logs**

**P33603.1_R01**
**Mirvac Homes (NSW) Pty Ltd**
**421 The Northern Road**
**COBBITTY, NSW.**
Date of Field Works: **17/12/2021**

| **TP1** | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.2 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.2-2.0 | 0.5, 1.0, 1.5 | Silty CLAY, brown, red moist, stiff | |
| 2.0-2.6 | 2.0, 2.5 | Silty CLAY, grey, mottled red moist, stiff | |
| 2.6-2.9 | | Sandy Silty CLAY, grey, moist, stiff | |
| 2.9-3.0 | 3.0 | Extremely weathered sandy SHALE, red ironstone, grey, moist, stiff | |
| *Test Pit Terminated @* **3.0m *bgl*** | | | |

| **TP2** | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-1.5 | 0.5,1.0, 1.5 | Silty CLAY, brown, red moist, stiff | |
| *Test Pit Terminated @* **1.5m *bgl*** | | | |

| **TP3** | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-1.0 | 0.5,1.0, | Silty CLAY, brown, grey moist, stiff | |
| 1.0-1.2 | | Silty CLAY, grey, moist, stiff | |
| 1.2-1.5 | 1.5 | Extremely weathered SHALE, grey, yellow, moist, stiff | |
| *Test Pit Terminated @* **1.5m *bgl*** | | | |

| **TP4** | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-0.8 | 0.5 | Silty CLAY, red, moist, stiff | |
| 0.8-1.2 | 1.0 | Silty CLAY, pale brown, moist, stiff | |
| 1.2-1.5 | 1.5 | Extremely weathered SHALE, grey, moist, stiff | |
| *Test Pit Terminated @* **1.5m *bgl*** | | | |

| **TP5** | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-0.7 | 0.5 | Silty CLAY, red, brown, moist, stiff | |
| 0.7-1.1 | 1.0 | Silty CLAY, grey, moist, stiff | |
| 1.1-1.5 | 1.5 | Extremely weathered SHALE, grey, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| **TP6** | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-1.5 | 0.5,1.0, 1.5 | Silty CLAY, brown, red, becoming grey, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| TP7 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-2.2 | 0.5,1.0, 1.5,2.0 | Silty CLAY, red, moist, stiff | |
| 2.2-3.0 | 2.5, 3.0 | Silty CLAY, grey, mottled red, moist, stiff | |
| *Test Pit Terminated @* ***3.0m bgl*** | | | |

| TP8 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-0.7 | 0.5 | Silty CLAY, red, moist, stiff | |
| 0.7-1.3 | 1.0 | Silty CLAY, pale brown, moist, stiff | |
| 1.3-1.5 | 1.5 | Extremely weathered SHALE, grey, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| TP9 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.2 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.2-1.2 | 0.5,1.0 | Silty CLAY, brown, red, moist, stiff | |
| 1.2-1.5 | 1.5 | Silty CLAY, grey, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| TP10 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-1.1 | 0.5,1.0 | Silty CLAY, red, brown, moist, stiff | |
| 1.1-1.5 | 1.5 | Extremely weathered SHALE, grey, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| TP11 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-1.5 | 0.5,1.0 1.5 | Silty CLAY, red, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| TP12 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-1.5 | 0.5,1.0, 1.5 | Silty CLAY, red, brown, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| TP13 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-1.5 | 0.5, 1.0, 1.5 | Silty CLAY, pale brown becoming brown, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| TP14 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.2 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.2-1.5 | 0.5,1.0, 1.5 | Silty CLAY, red, becoming red and grey, moist, stiff | |
| *Test Pit Terminated @ **1.5m bgl*** | | | |

| TP15 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.4 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.4-1.3 | 0.5,1.0 | Silty CLAY, pale brown, moist, stiff | |
| 1.3-1.6 | 1.5 | Silty CLAY, red, moist, stiff | |
| 1.6-2.6 | 2.0, 2.5 | Silty CLAY, yellow, grey, moist, stiff | |
| 2.6-3.0 | 3.0 | Extremely weathered SHALE, grey, moist, stiff | |
| *Test Pit Terminated @ **3.0m bgl*** | | | |

| TP16 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.4 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.4-1.3 | 0.5,1.0 | Silty CLAY, pale brown, moist, stiff | |
| 1.3-1.5 | 1.5 | Silty CLAY, grey, red, moist, stiff | |
| *Test Pit Terminated @ **1.5m bgl*** | | | |

| TP17 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.2 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.2-1.5 | 0.5,1.0, 1.5 | Silty CLAY, brown, grey, becoming red, , moist, stiff | |
| *Test Pit Terminated @ **1.5m bgl*** | | | |

| TP18 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-1.4 | 0.5,1.0 | Silty CLAY, brown, red, moist, stiff | |
| 1.4-2.3 | 1.5,2.0 | Silty CLAY, grey, mottled brown and red, moist, stiff | |
| 2.3-2.6 | 2.5 | Sandy SHALE , grey, brown, moist, stiff | |
| 2.6-3.0 | 3.0 | SHALE, grey, moist, stiff | |
| *Test Pit Terminated @ **3.0m bgl*** | | | |

| TP19 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-0.6 | 0.5 | Silty CLAY, red, moist, stiff | |
| 0.6-1.2 | 1.0 | Shaley CLAY, brown, moist, stiff | |
| 1.2-1.5 | 1.5 | Extremely weathered SHALE, grey, moist, stiff | |
| *Test Pit Terminated @ **1.5m bgl*** | | | |

| TP20 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.2 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.2-0.6 | 0.5 | Silty CLAY, red, brown, moist, stiff | |
| 0.6-1.3 | 1.0 | Silty CLAY, grey, moist, stiff | |
| 1.3-1.5 | 1.5 | Extremely weathered SHALE, grey, moist, stiff | |
| *Test Pit Terminated @ **1.5m bgl*** | | | |

| TP21 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy, Silty, CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-0.6 | 0.5 | Silty CLAY, red, moist, stiff | |
| 0.6-3.0 | 1.0,1.5, 2.0,2.5, 3.0 | Silty CLAY, grey, mottled yellow, moist, stiff | |
| *Test Pit Terminated @* ***3.0 m bgl*** | | | |

| TP22 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy, Silty, CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-1.3 | 0.5,1.0 | Silty CLAY, red, moist, stiff | |
| 1.3-1.5 | 1.5 | Silty CLAY, grey, mottled red, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| TP23 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy, Silty, CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-1.0 | 0.5 | Silty CLAY, red, brown, moist, stiff | |
| 1.0-1.5 | 1.0, 1.5 | Silty CLAY, brown, yellow, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| TP24 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.3 | 0.2 | Topsoil: Sandy, Silty, CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.3-0.6 | 0.5 | Silty CLAY, brown, moist, stiff | |
| 0.6-1.5 | 1.0, 1.5 | Silty CLAY, brown becoming red, grey, moist, stiff | |
| *Test Pit Terminated @* ***1.5m bgl*** | | | |

| TP25 | | | |
|---|---|---|---|
| **Depth (m)** | **Sample** | **Description** | **Additional Observations** |
| 0.0-0.2 | 0.2 | Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, moist, firm | |
| 0.2-1.0 | 0.5 | Silty CLAY, red, grey, moist, stiff | |
| 1.0-1.3 | 1.0 | Silty CLAY, pale brown, moist, stiff | |
| 1.3-1.7 | 1.5 | Shaley CLAY, grey, moist, stiff | |
| 1.7-Refusal | | SHALE, grey, moist, stiff | |
| *Refusal @* ***1.7m bgl*** | | | |

# APPENDIX B

**Emerson, pH, EC Details**

Geotest Services Pty Ltd

**APPENDIX B**
**Table Emerson, pH, EC Details**

**33603.1; 421 The Northern Road, Cobbitty NSW 2570**

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP1 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.4 | 50.0 | 9.0 | 0.45 | 7 | Non Saline |
| TP1 | 0.5 | Silty Clay, brown,red | 5.3 | 230.0 | 7.0 | 1.61 | | Non Saline |
| TP1 | 1.0 | Silty Clay, brown,red | 5.0 | 320.0 | 7.0 | 2.24 | | Slightly Saline |
| TP1 | 1.5 | Silty Clay, brown,red | 4.8 | 350.0 | 7.0 | 2.45 | 2 | Slightly Saline |
| TP1 | 2.0 | Silty Clay, brown,red | 4.5 | 920.0 | 7.0 | 6.44 | | Moderately Saline |
| TP1 | 2.5 | Silty Clay, grey, mottled red | 5.0 | 600.0 | 7.0 | 4.20 | | Moderately Saline |
| TP1 | 3.0 | Extremely weathered Sandy Shale, grey | 4.4 | 490.0 | 7.0 | 3.43 | | Slightly Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP2 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.5 | 39.0 | 9.0 | 0.35 | 7 | Non Saline |
| TP2 | 0.5 | Silty Clay, brown,red | 7.5 | 990.0 | 7.0 | 6.93 | | Moderately Saline |
| TP2 | 1.5 | Silty Clay, brown,red | 7.9 | 1100.0 | 7.0 | 7.70 | | Moderately Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP3 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.1 | 59.0 | 9.0 | 0.53 | 6 | Non Saline |
| TP3 | 0.5 | Silty Clay, brown, grey | 5.4 | 160.0 | 7.0 | 1.12 | | Non Saline |
| TP3 | 1.0 | Silty Clay, grey | 5.3 | 350.0 | 7.0 | 2.45 | 2 | Slightly Saline |
| TP3 | 1.5 | Extremely weathered Shale, grey | 7.6 | 480.0 | 7.0 | 3.36 | | Slightly Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP4 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.2 | 38.0 | 9.0 | 0.34 | 6 | Non Saline |
| TP4 | 0.5 | Silty Clay, red | 5.9 | 210.0 | 7.0 | 1.47 | | Non Saline |
| TP4 | 1.0 | Silty Clay, pale brown | 5.7 | 420.0 | 7.0 | 2.94 | 2 | Slightly Saline |
| TP4 | 1.5 | Extremely weathered Shale, grey | 8.7 | 460.0 | 7.0 | 3.22 | | Slightly Saline |

Blue highlight indicates Non Saline & Slightly Saline soils
Green highlight indicates Moderately Saline soils

Geotest Services Pty Ltd

**APPENDIX B**
**Table Emerson, pH, EC Details**

**33603.1; 421 The Northern Road, Cobbitty NSW 2570**

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP5 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.4 | 32.0 | 9.0 | 0.29 | 7 | Non Saline |
| TP5 | 0.5 | Silty Clay, red, brown | 5.7 | 140.0 | 7.0 | 0.98 | | Non Saline |
| TP5 | 1.0 | Silty Clay, grey | 5.5 | 300.0 | 7.0 | 2.10 | 2 | Slightly Saline |
| TP5 | 1.5 | Extremely weathered Shale, grey | 6.8 | 270.0 | 7.0 | 1.89 | | Non Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP6 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.1 | 26.0 | 9.0 | 0.23 | 8 | Non Saline |
| TP6 | 0.5 | Silty Clay, brown, red | 6.6 | 35.0 | 7.0 | 0.25 | | Non Saline |
| TP6 | 1.5 | Silty Clay, brown, red becoming grey | 5.5 | 190.0 | 7.0 | 1.33 | 2 | Non Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP7 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.4 | 29.0 | 9.0 | 0.26 | 6 | Non Saline |
| TP7 | 0.5 | Silty Clay, red | 5.4 | 490.0 | 7.0 | 3.43 | | Slightly Saline |
| TP7 | 1.5 | Silty Clay, red | 5.7 | 690.0 | 7.0 | 4.83 | 3 | Moderately Saline |
| TP7 | 3.0 | Silty Clay, grey, mottled red | 5.4 | 620.0 | 7.0 | 4.34 | | Moderately Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP8 | 0.2 | Sandy Silty Clay, brown to dark brown | 5.9 | 41.0 | 9.0 | 0.37 | 7 | Non Saline |
| TP8 | 0.5 | Silty Clay, red | 6.0 | 38.0 | 7.0 | 0.27 | | Non Saline |
| TP8 | 1.0 | Silty Clay, pale brown | 5.3 | 92.0 | 7.0 | 0.64 | 2 | Non Saline |
| TP8 | 1.5 | Extremely weathered Shale, grey | 5.4 | 420.0 | 7.0 | 2.94 | | Slightly Saline |

Blue highlight indicates Non Saline & Slightly Saline soils
Green highlight indicates Moderately Saline soils

Geotest Services Pty Ltd

**APPENDIX B**
**Table Emerson, pH, EC Details**

**33603.1; 421 The Northern Road, Cobbitty NSW 2570**

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP9 | 0.2 | Sandy Silty Clay, brown to dark brown | 5.5 | 63.0 | 9.0 | 0.57 | 6 | Non Saline |
| TP9 | 0.5 | Silty Clay, brown, red | 6.3 | 130.0 | 7.0 | 0.91 | | Non Saline |
| TP9 | 1.5 | Silty Clay, grey | 9.3 | 290.0 | 7.0 | 2.03 | 2 | Slightly Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP10 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.1 | 51.0 | 9.0 | 0.46 | 6 | Non Saline |
| TP10 | 0.5 | Silty Clay, red, brown | 5.5 | 260.0 | 7.0 | 1.82 | | Non Saline |
| TP10 | 1.5 | Extremely weathered Shale, grey | 7.6 | 320.0 | 7.0 | 2.24 | 2 | Slightly Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP11 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.3 | 130.0 | 9.0 | 1.17 | 6 | Non Saline |
| TP11 | 0.5 | Silty Clay, red | 5.7 | 120.0 | 7.0 | 0.84 | | Non Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP12 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.4 | 67.0 | 9.0 | 0.60 | 6 | Non Saline |
| TP12 | 0.5 | Silty Clay, red, brown | 5.5 | 510.0 | 7.0 | 3.57 | | Slightly Saline |
| TP12 | 1.0 | Silty Clay, red, brown | 5.4 | 220.0 | 7.0 | 1.54 | 2 | Non Saline |
| TP12 | 1.5 | Silty Clay, red, brown | 5.5 | 170.0 | 7.0 | 1.19 | | Non Saline |

Blue highlight indicates Non Saline & Slightly Saline soils
Green highlight indicates Moderately Saline soils

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP13 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.8 | 170.0 | 9.0 | 1.53 | 8 | Non Saline |
| TP13 | 0.5 | Silty Clay, pale brown | 8.5 | 390.0 | 7.0 | 2.73 | | Slightly Saline |
| TP13 | 1.0 | Silty Clay, pale brown | 7.7 | 590.0 | 7.0 | 4.13 | 2 | Moderately Saline |
| TP13 | 1.5 | Silty Clay, pale brown becoming brown | 8.6 | 370.0 | 7.0 | 2.59 | | Slightly Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP14 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.3 | 99.0 | 9.0 | 0.89 | 7 | Non Saline |
| TP14 | 0.5 | Silty Clay, red | 5.2 | 330.0 | 7.0 | 2.31 | | Slightly Saline |
| TP14 | 1.5 | Silty Clay, red becoming red, grey | 5.3 | 520.0 | 7.0 | 3.64 | 2 | Slightly Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP15 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.3 | 61.0 | 9.0 | 0.55 | 8 | Non Saline |
| TP15 | 0.5 | Silty Clay, pale brown | 7.8 | 570.0 | 7.0 | 3.99 | | Slightly Saline |
| TP15 | 1.0 | Silty Clay, pale brown | 7.8 | 840.0 | 7.0 | 5.88 | | Moderately Saline |
| TP15 | 1.5 | Silty Clay, red | 7.9 | 900.0 | 7.0 | 6.30 | | Moderately Saline |
| TP15 | 2.0 | Silty Clay, yellow, grey | 7.7 | 1000.0 | 7.0 | 7.00 | 2 | Moderately Saline |
| TP15 | 2.5 | Silty Clay, yellow, grey | 7.7 | 1000.0 | 7.0 | 7.00 | | Moderately Saline |
| TP15 | 3.0 | Extremely weathered Shale, grey | 7.5 | 910.0 | 7.0 | 6.37 | | Moderately Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP16 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.2 | 170.0 | 9.0 | 1.53 | 6 | Non Saline |
| TP16 | 1.0 | Silty Clay, red | 8.0 | 750.0 | 7.0 | 5.25 | | Moderately Saline |
| TP16 | 1.5 | Silty Clay, red | 8.0 | 820.0 | 7.0 | 5.74 | 2 | Moderately Saline |

Blue highlight indicates Non Saline & Slightly Saline soils
Green highlight indicates Moderately Saline soils

Geotest Services Pty Ltd

**APPENDIX B**
**Table Emerson, pH, EC Details**

**33603.1; 421 The Northern Road, Cobbitty NSW 2570**

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP17 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.3 | 130.0 | 9.0 | 1.17 | 7 | Non Saline |
| TP17 | 0.5 | Silty Clay, red | 5.2 | 300.0 | 7.0 | 2.10 | | Slightly Saline |
| TP17 | 1.5 | Silty Clay, red becoming red, grey | 5.2 | 460.0 | 7.0 | 3.22 | 2 | Slightly Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP18 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.3 | 160.0 | 9.0 | 1.44 | 8 | Non Saline |
| TP18 | 0.5 | Silty Clay, brown, red | 5.7 | 29.0 | 7.0 | 0.20 | | Non Saline |
| TP18 | 1.5 | Silty Clay, grey, mottled brown and red | 4.9 | 520.0 | 7.0 | 3.64 | 4 | Slightly Saline |
| TP18 | 2.0 | Silty Clay, grey, mottled brown and red | 4.7 | 770.0 | 7.0 | 5.39 | | Moderately Saline |
| TP18 | 3.0 | Shale grey | 4.6 | 1100.0 | 7.0 | 7.70 | | Moderately Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP19 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.6 | 120.0 | 9.0 | 1.08 | 6 | Non Saline |
| TP19 | 0.5 | Silty Clay, red | 6.5 | 60.0 | 7.0 | 0.42 | | Non Saline |
| TP19 | 1.0 | Shaley Clay, brown | 6.2 | 160.0 | 7.0 | 1.12 | 3 | Non Saline |
| TP19 | 1.5 | Extremely weathered Shale, grey | 7.0 | 160.0 | 7.0 | 1.12 | | Non Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP20 | 0.2 | Sandy Silty Clay, brown to dark brown | 5.7 | 61.0 | 9.0 | 0.55 | 7 | Non Saline |
| TP20 | 0.5 | Silty Clay, red, brown | 5.5 | 89.0 | 7.0 | 0.62 | | Non Saline |
| TP20 | 1.0 | Silty Clay, grey | 4.8 | 520.0 | 7.0 | 3.64 | 2 | Slightly Saline |
| TP20 | 1.5 | Extremely weathered Shale, grey | 5.1 | 570.0 | 7.0 | 3.99 | | Slightly Saline |

Blue highlight indicates Non Saline & Slightly Saline soils
Green highlight indicates Moderately Saline soils

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP21 | 0.2 | Sandy Silty Clay, brown to dark brown | 5.9 | 15.0 | 9.5 | 0.14 | 8 | Non Saline |
| TP21 | 0.5 | Silty Clay, red | 5.8 | 26.0 | 7.0 | 0.18 | | Non Saline |
| TP21 | 1.0 | Silty Clay, grey, mottled yellow | 6.1 | 230.0 | 7.0 | 1.61 | | Non Saline |
| TP21 | 1.5 | Silty Clay, grey, mottled yellow | 5.6 | 170.0 | 7.0 | 1.19 | 4 | Non Saline |
| TP21 | 2.0 | Silty Clay, grey, mottled yellow | 5.3 | 700.0 | 7.0 | 4.90 | | Moderately Saline |
| TP21 | 2.5 | Silty Clay, grey, mottled yellow | 5.4 | 790.0 | 7.0 | 5.53 | 4 | Moderately Saline |
| TP21 | 3.0 | Silty Clay, grey, mottled yellow | 5.6 | 360.0 | 7.0 | 2.52 | | Slightly Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP22 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.3 | 65.0 | 9.0 | 0.59 | 7 | Non Saline |
| TP22 | 0.5 | Silty Clay, red | 7.4 | 99.0 | 7.0 | 0.69 | | Non Saline |
| TP22 | 1.5 | Silty Clay, grey, mottled red | 5.0 | 750.0 | 7.0 | 5.25 | 2 | Moderately Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP23 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.0 | 25.0 | 9.0 | 0.23 | 8 | Non Saline |
| TP23 | 0.5 | Silty Clay, red, brown | 5.6 | 880.0 | 7.0 | 6.16 | | Moderately Saline |
| TP23 | 1.0 | Silty Clay, brown, yellow | 5.7 | 990.0 | 7.0 | 6.93 | 2 | Moderately Saline |
| TP23 | 1.5 | Silty Clay, brown, yellow | 5.6 | 970.0 | 7.0 | 6.79 | | Moderately Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP24 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.1 | 49.0 | 9.0 | 0.44 | 6 | Non Saline |
| TP24 | 0.5 | Silty Clay, brown | 5.3 | 110.0 | 7.0 | 0.77 | | Non Saline |
| TP24 | 1.5 | Silty Clay, brown becoming red, grey | 5.0 | 520.0 | 7.0 | 3.64 | 2 | Slightly Saline |

| Sample I.D | Depth (m) | Laboratory Description | pH | EC (µS/cm) | EC (Factor) | Ece (dS/m) | Emerson Number | Salinity Class |
|---|---|---|---|---|---|---|---|---|
| TP25 | 0.2 | Sandy Silty Clay, brown to dark brown | 6.0 | 40.0 | 9.0 | 0.36 | 6 | Non Saline |
| TP25 | 0.5 | Silty Clay, red, grey | 5.6 | 37.0 | 7.0 | 0.26 | | Non Saline |
| TP25 | 1.0 | Silty Clay, pale brown | 5.2 | 510.0 | 7.0 | 3.57 | | Slightly Saline |
| TP25 | 1.5 | Shaley Clay, grey | 5.2 | 240.0 | 7.0 | 1.68 | 2 | Non Saline |

Blue highlight indicates Non Saline & Slightly Saline soils
Green highlight indicates Moderately Saline soils

# APPENDIX C

**ESP and CEC Analytical Data**

Geotest Services Pty Ltd

**APPENDIX C**
**Table ESP and CEC**
**33603.1; 421 The Northern Road, Cobbitty NSW 2570**

| Location* | Depth (m) | Laboratory Description | ESP (%) | Classification | CEC (cmol+/Kg) | Classification |
|---|---|---|---|---|---|---|
| TP1 | 0.5 | Silty Clay, brown,red | 18.0 | Highly-Sodic | 14 | Moderate |
| TP1 | 1.5 | Silty Clay, brown,red | 26.0 | Highly-Sodic | 15 | Moderate |
| TP1 | 2.5 | Silty Clay, grey, mottled red | 30.0 | Highly-Sodic | 10 | Low |
| TP1 | 3.0 | Extremely weathered Sandy Shale, grey | 30.0 | Highly-Sodic | 13 | Moderate |

| Location* | Depth (m) | Laboratory Description | ESP (%) | Classification | CEC (cmol+/Kg) | Classification |
|---|---|---|---|---|---|---|
| TP7 | 0.5 | Silty Clay, brown,red | 27.0 | Highly-Sodic | 13 | Moderate |
| TP7 | 3.0 | Extremely weathered Sandy Shale, grey | 43.0 | Highly-Sodic | 18 | Moderate |

| Location* | Depth (m) | Laboratory Description | ESP (%) | Classification | CEC (cmol+/Kg) | Classification |
|---|---|---|---|---|---|---|
| TP12 | 0.5 | Silty Clay, red, brown | 24.0 | Highly-Sodic | 13 | Moderate |

| Location* | Depth (m) | Laboratory Description | ESP (%) | Classification | CEC (cmol+/Kg) | Classification |
|---|---|---|---|---|---|---|
| TP15 | 0.5 | Silty Clay, brown,red | 17.0 | Highly-Sodic | 19 | Moderate |
| TP15 | 3.0 | Extremely weathered Sandy Shale, grey | 18.0 | Highly-Sodic | 12 | Low |

| Location* | Depth (m) | Laboratory Description | ESP (%) | Classification | CEC (cmol+/Kg) | Classification |
|---|---|---|---|---|---|---|
| TP18 | 0.5 | Silty Clay, brown, red | 7.9 | Sodic | 22 | Moderate |
| TP18 | 2.0 | Silty Clay, grey, mottled brown and red | 29.0 | Highly-Sodic | 16 | Moderate |
| TP18 | 3.0 | Shale grey | 32.0 | Highly-Sodic | 15 | Moderate |

Geotest Services Pty Ltd

**APPENDIX C**
**Table ESP and CEC**
**33603.1; 421 The Northern Road, Cobbitty NSW 2570**

| Location* | Depth (m) | Laboratory Description | ESP (%) | Classification | CEC (cmol+/Kg) | Classification |
|---|---|---|---|---|---|---|
| TP21 | 0.5 | Silty Clay, red | 9.5 | Sodic | 13 | Moderate |
| TP21 | 3.0 | Silty Clay, grey, mottled yellow | 25.0 | Highly-Sodic | 11 | Low |

| Location* | Depth (m) | Laboratory Description | ESP (%) | Classification | CEC (cmol+/Kg) | Classification |
|---|---|---|---|---|---|---|
| TP25 | 0.5 | Silty Clay, red, grey | 21.0 | Highly-Sodic | 85 | Very High |
| TP25 | 1.0 | Silty Clay, pale brown | 33.0 | Highly-Sodic | 13 | Moderate |
| TP25 | 1.5 | Shaley Clay, grey | 36.0 | Highly-Sodic | 19 | Moderate |

# APPENDIX D

**Laboratory Certificates of Analysis**

eurofins | Environment Testing

# Certificate of Analysis

**Geotest Services**
**Unit 18/24 Garling Rd**
**Kings Park**
**NSW 2148**

**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:** **Jacob Barnes**

**Report** **852446-S**
Project name 531 COBBITTY ROAD
Project ID P33603.2
Received Date Dec 20, 2021

| **Client Sample ID** | | | **TP1 0.2** | **TP1 0.5** | **TP1 1.0** | **TP1 1.5** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S21-De52277** | **S21-De52278** | **S21-De52279** | **S21-De52280** |
| **Date Sampled** | | | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 50 | 230 | 320 | 350 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 6.4 | 5.3 | 5.0 | 4.8 |
| % Moisture | 1 | % | 16 | 15 | 14 | 14 |
| Chloride | 10 | mg/kg | - | 70 | - | 700 |
| Sulphate (as SO4) | 10 | mg/kg | - | 330 | - | 640 |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | - | 18 | - | 26 |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | - | 14 | - | 15 |

| **Client Sample ID** | | | **TP1 2.0** | **TP1 2.5** | **TP1 3.0** | **TP2 0.2** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S21-De52281** | **S21-De52282** | **S21-De52283** | **S21-De52284** |
| **Date Sampled** | | | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 920 | 600 | 490 | 39 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 4.5 | 5.0 | 4.4 | 6.5 |
| % Moisture | 1 | % | 16 | 13 | 14 | 17 |
| Chloride | 10 | mg/kg | - | 930 | 870 | - |
| Sulphate (as SO4) | 10 | mg/kg | - | 220 | 260 | - |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | - | 30 | 30 | - |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | - | 10.0 | 13 | - |

| Client Sample ID | | | TP2 0.5 | TP2 1.5 | TP3 0.2 | TP3 0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52285 | S21-De52286 | S21-De52287 | S21-De52288 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 990 | 1100 | 59 | 160 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 7.5 | 7.9 | 6.1 | 5.4 |
| % Moisture | 1 | % | 16 | 15 | 14 | 20 |

| Client Sample ID | | | TP3 1.0 | TP3 1.5 | TP4 0.2 | TP4 0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52289 | S21-De52290 | S21-De52291 | S21-De52475 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 350 | 480 | 38 | 210 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.3 | 7.6 | 6.2 | 5.9 |
| % Moisture | 1 | % | 19 | 9.0 | 18 | 21 |

| Client Sample ID | | | TP4 1.0 | TP4 1.5 | TP5 0.2 | TP5 0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52476 | S21-De52477 | S21-De52478 | S21-De52479 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 420 | 460 | 32 | 140 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.7 | 8.7 | 6.4 | 5.7 |
| % Moisture | 1 | % | 15 | 9.5 | 20 | 23 |

| Client Sample ID | | | TP5 1.0 | TP5 1.5 | TP6 0.2 | TP6 0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52480 | S21-De52481 | S21-De52482 | S21-De52483 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 300 | 270 | 26 | 35 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.5 | 6.8 | 6.1 | 6.6 |
| % Moisture | 1 | % | 17 | 7.3 | 17 | 18 |

| Client Sample ID | | | TP6 1.5 | TP7 0.2 | TP7 0.5 | TP7 1.5 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S21-De52484** | **S21-De52485** | **S21-De52486** | **S21-De52487** |
| **Date Sampled** | | | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 190 | 29 | 490 | 690 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.5 | 6.4 | 5.4 | 5.7 |
| % Moisture | 1 | % | 20 | 18 | 15 | 14 |
| Chloride | 10 | mg/kg | - | < 10 | 1200 | 890 |
| Sulphate (as SO4) | 10 | mg/kg | - | 13 | 380 | 170 |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | - | - | 27 | - |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | - | - | 13 | - |

| Client Sample ID | | | TP7 3.0 | TP8 0.2 | TP8 0.5 | TP8 1.0 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S21-De52488** | **S21-De52489** | **S21-De52490** | **S21-De52491** |
| **Date Sampled** | | | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 620 | 41 | 38 | 92 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.4 | 5.9 | 6.0 | 5.3 |
| % Moisture | 1 | % | 14 | 21 | 19 | 16 |
| Chloride | 10 | mg/kg | 1000 | - | - | - |
| Sulphate (as SO4) | 10 | mg/kg | 200 | - | - | - |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | 43 | - | - | - |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | 18 | - | - | - |

| Client Sample ID | | | TP8 1.5 | TP9 0.2 | TP9 0.5 | TP9 1.5 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S21-De52492** | **S21-De52493** | **S21-De52494** | **S21-De52495** |
| **Date Sampled** | | | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 420 | 63 | 130 | 290 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.4 | 5.5 | 6.3 | 9.3 |
| % Moisture | 1 | % | 8.1 | 18 | 15 | 14 |

| Client Sample ID | | | TP10 0.2 | TP10 0.5 | TP10 1.5 | TP11 0.2 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S21-De52496** | **S21-De52497** | **S21-De52498** | **S21-De52499** |
| **Date Sampled** | | | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 51 | 260 | 320 | 130 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 6.1 | 5.5 | 7.6 | 6.3 |
| % Moisture | 1 | % | 17 | 20 | 9.5 | 17 |

| Client Sample ID | | | TP11 0.5 | TP12 0.2 | TP12 0.5 | TP12 1.0 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S21-De52500** | **S21-De52501** | **S21-De52502** | **S21-De52503** |
| **Date Sampled** | | | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 120 | 67 | 510 | 220 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.7 | 6.4 | 5.5 | 5.4 |
| % Moisture | 1 | % | 16 | 14 | 15 | 16 |
| Chloride | 10 | mg/kg | - | - | 540 | - |
| Sulphate (as SO4) | 10 | mg/kg | - | - | 250 | - |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | - | - | 24 | - |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | - | - | 14 | - |

| Client Sample ID | | | TP12 1.5 | TP13 0.2 | TP13 0.5 | TP13 1.0 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S21-De52504** | **S21-De52505** | **S21-De52506** | **S21-De52507** |
| **Date Sampled** | | | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 170 | 170 | 390 | 590 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.5 | 6.8 | 8.5 | 7.7 |
| % Moisture | 1 | % | 16 | 17 | 18 | 19 |
| Chloride | 10 | mg/kg | 380 | - | - | - |
| Sulphate (as SO4) | 10 | mg/kg | 290 | - | - | - |

| Client Sample ID | | | TP13 1.5 | TP14 0.2 | TP14 0.5 | TP14 1.5 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S21-De52508** | **S21-De52509** | **S21-De52510** | **S21-De52511** |
| **Date Sampled** | | | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 370 | 99 | 330 | 520 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 8.6 | 6.3 | 5.2 | 5.3 |
| % Moisture | 1 | % | 20 | 18 | 16 | 18 |

| Client Sample ID | | | TP15 0.2 | TP15 0.5 | TP15 1.0 | TP15 1.5 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S21-De52512** | **S21-De52513** | **S21-De52514** | **S21-De52515** |
| **Date Sampled** | | | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** | **Dec 17, 2021** |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 61 | 570 | 840 | 900 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 6.3 | 7.8 | 7.8 | 7.9 |
| % Moisture | 1 | % | 19 | 18 | 15 | 14 |
| Chloride | 10 | mg/kg | - | 890 | - | 980 |
| Sulphate (as SO4) | 10 | mg/kg | - | 280 | - | 55 |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | - | 17 | - | - |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | - | 19 | - | - |

| Client Sample ID | | | TP15 2.0 | TP15 2.5 | TP15 3.0 | TP16 0.2 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52516 | S21-De52517 | S21-De52518 | S21-De52519 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 1000 | 1000 | 910 | 170 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 7.7 | 7.7 | 7.5 | 6.2 |
| % Moisture | 1 | % | 16 | 16 | 18 | 20 |
| Chloride | 10 | mg/kg | 1300 | 1400 | 1500 | - |
| Sulphate (as SO4) | 10 | mg/kg | 170 | 120 | 79 | - |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | - | - | 18 | - |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | - | - | 12 | - |

| Client Sample ID | | | TP16 1.0 | TP16 1.5 | TP17 0.2 | TP17 0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52520 | S21-De52521 | S21-De52522 | S21-De52523 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 750 | 820 | 130 | 300 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 8.0 | 8.0 | 6.3 | 5.2 |
| % Moisture | 1 | % | 16 | 15 | 20 | 17 |

| Client Sample ID | | | TP17 1.5 | TP18 0.2 | TP18 0.5 | TP18 1.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52524 | S21-De52525 | S21-De52526 | S21-De52527 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 460 | 160 | 29 | 520 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.2 | 6.3 | 5.7 | 4.9 |
| % Moisture | 1 | % | 17 | 22 | 22 | 18 |
| Chloride | 10 | mg/kg | - | - | 14 | - |
| Sulphate (as SO4) | 10 | mg/kg | - | - | 85 | - |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | - | - | 7.9 | - |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | - | - | 22 | - |

| Client Sample ID | | | TP18 2.0 | TP18 3.0 | TP19 0.2 | TP19 0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52528 | S21-De52529 | S21-De52530 | S21-De52531 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 770 | 1100 | 120 | 60 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 4.7 | 4.6 | 6.6 | 6.5 |
| % Moisture | 1 | % | 18 | 19 | 20 | 16 |
| Chloride | 10 | mg/kg | 1000 | 1500 | - | - |
| Sulphate (as SO4) | 10 | mg/kg | 230 | 190 | - | - |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | 29 | 32 | - | - |

| Client Sample ID | | | TP18 2.0 | TP18 3.0 | TP19 0.2 | TP19 0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52528 | S21-De52529 | S21-De52530 | S21-De52531 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | 16 | 15 | - | - |

| Client Sample ID | | | TP19 1.0 | TP19 1.5 | TP20 0.2 | TP20 0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52532 | S21-De52533 | S21-De52534 | S21-De52535 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 160 | 160 | 61 | 89 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 6.2 | 7.0 | 5.7 | 5.5 |
| % Moisture | 1 | % | 9.5 | 9.6 | 18 | 18 |

| Client Sample ID | | | TP20 1.0 | TP20 1.5 | TP21 0.2 | TP21 0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52536 | S21-De52537 | S21-De52538 | S21-De52539 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 520 | 570 | 15 | 26 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 4.8 | 5.1 | 5.9 | 5.8 |
| % Moisture | 1 | % | 13 | 14 | 17 | 18 |
| Chloride | 10 | mg/kg | - | - | < 10 | < 10 |
| Sulphate (as SO4) | 10 | mg/kg | - | - | < 10 | 27 |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | - | - | - | 9.5 |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | - | - | - | 13 |

| Client Sample ID | | | TP21 1.0 | TP21 1.5 | TP21 2.0 | TP21 2.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52540 | S21-De52541 | S21-De52542 | S21-De52543 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 230 | 170 | 700 | 790 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 6.1 | 5.6 | 5.3 | 5.4 |
| % Moisture | 1 | % | 15 | 15 | 18 | 16 |
| Chloride | 10 | mg/kg | 140 | - | - | - |
| Sulphate (as SO4) | 10 | mg/kg | 190 | - | - | - |

| Client Sample ID | | | TP21 3.0 | TP22 0.2 | TP22 0.5 | TP22 1.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52544 | S21-De52545 | S21-De52546 | S21-De52547 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 360 | 65 | 99 | 750 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.6 | 6.3 | 7.4 | 5.0 |
| % Moisture | 1 | % | 16 | 18 | 18 | 19 |
| Chloride | 10 | mg/kg | 1100 | - | - | - |
| Sulphate (as SO4) | 10 | mg/kg | 160 | - | - | - |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | 25 | - | - | - |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | 11 | - | - | - |

| Client Sample ID | | | TP23 0.2 | TP23 0.5 | TP23 1.0 | TP23 1.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52548 | S21-De52549 | S21-De52550 | S21-De52551 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 25 | 880 | 990 | 970 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 6.0 | 5.6 | 5.7 | 5.6 |
| % Moisture | 1 | % | 17 | 17 | 16 | 17 |

| Client Sample ID | | | TP24 0.2 | TP24 0.5 | TP24 1.5 | TP25 0.2 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52552 | S21-De52553 | S21-De52554 | S21-De52555 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 49 | 110 | 520 | 40 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 6.1 | 5.3 | 5.0 | 6.0 |
| % Moisture | 1 | % | 19 | 19 | 22 | 15 |

| Client Sample ID | | | TP25 0.5 | TP25 1.0 | TP25 1.5 |
|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil |
| Eurofins Sample No. | | | S21-De52723 | S21-De52724 | S21-De52725 |
| Date Sampled | | | Dec 17, 2021 | Dec 17, 2021 | Dec 17, 2021 |
| Test/Reference | LOR | Unit | | | |
| | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | 37 | 510 | 240 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 5.6 | 5.2 | 5.2 |
| % Moisture | 1 | % | 21 | 15 | 16 |
| Chloride | 10 | mg/kg | 20 | 460 | 390 |
| Sulphate (as SO4) | 10 | mg/kg | 120 | 230 | 160 |
| Exchangeable Sodium Percentage (ESP) | 0.1 | % | 21 | 33 | 36 |
| **Cation Exchange Capacity** | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | 85 | 13 | 19 |

## 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 |
|---|---|---|---|
| Conductivity (1:5 aqueous extract at 25°C as rec.) | Melbourne | Jan 11, 2022 | 7 Days |
| - Method: LTM-INO-4030 Conductivity | | | |
| Exchangeable Sodium Percentage (ESP) | Melbourne | Jan 18, 2022 | 28 Days |
| - Method: LTM-MET-3060 - Cation Exchange Capacity (CEC) & Exchangeable Sodium Percentage (ESP) | | | |
| Eurofins Suite B18 | | | |
| pH (1:5 Aqueous extract at 25°C as rec.) | Sydney | Dec 30, 2021 | 7 Days |
| - Method: LTM-GEN-7090 pH by ISE | | | |
| Chloride | Sydney | Dec 30, 2021 | 28 Days |
| - Method: In-house method LTM-INO-4270 Anions by Ion Chromatography | | | |
| Sulphate (as SO4) | Sydney | Dec 30, 2021 | 28 Days |
| - Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph | | | |
| % Moisture | Sydney | Dec 22, 2021 | 14 Days |
| - Method: LTM-GEN-7080 Moisture | | | |
| Cation Exchange Capacity | Melbourne | Jan 18, 2022 | 28 Days |
| - Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage | | | |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | |
| 1 | TP1 0.2 | Dec 17, 2021 | | Soil | S21-De52277 | X | | X | | X | | |
| 2 | TP1 0.5 | Dec 17, 2021 | | Soil | S21-De52278 | | | | X | X | X | X |
| 3 | TP1 1.0 | Dec 17, 2021 | | Soil | S21-De52279 | X | | X | | X | | |
| 4 | TP1 1.5 | Dec 17, 2021 | | Soil | S21-De52280 | | | | X | X | X | X |
| 5 | TP1 2.0 | Dec 17, 2021 | | Soil | S21-De52281 | X | | X | | X | | |
| 6 | TP1 2.5 | Dec 17, 2021 | | Soil | S21-De52282 | | | | X | X | X | X |
| 7 | TP1 3.0 | Dec 17, 2021 | | Soil | S21-De52283 | | | | X | X | X | X |
| 8 | TP2 0.2 | Dec 17, 2021 | | Soil | S21-De52284 | X | | X | | X | | |
| 9 | TP2 0.5 | Dec 17, 2021 | | Soil | S21-De52285 | X | | X | | X | | |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| 10 | TP2 1.5 | Dec 17, 2021 | | Soil | S21-De52286 | X | | X | | X | | |
| 11 | TP3 0.2 | Dec 17, 2021 | | Soil | S21-De52287 | X | | X | | X | | |
| 12 | TP3 0.5 | Dec 17, 2021 | | Soil | S21-De52288 | X | | X | | X | | |
| 13 | TP3 1.0 | Dec 17, 2021 | | Soil | S21-De52289 | X | | X | | X | | |
| 14 | TP3 1.5 | Dec 17, 2021 | | Soil | S21-De52290 | X | | X | | X | | |
| 15 | TP4 0.2 | Dec 17, 2021 | | Soil | S21-De52291 | X | | X | | X | | |
| 16 | TP2 1.0 | Dec 17, 2021 | | Soil | S21-De52292 | | X | | | | | |
| 17 | TP4 0.5 | Dec 17, 2021 | | Soil | S21-De52475 | X | | X | | X | | |
| 18 | TP4 1.0 | Dec 17, 2021 | | Soil | S21-De52476 | X | | X | | X | | |
| 19 | TP4 1.5 | Dec 17, 2021 | | Soil | S21-De52477 | X | | X | | X | | |
| 20 | TP5 0.2 | Dec 17, 2021 | | Soil | S21-De52478 | X | | X | | X | | |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| 21 | TP5 0.5 | Dec 17, 2021 | | Soil | S21-De52479 | X | | X | | X | | |
| 22 | TP5 1.0 | Dec 17, 2021 | | Soil | S21-De52480 | X | | X | | X | | |
| 23 | TP5 1.5 | Dec 17, 2021 | | Soil | S21-De52481 | X | | X | | X | | |
| 24 | TP6 0.2 | Dec 17, 2021 | | Soil | S21-De52482 | X | | X | | X | | |
| 25 | TP6 0.5 | Dec 17, 2021 | | Soil | S21-De52483 | X | | X | | X | | |
| 26 | TP6 1.5 | Dec 17, 2021 | | Soil | S21-De52484 | X | | X | | X | | |
| 27 | TP7 0.2 | Dec 17, 2021 | | Soil | S21-De52485 | X | | | X | X | | |
| 28 | TP7 0.5 | Dec 17, 2021 | | Soil | S21-De52486 | | | | X | X | X | X |
| 29 | TP7 1.5 | Dec 17, 2021 | | Soil | S21-De52487 | X | | | X | X | | |
| 30 | TP7 3.0 | Dec 17, 2021 | | Soil | S21-De52488 | | | | X | X | X | X |
| 31 | TP8 0.2 | Dec 17, 2021 | | Soil | S21-De52489 | X | | X | | X | | |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| 32 | TP8 0.5 | Dec 17, 2021 | | Soil | S21-De52490 | X | | X | | X | | |
| 33 | TP8 1.0 | Dec 17, 2021 | | Soil | S21-De52491 | X | | X | | X | | |
| 34 | TP8 1.5 | Dec 17, 2021 | | Soil | S21-De52492 | X | | X | | X | | |
| 35 | TP9 0.2 | Dec 17, 2021 | | Soil | S21-De52493 | X | | X | | X | | |
| 36 | TP9 0.5 | Dec 17, 2021 | | Soil | S21-De52494 | X | | X | | X | | |
| 37 | TP9 1.5 | Dec 17, 2021 | | Soil | S21-De52495 | X | | X | | X | | |
| 38 | TP10 0.2 | Dec 17, 2021 | | Soil | S21-De52496 | X | | X | | X | | |
| 39 | TP10 0.5 | Dec 17, 2021 | | Soil | S21-De52497 | X | | X | | X | | |
| 40 | TP10 1.5 | Dec 17, 2021 | | Soil | S21-De52498 | X | | X | | X | | |
| 41 | TP11 0.2 | Dec 17, 2021 | | Soil | S21-De52499 | X | | X | | X | | |
| 42 | TP11 0.5 | Dec 17, 2021 | | Soil | S21-De52500 | X | | X | | X | | |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| 43 | TP12 0.2 | Dec 17, 2021 | | Soil | S21-De52501 | X | | X | | X | | |
| 44 | TP12 0.5 | Dec 17, 2021 | | Soil | S21-De52502 | | | | X | X | X | X |
| 45 | TP12 1.0 | Dec 17, 2021 | | Soil | S21-De52503 | X | | X | | X | | |
| 46 | TP12 1.5 | Dec 17, 2021 | | Soil | S21-De52504 | X | | | X | X | | |
| 47 | TP13 0.2 | Dec 17, 2021 | | Soil | S21-De52505 | X | | X | | X | | |
| 48 | TP13 0.5 | Dec 17, 2021 | | Soil | S21-De52506 | X | | X | | X | | |
| 49 | TP13 1.0 | Dec 17, 2021 | | Soil | S21-De52507 | X | | X | | X | | |
| 50 | TP13 1.5 | Dec 17, 2021 | | Soil | S21-De52508 | X | | X | | X | | |
| 51 | TP14 0.2 | Dec 17, 2021 | | Soil | S21-De52509 | X | | X | | X | | |
| 52 | TP14 0.5 | Dec 17, 2021 | | Soil | S21-De52510 | X | | X | | X | | |
| 53 | TP14 1.5 | Dec 17, 2021 | | Soil | S21-De52511 | X | | X | | X | | |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| 54 | TP15 0.2 | Dec 17, 2021 | | Soil | S21-De52512 | X | | X | | X | | |
| 55 | TP15 0.5 | Dec 17, 2021 | | Soil | S21-De52513 | | | | X | X | X | X |
| 56 | TP15 1.0 | Dec 17, 2021 | | Soil | S21-De52514 | X | | X | | X | | |
| 57 | TP15 1.5 | Dec 17, 2021 | | Soil | S21-De52515 | X | | | X | X | | |
| 58 | TP15 2.0 | Dec 17, 2021 | | Soil | S21-De52516 | X | | | X | X | | |
| 59 | TP15 2.5 | Dec 17, 2021 | | Soil | S21-De52517 | X | | | X | X | | |
| 60 | TP15 3.0 | Dec 17, 2021 | | Soil | S21-De52518 | | | | X | X | X | X |
| 61 | TP16 0.2 | Dec 17, 2021 | | Soil | S21-De52519 | X | | X | | X | | |
| 62 | TP16 1.0 | Dec 17, 2021 | | Soil | S21-De52520 | X | | X | | X | | |
| 63 | TP16 1.5 | Dec 17, 2021 | | Soil | S21-De52521 | X | | X | | X | | |
| 64 | TP17 0.2 | Dec 17, 2021 | | Soil | S21-De52522 | X | | X | | X | | |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| 65 | TP17 0.5 | Dec 17, 2021 | | Soil | S21-De52523 | X | | X | | X | | |
| 66 | TP17 1.5 | Dec 17, 2021 | | Soil | S21-De52524 | X | | X | | X | | |
| 67 | TP18 0.2 | Dec 17, 2021 | | Soil | S21-De52525 | X | | X | | X | | |
| 68 | TP18 0.5 | Dec 17, 2021 | | Soil | S21-De52526 | | | | X | X | X | X |
| 69 | TP18 1.5 | Dec 17, 2021 | | Soil | S21-De52527 | X | | X | | X | | |
| 70 | TP18 2.0 | Dec 17, 2021 | | Soil | S21-De52528 | | | | X | X | X | X |
| 71 | TP18 3.0 | Dec 17, 2021 | | Soil | S21-De52529 | | | | X | X | X | X |
| 72 | TP19 0.2 | Dec 17, 2021 | | Soil | S21-De52530 | X | | X | | X | | |
| 73 | TP19 0.5 | Dec 17, 2021 | | Soil | S21-De52531 | X | | X | | X | | |
| 74 | TP19 1.0 | Dec 17, 2021 | | Soil | S21-De52532 | X | | X | | X | | |
| 75 | TP19 1.5 | Dec 17, 2021 | | Soil | S21-De52533 | X | | X | | X | | |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| 76 | TP20 0.2 | Dec 17, 2021 | | Soil | S21-De52534 | X | | X | | X | | |
| 77 | TP20 0.5 | Dec 17, 2021 | | Soil | S21-De52535 | X | | X | | X | | |
| 78 | TP20 1.0 | Dec 17, 2021 | | Soil | S21-De52536 | X | | X | | X | | |
| 79 | TP20 1.5 | Dec 17, 2021 | | Soil | S21-De52537 | X | | X | | X | | |
| 80 | TP21 0.2 | Dec 17, 2021 | | Soil | S21-De52538 | X | | | X | X | | |
| 81 | TP21 0.5 | Dec 17, 2021 | | Soil | S21-De52539 | | | | X | X | X | X |
| 82 | TP21 1.0 | Dec 17, 2021 | | Soil | S21-De52540 | X | | | X | X | | |
| 83 | TP21 1.5 | Dec 17, 2021 | | Soil | S21-De52541 | X | | X | | X | | |
| 84 | TP21 2.0 | Dec 17, 2021 | | Soil | S21-De52542 | X | | X | | X | | |
| 85 | TP21 2.5 | Dec 17, 2021 | | Soil | S21-De52543 | X | | X | | X | | |
| 86 | TP21 3.0 | Dec 17, 2021 | | Soil | S21-De52544 | | | | X | X | X | X |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| 87 | TP22 0.2 | Dec 17, 2021 | | Soil | S21-De52545 | X | | X | | X | | |
| 88 | TP22 0.5 | Dec 17, 2021 | | Soil | S21-De52546 | X | | X | | X | | |
| 89 | TP22 1.5 | Dec 17, 2021 | | Soil | S21-De52547 | X | | X | | X | | |
| 90 | TP23 0.2 | Dec 17, 2021 | | Soil | S21-De52548 | X | | X | | X | | |
| 91 | TP23 0.5 | Dec 17, 2021 | | Soil | S21-De52549 | X | | X | | X | | |
| 92 | TP23 1.0 | Dec 17, 2021 | | Soil | S21-De52550 | X | | X | | X | | |
| 93 | TP23 1.5 | Dec 17, 2021 | | Soil | S21-De52551 | X | | X | | X | | |
| 94 | TP24 0.2 | Dec 17, 2021 | | Soil | S21-De52552 | X | | X | | X | | |
| 95 | TP24 0.5 | Dec 17, 2021 | | Soil | S21-De52553 | X | | X | | X | | |
| 96 | TP24 1.5 | Dec 17, 2021 | | Soil | S21-De52554 | X | | X | | X | | |
| 97 | TP25 0.2 | Dec 17, 2021 | | Soil | S21-De52555 | X | | X | | X | | |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| 98 | TP6 1.0 | Dec 17, 2021 | | Soil | S21-De52556 | | X | | | | | |
| 99 | TP7 1.0 | Dec 17, 2021 | | Soil | S21-De52557 | | X | | | | | |
| 100 | TP7 2.0 | Dec 17, 2021 | | Soil | S21-De52558 | | X | | | | | |
| 101 | TP7 2.5 | Dec 17, 2021 | | Soil | S21-De52559 | | X | | | | | |
| 102 | TP9 1.0 | Dec 17, 2021 | | Soil | S21-De52560 | | X | | | | | |
| 103 | TP10 1.0 | Dec 17, 2021 | | Soil | S21-De52561 | | X | | | | | |
| 104 | TP11 1.0 | Dec 17, 2021 | | Soil | S21-De52562 | | X | | | | | |
| 105 | TP11 1.5 | Dec 17, 2021 | | Soil | S21-De52563 | | X | | | | | |
| 106 | TP14 1.0 | Dec 17, 2021 | | Soil | S21-De52564 | | X | | | | | |
| 107 | TP16 0.5 | Dec 17, 2021 | | Soil | S21-De52565 | | X | | | | | |
| 108 | TP17 1.0 | Dec 17, 2021 | | Soil | S21-De52566 | | X | | | | | |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

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

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** Geotest Services
**Address:** Unit 18/24 Garling Rd
Kings Park
NSW 2148

**Project Name:** 531 COBBITTY ROAD
**Project ID:** P33603.2

**Order No.:**
**Report #:** 852446
**Phone:** 02 9671 4443
**Fax:** 02 9671 4343

**Received:** Dec 20, 2021 1:19 PM
**Due:** Jan 5, 2022
**Priority:** 10 Day
**Contact Name:** Jacob Barnes

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (1:5 aqueous extract at 25°C as rec.) | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Eurofins Suite B18 | Moisture Set | Cation Exchange Capacity | Exchangeable Sodium Percentage (ESP) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | X | X | X | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| 109 | TP18 1.0 | Dec 17, 2021 | | Soil | S21-De52567 | | X | | | | | |
| 110 | TP18 2.5 | Dec 17, 2021 | | Soil | S21-De52568 | | X | | | | | |
| 111 | TP22 1.0 | Dec 17, 2021 | | Soil | S21-De52569 | | X | | | | | |
| 112 | TP24 1.0 | Dec 17, 2021 | | Soil | S21-De52570 | | X | | | | | |
| 113 | TP25 0.5 | Dec 17, 2021 | | Soil | S21-De52723 | | | | X | X | X | X |
| 114 | TP25 1.0 | Dec 17, 2021 | | Soil | S21-De52724 | | | | X | X | X | X |
| 115 | TP25 1.5 | Dec 17, 2021 | | Soil | S21-De52725 | | | | X | X | X | X |
| **Test Counts** | | | | | | 82 | 16 | 74 | 25 | 99 | 17 | 17 |

## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

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

### Units

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

### Terms

| | |
|---|---|
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **LOR** | Limit of Reporting. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **CRM** | Certified Reference Material - 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. |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **USEPA** | United States Environmental Protection Agency |
| **APHA** | American Public Health Association |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **COC** | Chain of Custody |
| **SRA** | Sample Receipt Advice |
| **QSM** | US Department of Defense Quality Systems Manual Version 5.4 |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **TEQ** | Toxic Equivalency Quotient |
| **WA DWER** | Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA |

### QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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

.

### QC Data General Comments

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

**Quality Control Results**

| Test | | | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | | | uS/cm | < 10 | | | 10 | Pass | |
| Chloride | | | mg/kg | < 10 | | | 10 | Pass | |
| Sulphate (as SO4) | | | mg/kg | < 10 | | | 10 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | | | % | 114 | | | 70-130 | Pass | |
| Chloride | | | % | 103 | | | 70-130 | Pass | |
| Sulphate (as SO4) | | | % | 106 | | | 70-130 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| | | | | Result 1 | | | | | |
| Chloride | S22-Ja03692 | NCP | % | 112 | | | 70-130 | Pass | |
| Sulphate (as SO4) | S22-Ja03692 | NCP | % | 111 | | | 70-130 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | S21-De52278 | CP | uS/cm | 230 | 230 | 1.3 | 30% | Pass | |
| pH (1:5 Aqueous extract at 25°C as rec.) | S21-De52278 | CP | pH Units | 5.3 | 5.4 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S21-De52286 | CP | % | 15 | 15 | 2.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | S21-De52288 | CP | uS/cm | 160 | 180 | 7.7 | 30% | Pass | |
| pH (1:5 Aqueous extract at 25°C as rec.) | S21-De52288 | CP | pH Units | 5.4 | 5.3 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | S21-De52482 | CP | uS/cm | 26 | 32 | 19 | 30% | Pass | |
| pH (1:5 Aqueous extract at 25°C as rec.) | S21-De52482 | CP | pH Units | 6.1 | 6.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | S21-De52489 | CP | uS/cm | 41 | 81 | 66 | 30% | Fail | Q15 |
| pH (1:5 Aqueous extract at 25°C as rec.) | S21-De52489 | CP | pH Units | 5.9 | 5.8 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | S21-De52499 | CP | uS/cm | 130 | 94 | 35 | 30% | Fail | Q15 |
| pH (1:5 Aqueous extract at 25°C as rec.) | S21-De52499 | CP | pH Units | 6.3 | 6.2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Chloride | S21-De52504 | CP | mg/kg | 380 | 380 | 1.0 | 30% | Pass | |
| Sulphate (as SO4) | S21-De52504 | CP | mg/kg | 290 | 280 | 1.0 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | S21-De52510 | CP | uS/cm | 330 | 230 | 35 | 30% | Fail | Q02 |
| pH (1:5 Aqueous extract at 25°C as rec.) | S21-De52510 | CP | pH Units | 5.2 | 5.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Chloride | S21-De52513 | CP | mg/kg | 890 | 890 | <1 | 30% | Pass | |
| Sulphate (as SO4) | S21-De52513 | CP | mg/kg | 280 | 280 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | S21-De52522 | CP | uS/cm | 130 | 51 | 89 | 30% | Fail | Q02 |
| pH (1:5 Aqueous extract at 25°C as rec.) | S21-De52522 | CP | pH Units | 6.3 | 6.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | S21-De52552 | CP | uS/cm | 49 | 47 | 5.4 | 30% | Pass | |
| pH (1:5 Aqueous extract at 25°C as rec.) | S21-De52552 | CP | pH Units | 6.1 | 6.0 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | S21-De52555 | CP | uS/cm | 40 | 49 | 19 | 30% | Pass | |
| pH (1:5 Aqueous extract at 25°C as rec.) | S21-De52555 | CP | pH Units | 6.0 | 6.0 | <1 | 30% | Pass | |

## Comments

### Sample Integrity

| | |
|---|---|
| Custody Seals Intact (if used) | N/A |
| Attempt to Chill was evident | No |
| 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 |
|---|---|
| Q02 | The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause |
| 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 |
| Charl Du Preez | Senior Analyst-Inorganic (NSW) |
| Scott Beddoes | Senior Analyst-Inorganic (VIC) |
| Emily Rosenberg | Senior Analyst-Metal (VIC) |

**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

# CHAIN OF CUSTODY RECORD

CLIENT DETAILS



| | | | |
|---|---|---|---|
| Company Name : GEOTEST SERVICES PTY LTD | Contact Name : DAVID SPASOJEVIC | Purchase Order : | COC Number : |
| Office Address : 18/24 GARLING ROAD | Project Manager : Jacob Barnes | PROJECT Number : P33603.2 | Eurofins \| mgt quote ID : |
| KINGS PARK, N.S.W. 2148 | Email for results : admin@geotestservices.com.au | PROJECT Name : 531 Cobbitty Road | Data output format: |
| PH: 9671 4443 FAX: 9671 4343 | | | |

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

| | Sample ID | Date | Matrix | ELECTRICAL CONDUCTIVITY | pH | SUITE B18 | C.E.C | E.S.P | HOLD |
|---|---|---|---|---|---|---|---|---|---|
| 1 | TP1 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 2 | TP1 0.5 | 17/12/2021 | SOIL | X | | X | X | X | |
| 3 | TP1 1.0 | 17/12/2021 | SOIL | X | X | | | | |
| 4 | TP1 1.5 | 17/12/2021 | SOIL | X | | X | X | X | |
| 5 | TP1 2.0 | 17/12/2021 | SOIL | X | X | | | | |
| 6 | TP1 2.5 | 17/12/2021 | SOIL | X | | X | X | X | |
| 7 | TP1 3.0 | 17/12/2021 | SOIL | X | | X | X | X | |
| 8 | TP2 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 9 | TP2 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 10 | TP2 1.0 | 17/12/2021 | SOIL | | | | | | X |
| 11 | TP2 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 12 | TP3 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 13 | TP3 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 14 | TP3 1.0 | 17/12/2021 | SOIL | X | X | | | | |
| 15 | TP3 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 16 | TP4 0.2 | 17/12/2021 | SOIL | X | X | | | | |

Some common holding times (with correct preservation).
For further information contact the lab

| Waters | | Soils | |
|---|---|---|---|
| BTEX, MAH, VOC | 14 days | BTEX, MAH, VOC | 14 days |
| TRH, PAH, Phenols, Pesticides | 7 days | TRH, PAH, Phenols, Pesticides | 14 days |
| Heavy Metals | 6 months | Heavy Metals | 6 months |
| Mercury, CrVI | 28 days | Mercury, CrVI | 28 days |
| Microbiological testing | 24 hours | Microbiological testing | 72 hours |
| BOD, Nitrate, Nitrite, Total N | 2 days | Anions | 28 days |
| Solids - TSS, TDS etc | 7 days | SPOCAS, pH Field and FOX, CrS | 24 hours |
| Ferrous iron | 7 days | ASLP, TCLP | 7 days |

Containers:

| | 500ML | 60ML METALS | 120ML MICROBIO | 1LA | 40mL vial | 125mL A | Jar | ZIP.BAG | Sample comments: |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | X | |
| 2 | | | | | | | | X | |
| 3 | | | | | | | | X | |
| 4 | | | | | | | | X | |
| 5 | | | | | | | | X | |
| 6 | | | | | | | | X | |
| 7 | | | | | | | | X | |
| 8 | | | | | | | | X | |
| 9 | | | | | | | | X | |
| 10 | | | | | | | | X | |
| 11 | | | | | | | | X | |
| 12 | | | | | | | | X | |
| 13 | | | | | | | | X | |
| 14 | | | | | | | | X | |
| 15 | | | | | | | | X | |
| 16 | | | | | | | | X | |

| | Laboratory Staff | Turn around time | Method Of Shipment | Temperature on arrival: |
|---|---|---|---|---|
| Relinquished By: Jacob Barnes | Received By: | 1 DAY ☐ 2 DAY ☐ 3 DAY ☐ | ☐ Courier<br>☑ Hand Delivered<br>☐ Postal | 11.8 |
| Date & Time : 20/12/2021 | Date & Time : | 5 DAY ☑ 10 DAY ☐ Other: | M.H | Report number: |
| Signature: | Signature: | | Courier Consignment # : 20/12/21 | # 852446 |

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

# CHAIN OF CUSTODY RECORD

CLIENT DETAILS



| | | | |
|---|---|---|---|
| Company Name : GEOTEST SERVICES PTY LTD | Contact Name : DAVID SPASOJEVIC | Purchase Order : | COC Number : |
| Office Address : 18/24 GARLING ROAD | Project Manager : Jacob Barnes | PROJECT Number : P33603.2 | Eurofins \| mgt quote ID : |
| KINGS PARK, N.S.W. 2148 | Email for results : admin@geotestservices.com.au | PROJECT Name : 531 Cobbitty Road | Data output format: |
| PH: 9671 4443 FAX: 9671 4343 | | | |

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

| | Sample ID | Date | Matrix | ELECTRICAL CONDUCTIVITY | pH | SUITE B18 | C.E.C | E.S.P | HOLD |
|---|---|---|---|---|---|---|---|---|---|
| 17 | TP4 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 18 | TP4 1.0 | 17/12/2021 | SOIL | X | X | | | | |
| 19 | TP4 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 20 | TP5 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 21 | TP5 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 22 | TP5 1.0 | 17/12/2021 | SOIL | X | X | | | | |
| 23 | TP5 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 24 | TP6 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 25 | TP6 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 26 | TP6 1.0 | 17/12/2021 | SOIL | | | | | | X |
| 27 | TP6 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 28 | TP7 0.2 | 17/12/2021 | SOIL | X | | X | | | |
| 29 | TP7 0.5 | 17/12/2021 | SOIL | X | | X | X | X | |
| 30 | TP7 1.0 | 17/12/2021 | SOIL | | | | | | X |
| 31 | TP7 1.5 | 17/12/2021 | SOIL | X | | X | | | |
| 32 | TP7 2.0 | 17/12/2021 | SOIL | | | | | | X |

Some common holding times (with correct preservation).
For further information contact the lab

| Waters | | Soils | |
|---|---|---|---|
| BTEX, MAH, VOC | 14 days | BTEX, MAH, VOC | 14 days |
| TRH, PAH, Phenols, Pesticides | 7 days | TRH, PAH, Phenols, Pesticides | 14 days |
| Heavy Metals | 6 months | Heavy Metals | 6 months |
| Mercury, CrVI | 28 days | Mercury, CrVI | 28 days |
| Microbiological testing | 24 hours | Microbiological testing | 72 hours |
| BOD, Nitrate, Nitrite, Total N | 2 days | Anions | 28 days |
| Solids - TSS, TDS etc | 7 days | SPOCAS, pH Field and FOX, CrS | 24 hours |
| Ferrous iron | 7 days | ASLP, TCLP | 7 days |

Containers:

| | 500ML | 60ML METALS | 120ML MICROBIO | 1LA | 40mL vial | 125mL A | Jar | ZIP.BAG | Sample comments: |
|---|---|---|---|---|---|---|---|---|---|
| 17 | | | | | | | | X | |
| 18 | | | | | | | | X | |
| 19 | | | | | | | | X | |
| 20 | | | | | | | | X | |
| 21 | | | | | | | | X | |
| 22 | | | | | | | | X | |
| 23 | | | | | | | | X | |
| 24 | | | | | | | | X | |
| 25 | | | | | | | | X | |
| 26 | | | | | | | | X | |
| 27 | | | | | | | | X | |
| 28 | | | | | | | | X | |
| 29 | | | | | | | | X | |
| 30 | | | | | | | | X | |
| 31 | | | | | | | | X | |
| 32 | | | | | | | | X | |

| Laboratory Staff | | Turn around time | Method Of Shipment | Temperature on arrival: |
|---|---|---|---|---|
| Relinquished By: Jacob Barnes | Received By: | 1 DAY ☐ 2 DAY ☐ 3 DAY ☐ | ☐ Courier M.H | 11.8 |
| Date & Time : 20/12/2021 | Date & Time : | 5 DAY ☑ 10 DAY ☐ Other. | ☑ Hand Delivered | Report number: |
| Signature: | Signature: | | ☐ Postal | #852446 |
| | | | Courier Consignment # : 20,12,21 | |

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

# CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 3 of 8

| | | | |
|---|---|---|---|
| Company Name : GEOTEST SERVICES PTY LTD | Contact Name : DAVID SPASOJEVIC | Purchase Order : | COC Number : |
| Office Address : 18/24 GARLING ROAD | Project Manager : Jacob Barnes | PROJECT Number : P33603.2 | Eurofins \| mgt quote ID : |
| KINGS PARK, N.S.W. 2148 | Email for results : admin@geotestservices.com.au | PROJECT Name : 531 Cobbitty Road | Data output format: |
| PH: 9671 4443 FAX: 9671 4343 | | | |

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

| | Sample ID | Date | Matrix | ELECTRICAL CONDUCTIVITY | pH | SUITE B18 | C.E.C | E.S.P | HOLD |
|---|---|---|---|---|---|---|---|---|---|
| 33 | TP7 2.5 | 17/12/2021 | SOIL | | | | | | X |
| 34 | TP7 3.0 | 17/12/2021 | SOIL | X | | X | X | X | |
| 35 | TP8 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 36 | TP8 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 37 | TP8 1.0 | 17/12/2021 | SOIL | X | X | | | | |
| 38 | TP8 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 39 | TP9 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 40 | TP9 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 41 | TP9 1.0 | 17/12/2021 | SOIL | | | | | | X |
| 42 | TP9 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 43 | TP10 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 44 | TP10 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 45 | TP10 1.0 | 17/12/2021 | SOIL | | | | | | X |
| 46 | TP10 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 47 | TP11 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 48 | TP11 0.5 | 17/12/2021 | SOIL | X | X | | | | |

Some common holding times (with correct preservation).
For further information contact the lab

| Waters | | Soils | |
|---|---|---|---|
| BTEX, MAH, VOC | 14 days | BTEX, MAH, VOC | 14 days |
| TRH, PAH, Phenols, Pesticides | 7 days | TRH, PAH, Phenols, Pesticides | 14 days |
| Heavy Metals | 6 months | Heavy Metals | 6 months |
| Mercury, CrVI | 28 days | Mercury, CrVI | 28 days |
| Microbiological testing | 24 hours | Microbiological testing | 72 hours |
| BOD, Nitrate, Nitrite, Total N | 2 days | Anions | 28 days |
| Solids - TSS, TDS etc | 7 days | SPOCAS, pH Field and FOX, CrS | 24 hours |
| Ferrous iron | 7 days | ASLP, TCLP | 7 days |

Containers:

| | 500ML | 60ML METALS | 120ML MICROBIO | 1LA | 40mL vial | 125mL A | Jar | ZIP.BAG | Sample comments: |
|---|---|---|---|---|---|---|---|---|---|
| 33 | | | | | | | | X | |
| 34 | | | | | | | | X | |
| 35 | | | | | | | | X | |
| 36 | | | | | | | | X | |
| 37 | | | | | | | | X | |
| 38 | | | | | | | | X | |
| 39 | | | | | | | | X | |
| 40 | | | | | | | | X | |
| 41 | | | | | | | | X | |
| 42 | | | | | | | | X | |
| 43 | | | | | | | | X | |
| 44 | | | | | | | | X | |
| 45 | | | | | | | | X | |
| 46 | | | | | | | | X | |
| 47 | | | | | | | | X | |
| 48 | | | | | | | | X | |

| Relinquished By: Jacob Barnes | Received By: | Turn around time | Method Of Shipment | Temperature on arrival: |
|---|---|---|---|---|
| Date & Time : 20/12/2021 | Date & Time : | 1 DAY ☐ 2 DAY ☐ 3 DAY ☐ | ☐ Courier ☑ Hand Delivered ☐ Postal | 4.8 |
| Signature: | Signature: | 5 DAY ☑ 10 DAY ☐ Other: | Courier Consignment # : 20,12,21 | Report number: # 852446 |

M.H

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

# CHAIN OF CUSTODY RECORD

CLIENT DETAILS



| | | | |
|---|---|---|---|
| Company Name : GEOTEST SERVICES PTY LTD | Contact Name : DAVID SPASOJEVIC | Purchase Order : | COC Number : |
| Office Address : 18/24 GARLING ROAD | Project Manager : Jacob Barnes | PROJECT Number : P33603.2 | Eurofins \| mgt quote ID : |
| KINGS PARK, N.S.W. 2148 | Email for results : admin@geotestservices.com.au | PROJECT Name : 531 Cobbitty Road | Data output format: |
| PH: 9671 4443 FAX: 9671 4343 | | | |

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

| | Sample ID | Date | Matrix | ELECTRICAL CONDUCTIVITY | pH | SUITE B18 | C.E.C | E.S.P | HOLD |
|---|---|---|---|---|---|---|---|---|---|
| 49 | TP11 1.0 | 17/12/2021 | SOIL | | | | | | X |
| 50 | TP11 1.5 | 17/12/2021 | SOIL | | | | | | X |
| 51 | TP12 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 52 | TP12 0.5 | 17/12/2021 | SOIL | X | | X | X | X | |
| 53 | TP12 1.0 | 17/12/2021 | SOIL | X | X | | | | |
| 54 | TP12 1.5 | 17/12/2021 | SOIL | X | | X | | | |
| 55 | TP13 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 56 | TP13 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 57 | TP13 1.0 | 17/12/2021 | SOIL | X | X | | | | |
| 58 | TP13 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 59 | TP14 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 60 | TP14 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 61 | TP14 1.0 | 17/12/2021 | SOIL | | | | | | X |
| 62 | TP14 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 63 | TP15 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 64 | TP15 0.5 | 17/12/2021 | SOIL | X | | X | X | X | |

Some common holding times (with correct preservation).
For further information contact the lab

| Waters | | Soils | |
|---|---|---|---|
| BTEX, MAH, VOC | 14 days | BTEX, MAH, VOC | 14 days |
| TRH, PAH, Phenols, Pesticides | 7 days | TRH, PAH, Phenols, Pesticides | 14 days |
| Heavy Metals | 6 months | Heavy Metals | 6 months |
| Mercury, CrVI | 28 days | Mercury, CrVI | 28 days |
| Microbiological testing | 24 hours | Microbiological testing | 72 hours |
| BOD, Nitrate, Nitrite, Total N | 2 days | Anions | 28 days |
| Solids - TSS, TDS etc | 7 days | SPOCAS, pH Field and FOX, CrS | 24 hours |
| Ferrous iron | 7 days | ASLP, TCLP | 7 days |

Containers:

| | 500ML | 60ML METALS | 120ML MICROBIO | 1LA | 40mL vial | 125mL A | Jar | ZIP BAG | Sample comments: |
|---|---|---|---|---|---|---|---|---|---|
| 49 | | | | | | | | X | |
| 50 | | | | | | | | X | |
| 51 | | | | | | | | X | |
| 52 | | | | | | | | X | |
| 53 | | | | | | | | X | |
| 54 | | | | | | | | X | |
| 55 | | | | | | | | X | |
| 56 | | | | | | | | X | |
| 57 | | | | | | | | X | |
| 58 | | | | | | | | X | |
| 59 | | | | | | | | X | |
| 60 | | | | | | | | X | |
| 61 | | | | | | | | X | |
| 62 | | | | | | | | X | |
| 63 | | | | | | | | X | |
| 64 | | | | | | | | X | |

| Laboratory Staff | | Turn around time | Method Of Shipment | Temperature on arrival: |
|---|---|---|---|---|
| Relinquished By: Jacob Barnes | Received By: | 1 DAY ☐ 2 DAY ☐ 3 DAY ☐ | ☐ Courier | 11.8 |
| Date & Time : 20/12/2021 | Date & Time : | 5 DAY ☑ 10 DAY ☐ Other: | ☑ Hand Delivered M.H | Report number: |
| Signature: | Signature: | | ☐ Postal | |
| | | | Courier Consignment # : 20/12/21 | # 852446 |

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

# CHAIN OF CUSTODY RECORD

CLIENT DETAILS



| | | | |
|---|---|---|---|
| Company Name : GEOTEST SERVICES PTY LTD | Contact Name : DAVID SPASOJEVIC | Purchase Order : | COC Number : |
| Office Address : 18/24 GARLING ROAD | Project Manager : Jacob Barnes | PROJECT Number : P33603.2 | Eurofins \| mgt quote ID : |
| KINGS PARK, N.S.W. 2148 | Email for results : admin@geotestservices.com.au | PROJECT Name : 531 Cobbitty Road | Data output format: |
| PH: 9671 4443 FAX: 9671 4343 | | | |

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Some common holding times (with correct preservation). For further information contact the lab

| Waters | | Soils | |
|---|---|---|---|
| BTEX, MAH, VOC | 14 days | BTEX, MAH, VOC | 14 days |
| TRH, PAH, Phenols, Pesticides | 7 days | TRH, PAH, Phenols, Pesticides | 14 days |
| Heavy Metals | 6 months | Heavy Metals | 6 months |
| Mercury, CrVI | 28 days | Mercury, CrVI | 28 days |
| Microbiological testing | 24 hours | Microbiological testing | 72 hours |
| BOD, Nitrate, Nitrite, Total N | 2 days | Anions | 28 days |
| Solids - TSS, TDS etc | 7 days | SPOCAS, pH Field and FOX, CrS | 24 hours |
| Ferrous iron | 7 days | ASLP, TCLP | 7 days |

Analytes

| | Sample ID | Date | Matrix | ELECTRICAL CONDUCTIVITY | pH | SUITE B18 | C.E.C | E.S.P | HOLD | Containers: 500ML | 60ML METALS | 120ML MICROBIO | 1LA | 40mL vial | 125mL A | Jar | ZIP.BAG | Sample comments: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 65 | TP15 1.0 | 17/12/2021 | SOIL | X | X | | | | | | | | | | | | X | |
| 66 | TP15 1.5 | 17/12/2021 | SOIL | X | | X | | | | | | | | | | | X | |
| 67 | TP15 2.0 | 17/12/2021 | SOIL | X | | X | | | | | | | | | | | X | |
| 68 | TP15 2.5 | 17/12/2021 | SOIL | X | | X | | | | | | | | | | | X | |
| 69 | TP15 3.0 | 17/12/2021 | SOIL | X | | X | X | X | | | | | | | | | X | |
| 70 | TP16 0.2 | 17/12/2021 | SOIL | X | X | | | | | | | | | | | | X | |
| 71 | TP16 0.5 | 17/12/2021 | SOIL | | | | | | X | | | | | | | | X | |
| 72 | TP16 1.0 | 17/12/2021 | SOIL | X | X | | | | | | | | | | | | X | |
| 73 | TP16 1.5 | 17/12/2021 | SOIL | X | X | | | | | | | | | | | | X | |
| 74 | TP17 0.2 | 17/12/2021 | SOIL | X | X | | | | | | | | | | | | X | |
| 75 | TP17 0.5 | 17/12/2021 | SOIL | X | X | | | | | | | | | | | | X | |
| 76 | TP17 1.0 | 17/12/2021 | SOIL | | | | | | X | | | | | | | | X | |
| 77 | TP17 1.5 | 17/12/2021 | SOIL | X | X | | | | | | | | | | | | X | |
| 78 | TP18 0.2 | 17/12/2021 | SOIL | X | X | | | | | | | | | | | | X | |
| 79 | TP18 0.5 | 17/12/2021 | SOIL | X | | X | X | X | | | | | | | | | X | |
| 80 | TP18 1.0 | 17/12/2021 | SOIL | | | | | | X | | | | | | | | X | |

Laboratory Staff

| | |
|---|---|
| Relinquished By: Jacob Barnes | Received By: |
| Date & Time : 20/12/2021 | Date & Time : |
| Signature: | Signature: |

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☑ Hand Delivered
☐ Postal
Courier Consignment # :

M·H
20,12,21

Temperature on arrival: 11·8

Report number: # 852446

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

# CHAIN OF CUSTODY RECORD



CLIENT DETAILS

Company Name : GEOTEST SERVICES PTY LTD
Office Address : 18/24 GARLING ROAD
KINGS PARK, N.S.W. 2148
PH: 9671 4443 FAX: 9671 4343

Contact Name : DAVID SPASOJEVIC
Project Manager : Jacob Barnes
Email for results : admin@geotestservices.com.au

Purchase Order :
PROJECT Number : P33603.2
PROJECT Name : 531 Cobbitty Road

COC Number :
Eurofins | mgt quote ID :
Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

| | Sample ID | Date | Matrix | ELECTRICAL CONDUCTIVITY | pH | SUITE B18 | C.E.C | E.S.P | HOLD |
|---|---|---|---|---|---|---|---|---|---|
| 81 | TP18 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 82 | TP18 2.0 | 17/12/2021 | SOIL | X | | X | X | X | |
| 83 | TP18 2.5 | 17/12/2021 | SOIL | | | | | | X |
| 84 | TP18 3.0 | 17/12/2021 | SOIL | X | | X | X | X | |
| 85 | TP19 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 86 | TP19 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 87 | TP19 1.0 | 17/12/2021 | SOIL | X | X | | | | |
| 88 | TP19 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 89 | TP20 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 90 | TP20 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 91 | TP20 1.0 | 17/12/2021 | SOIL | X | X | | | | |
| 92 | TP20 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 93 | TP21 0.2 | 17/12/2021 | SOIL | X | | X | | | |
| 94 | TP21 0.5 | 17/12/2021 | SOIL | X | | X | X | X | |
| 95 | TP21 1.0 | 17/12/2021 | SOIL | X | | X | | | |
| 96 | TP21 1.5 | 17/12/2021 | SOIL | X | X | | | | |

Some common holding times (with correct preservation).
For further information contact the lab

| Waters | | Soils | |
|---|---|---|---|
| BTEX, MAH, VOC | 14 days | BTEX, MAH, VOC | 14 days |
| TRH, PAH, Phenols, Pesticides | 7 days | TRH, PAH, Phenols, Pesticides | 14 days |
| Heavy Metals | 6 months | Heavy Metals | 6 months |
| Mercury, CrVI | 28 days | Mercury, CrVI | 28 days |
| Microbiological testing | 24 hours | Microbiological testing | 72 hours |
| BOD, Nitrate, Nitrite, Total N | 2 days | Anions | 28 days |
| Solids - TSS, TDS etc | 7 days | SPOCAS, pH Field and FOX, CrS | 24 hours |
| Ferrous iron | 7 days | ASLP, TCLP | 7 days |

Containers:

| | 500ML | 60ML METALS | 120ML MICROBIO | 1LA | 40mL vial | 125mL A | Jar | ZIP.BAG | Sample comments: |
|---|---|---|---|---|---|---|---|---|---|
| 81 | | | | | | | | X | |
| 82 | | | | | | | | X | |
| 83 | | | | | | | | X | |
| 84 | | | | | | | | X | |
| 85 | | | | | | | | X | |
| 86 | | | | | | | | X | |
| 87 | | | | | | | | X | |
| 88 | | | | | | | | X | |
| 89 | | | | | | | | X | |
| 90 | | | | | | | | X | |
| 91 | | | | | | | | X | |
| 92 | | | | | | | | X | |
| 93 | | | | | | | | X | |
| 94 | | | | | | | | X | |
| 95 | | | | | | | | X | |
| 96 | | | | | | | | X | |

Laboratory Staff

Relinquished By: Jacob Barnes
Date & Time : 20/12/2021
Signature:

Received By:
Date & Time :
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☑ Hand Delivered
☐ Postal
Courier Consignment # :

M·H
20, 12, 21

Temperature on arrival:
1 - 8

Report number:
# 872446

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

# CHAIN OF CUSTODY RECORD



CLIENT DETAILS

Company Name : GEOTEST SERVICES PTY LTD
Office Address : 18/24 GARLING ROAD
KINGS PARK, N.S.W. 2148
PH: 9671 4443 FAX: 9671 4343

Contact Name : DAVID SPASOJEVIC
Project Manager : Jacob Barnes
Email for results : admin@geotestservices.com.au

Purchase Order :
PROJECT Number : P33603.2
PROJECT Name : 531 Cobbitty Road

COC Number :
Eurofins | mgt quote ID :
Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

| | Sample ID | Date | Matrix | ELECTRICAL CONDUCTIVITY | pH | SUITE B18 | C.E.C | E.S.P | HOLD |
|---|---|---|---|---|---|---|---|---|---|
| 97 | TP21 2.0 | 17/12/2021 | SOIL | X | X | | | | |
| 98 | TP21 2.5 | 17/12/2021 | SOIL | X | X | | | | |
| 99 | TP21 3.0 | 17/12/2021 | SOIL | X | | X | X | X | |
| 100 | TP22 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 101 | TP22 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 102 | TP22 1.0 | 17/12/2021 | SOIL | | | | | | X |
| 103 | TP22 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 104 | TP23 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 105 | TP23 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 106 | TP23 1.0 | 17/12/2021 | SOIL | X | X | | | | |
| 107 | TP23 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 108 | TP24 0.2 | 17/12/2021 | SOIL | X | X | | | | |
| 109 | TP24 0.5 | 17/12/2021 | SOIL | X | X | | | | |
| 110 | TP24 1.0 | 17/12/2021 | SOIL | | | | | | X |
| 111 | TP24 1.5 | 17/12/2021 | SOIL | X | X | | | | |
| 112 | TP25 0.2 | 17/12/2021 | SOIL | X | X | | | | |

Some common holding times (with correct preservation).
For further information contact the lab

| Waters | | Soils | |
|---|---|---|---|
| BTEX, MAH, VOC | 14 days | BTEX, MAH, VOC | 14 days |
| TRH, PAH, Phenols, Pesticides | 7 days | TRH, PAH, Phenols, Pesticides | 14 days |
| Heavy Metals | 6 months | Heavy Metals | 6 months |
| Mercury, CrVI | 28 days | Mercury, CrVI | 28 days |
| Microbiological testing | 24 hours | Microbiological testing | 72 hours |
| BOD, Nitrate, Nitrite, Total N | 2 days | Anions | 28 days |
| Solids - TSS, TDS etc | 7 days | SPOCAS, pH Field and FOX, CrS | 24 hours |
| Ferrous iron | 7 days | ASLP, TCLP | 7 days |

Containers:

| 500ML | 60ML METALS | 120ML MICROBIO | 1LA | 40mL vial | 125mL A | Jar | ZIP.BAG |
|---|---|---|---|---|---|---|---|
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |

Sample comments:

Laboratory Staff

Relinquished By: Jacob Barnes
Date & Time : 20/12/2021
Signature:

Received By:
Date & Time :
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☑ Hand Delivered
☐ Postal
Courier Consignment # :

M-H
20/12/21

Temperature on arrival: 4-8

Report number: # 852446