morrowgeo.com.au

Site Hydrogeology Report
142-160 Oxford Street, 13 Gipps Street & 6 Shadforth Street, Paddington (NSW)

Reference: P3569_04

Date: 26 February 2026

Morrow Geotechnics Pty Ltd
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

ABN 42 605 892 126

Document Control

Document details:

Document Number	P3569_04
Document Title	Site Hydrogeology Report
Site Address	142-160 Oxford Street, 13 Gipps Street & 6 Shadforth Street, Paddington (NSW)
Report Prepared for	TM No.8 Pty Ltd

Document status, review and details:

Rev	Prepared	Reviewed	Details	Date
Rev0	AB	AM		26/02/2026

Distribution of copies

Revision	Electronic	Paper	Issued to
Rev0	1	–	TM No.8 Pty Ltd

	Full Name & Title	Signature
Author	Andrew Butel Hydrogeologist/Senior Engineering Geologist	
Reviewer	Alan Morrow Principal Geotechnical Engineer	

Table of Contents

1. Introduction

1.1 Overview

Morrow Geotechnics Pty Ltd has carried out a Groundwater Study and prepared a Site Hydrogeology Report for the proposed development at 142-160 Oxford Street, 13 Gipps Street & 6 Shadforth Street, Paddington (the site).

The following geotechnical report has been prepared for the site:

- Morrow Geotechnics Pty Ltd, Geotechnical Investigation Report, *142-160 Oxford Street, 13 Gipps Street & 6 Shadforth Street, Paddington NSW,* referenced P3569_02 Rev1, and dated 15 December 2025 (MG 2025).

The geotechnical report presents the results of site investigations for the proposed development and geotechnical recommendations for design and construction.

1.2 Proposed Development

Architectural plans for the proposed development have been prepared by Smart Design Studio for project 2510, 160 Oxford Street, Paddington and dated 18 December 2025. Morrow Geotechnics understands that the proposed development will involve construction of a seven storey mixed use multi-dwelling structure over four levels of basement carpark requiring excavation of approximately 15.0 metres below ground level (mBGL) to RL 39.98 mAHD.

1.3 Proposed Dewatering Schedule

Given the relatively low permeability of the sandstone profile encountered in the geotechnical investigation it is proposed to construct the basement as a drained soldier pile wall. Dewatering through spear points and pumping is not proposed for the construction period, rather any groundwater seepage will be allowed to drain through strip drainage installed behind shotcrete panels and collected by sump pits within the basement.

The excavation program for the proposed basement is expected to take up to 8 months. Temporary construction dewatering is expected to occur for construction seepage inflows during this 8 month period.

1.4 Objectives

The objective of this Site Hydrogeology Report is to provide results on the presence of water at the site and comment on whether there is an aquifer present at the site in accordance with the definition of aquifer as laid out in the NSW DPI Office of Water Aquifer Interference Policy. Section 1.2 of the policy defines an aquifer as

> "the term 'aquifer' is commonly understood to mean a groundwater system that is sufficiently permeable to allow water to move within it, and which can yield productive volumes of groundwater"

Further, this report provides analysis of the permeability of soils encountered within boreholes at the site and geotechnical advice and recommendations on the management of groundwater in the design and construction of the proposed development.

2. Geological Model

2.1 Published Geological Mapping

Information on regional sub-surface conditions, referenced from the Department of Mineral Resources Geological Map Sydney 1:100,000 (Geological Series Sheet 9130) indicate that the site is located in (Rh) Hawkesbury Sandstone, which is typically comprised of medium to coarse-grained quartz sandstone, with very minor shale and laminite lenses. Regional Geology is shown on **Drawing 2** attached to this report.

2.2 Soil Landscapes

The Soil Conservation Service of NSW Sydney 1:100,000 Soil Landscapes Series Sheet 9130 (2nd Edition) indicates that the erosional landscape at the site likely comprises the Gymea Landscape. This landscape typically includes undulating rolling rises and low hills on Hawkesbury Sandstone. Soils are generally shallow to moderately deep (0.3 – 1 m) yellow earths and earthy sands. These soils are noted to present localized steep slopes, high soil erosion hazard, rock outcrops and shallow highly permeable soil. Soil Landscapes are shown on **Drawing 3** attached to this report.

2.3 Site Description

At the time of the investigation the site was occupied by seven residential properties.

Table 1 Site Description

Address	Lot/DP	Area	Comments
142 Oxford Street	**4/DP263685**	247.8 m²	Occupied by a two storey brick semi attached residence. Vegetation is sparse with small to large sized trees.
144 Oxford Street	**3/DP263685**	232.5 m²	Occupied by a two storey brick semi attached residence. Vegetation is sparse with small to large sized trees.
146 Oxford Street	**2/DP263685**	248.6 m²	Occupied by a two storey brick semi attached residence. Vegetation is sparse with small to large sized trees.
148 Oxford Street	**1/DP263685**	266.5 m²	Occupied by a two storey brick semi attached residence. Vegetation is sparse with small to large sized trees.
160 Oxford Street	**SP 13018**	8891 m²	Occupied by a three storey brick & rendered residence. Vegetation is sparse with small to large sized trees.
13 Gipps Street	**5/DP263685**	149.8 m²	Occupied by a two storey semi brick cottage. Vegetation is sparse with small sized trees.
6 Shadforth Street	**1/DP70235**	138.1 m²	Occupied by a two storey rendered residence. Vegetation is sparse with small sized trees.

The site covers an area approximately 2172.4 m². The site topography slopes gently towards the north west, with elevations ranging from approximately RL 54.3 mAHD on the corner of Oxford and Shadforth Street to RL 50.0 mAHD on the northern boundary of 13 Gipps Street. The site is bordered by Oxford Street and the Victoria Barracks to the south. The site is bounded by commercial and residential properties to the east, west and north.

2.4 Stratigraphic Model

Eight boreholes were drilled in total (BH101 to BH104 & BH201 to BH204). BH101 to BH104 were drilled using a hand auger to depths of between 0.4 to 1.4 mBGL (meters below ground level). BH201 to BH204 were drilled using a Man-Portable drill rig using NMLC coring techniques to depths between 15.15 and 25.53 mBGL. Borehole locations are shown on **Drawing 1** attached to this report.

The stratigraphy at the site is characterised by fill overlying residual soil and sandstone bedrock. A summary of the subsurface conditions across the site, interpreted from the investigation results, is presented in **Table 2** & **Table 3**.

Table 2 Summary of Inferred Subsurface Conditions

Unit	Material	Generalised Description
1	**Fill/Topsoil**	Silty SAND or Gravelly SAND to Gravelly Sandy CLAY and GRAVEL medium plasticity, very loose to loose then medium dense, fine to medium then coarse-grained, poorly graded sand, fine to medium then coarse sized gravel, angular, with construction waste concrete, brick pieces, rebar, moist to dry. Unit 1 is inferred to be uncontrolled and poorly compacted.
2	**Residual Soil**	Sandy CLAY to Clayey SAND: stiff to medium dense low plasticity, well graded, fine-grained sand, medium plasticity clay, moist to wet.
3	**Class V Sandstone**	Extremely to highly weathered Sandstone, very low to low strength, fine grained, with sandy clay seams and ironstone bands.
4	**Class IV Sandstone**	Highly to moderately weathered Sandstone, low strength with ironstone bands, 1° to 10° laminations at 1-10 mm spacing.
5	**Class III Sandstone**	Slightly weathered to fresh Sandstone, medium to high strength, fine grained with bedding partings inclined to 10°, carbonaceous laminations, and minor Shale bands and intrusions.
6	**Class II Sandstone**	Fresh Sandstone, medium to high strength, fine grained. Generally massive with occasional bedding partings and carbonaceous laminations.

Table 3 Encountered Subsurface Conditions

Borehole ID	Approx. Depth Range of Unit [1] mBGL (RL mAHD)							
	Unit 1 Fill	Unit 2 Residual Soil	Unit 3 Class V Sandstone	Unit 4 Class IV Sandstone	Unit 5 Class III Sandstone	Unit 6 Class II Sandstone	Unit 5[2] Class III Sandstone	Unit 6 Class II Sandstone
BH101	0.0 to 0.4 (53.4 to 53.0)	-	-	-	-	-	-	-
BH102	0.0 to 0.4 (52.6 to 52.2)	-	-	-	-	-	-	-
BH103	0.0 to 1.4 (55.3 to 53.9)	-	-	-	-	-	-	-
BH104	0.0 to 0.9 (54.4 to 54.5)	-	-	-	-	-	-	-
BH201	0.0 to 2.6 (52.67 to 50.07)	-	-	2.6 to 4.75 (49.97 to 47.92)	4.75 to 6.0 (47.92 to 46.67)	6.0 to 10.15 (46.67 to 42.52)	10.15 to 12.00 (42.52 to 40.67)	12.00 to 15.15 (40.67 to 37.52)
BH202	0.0 to 1.3 (52.74 to 51.44)	1.3 to 2.3 (51.44 to 50.44)	2.3 to 2.7 (50.44 to 50.04)	2.7 to 4.35 (50.04 to 48.39)	4.35 to 5.75 (48.39 to 46.99)	5.75 to 13.62 (46.99 to 39.12)	13.62 to 15.17 (39.12 to 37.57)	-
BH203	0.0 to 1.1 (52.52 to 51.42)	-	-	1.1 to 5.0 (51.42 to 47.52)	-	5.0 to 25.53 (47.52 to 26.99)	-	-
BH204	0.0 to 1.8 (51.55 to 49.75)	-	-	1.8 to 3.9 (49.75 to 47.65)	3.9 to 5.0 (47.65 to 46.55)	5.0 to 15.18 (46.55 to 36.37)	-	-

Notes:
1 Depth ranges shown are based on material observed within test locations and will vary across the site.
2 Unit 5 Sandstone material was present below Unit 6 Sandstone material in BH201 and BH202.

2.5 Acid Sulfate Soils

According to the Woollahra Council Local Environmental Plan 2014 the site is located in a Class 5 area of Acid Sulfate Soils (see location in **Drawing 4** attached to this report). Class 5 areas are within 500 m of areas mapped as Class 4 to 1, however Acid Sulphate Soils are not expected within Class 5 Areas.

2.6 Groundwater Dependent Ecosystems

Groundwater Dependent Ecosystems (GDEs) are ecosystems that rely on groundwater to fulfill all or part of their water needs, ensuring the survival of their plant and animal communities, as well as their ecological processes and services (NSW DPE 2023). The reliance of GDEs on groundwater can be seasonal, continual, or episodic (Howe et al. 2007). These ecosystems vary widely in size, ranging from just a few meters to several square kilometres. GDEs can be categorized into three main types (Eamus et al. 2006; Richardson et al. 2011):

- **Groundwater Dependent Vegetation (Terrestrial GDEs)**: These ecosystems depend on the subsurface presence of groundwater, often accessed through the capillary fringe or

vadose zone (the unsaturated subsurface area just above the water table) (Naumburg et al. 2005; Eamus et al. 2006a). Within these communities, plant species may exhibit varying degrees of groundwater dependency, from complete reliance on groundwater to partial or infrequent dependency (Hatton and Evans 1998; Zencich et al. 2002; Eamus et al. 2006; Froend and Drake 2006).

- **Aquatic GDEs**: These environments occur where groundwater surfaces, such as in rivers, wetlands, and springs. Aquatic GDEs are considered dependent on groundwater if groundwater is essential to the biota and ecological processes at any stage of the ecosystem's life span (Howe et al. 2007).
- **Subterranean GDEs**: These ecosystems exist within the saturated zones of aquifers, including water-filled spaces in various geological matrices such as karst (caves), fractured rock, and alluvial systems. They also encompass hyporheic ecosystems, which occur within the sediments of surface waters, acting as a transitional zone between surface and groundwater ecosystems (Hose et al. 2022).

GDEs include a wide range of environments like aquifers, lakes, streams, springs, cave systems, swamps, and wetlands. They rely on groundwater to meet their water requirements, which is crucial for maintaining their flora and fauna. The level of groundwater dependence and the nature of this reliance affect how GDEs respond to changes in groundwater quality and quantity. Groundwater extraction can negatively impact these ecosystems.

According to New South Wales Government mapping (see location in **Figure 1** below), No GDEs are located in the immediate vicinity of the site.

Figure 1: Groundwater Dependent Ecosystems

2.7 Groundwater Monitoring Bores

According to the Bureau of Meteorology (BOM) Australian Groundwater Explorer no water supply bores are located with 500m of the site, bore locations are shown on **Figure 2** below.

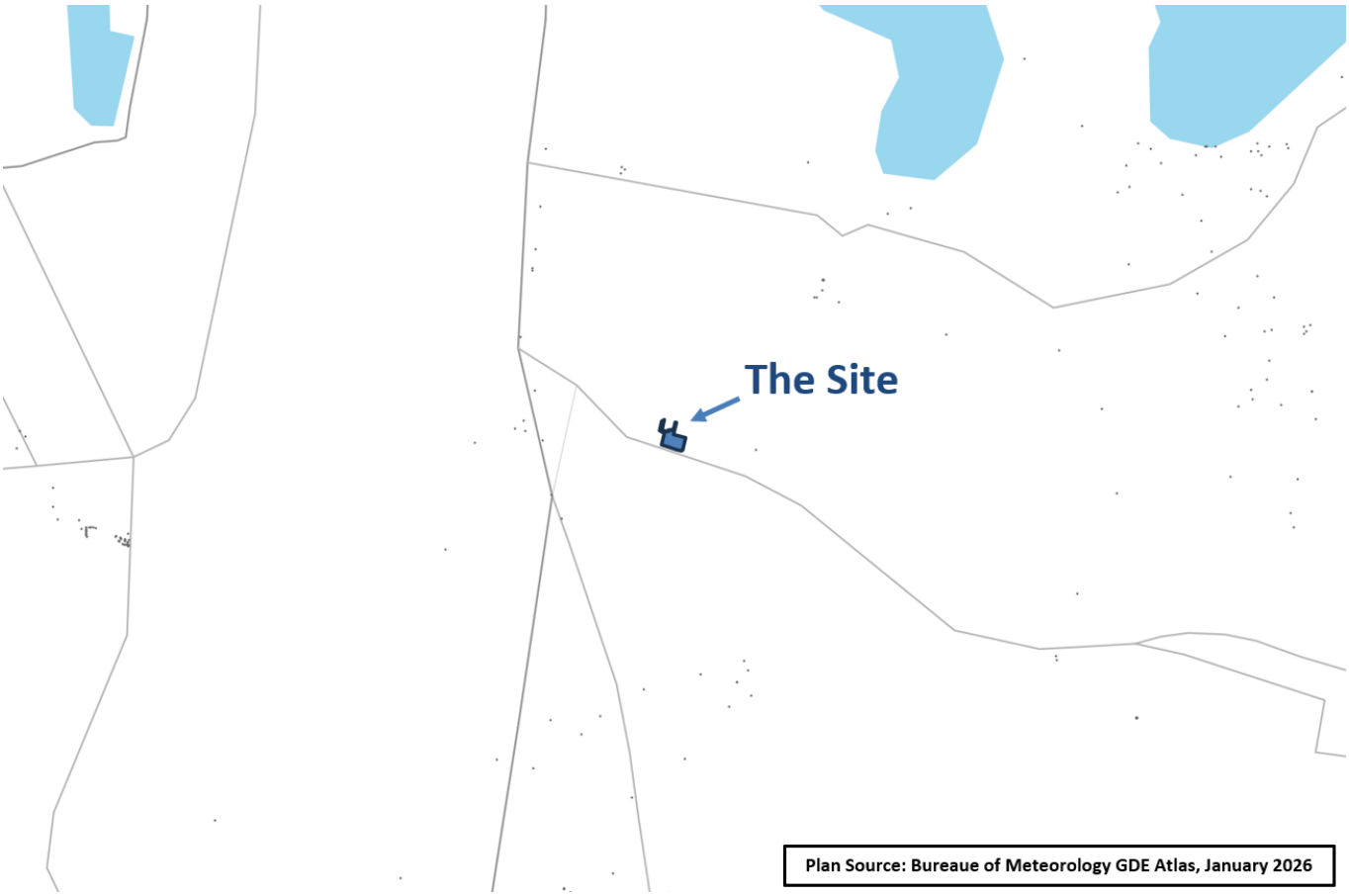


Figure 2: Water Supply Works Monitoring Bores

3. Hydrogeological Model

3.1 Groundwater Observations

Standpipe piezometer wells were installed within the boreholes (BH202, BH203 & BH204) as part of the geotechnical investigations. Monitoring well construction details are found in **Table 4** below. Before the installation of the piezometers, drill cuttings and water in the boreholes were flushed out. The monitoring wells were constructed using 50 mm diameter screw threaded PVC casing, sections of which were machine slotted. The annulus between the casing and boreholes was backfilled using 2 mm filter gravel pack to above the top of the screen. A bentonite plug with a minimum thickness of 0.5 m was then installed above the gravel pack, the remaining annulus was backfilled with drill cuttings. The wells were each finished with a cement plug and a gatic cover.

Groundwater levels within the three piezometer wells have been monitored by Morrow Geotechnics between 24 October 2025 and 23 February 2026.

Table 4 Piezometer Details

Piezometer	BH202	BH203	BH204
Top of Piezometer approx. RL (mAHD)	52.74	52.55	51.55
Piezometer Depth (m)	15.0	25.5	15.1
Bentonite Plug Depth (mBGL)	2.0 to 3.0	4.7 to 5.5	0.3 to 2.0
Screen Depth (mBGL)	3.0 to 15.0	6.0 to 25.5	3.1 to 15.1
Base of Piezometer RL (mAHD)	37.74	27.05	36.45

Table 5 Water Levels from Manual Readings

Monitoring Date	Piezometer Groundwater Level mBGL (RL mAHD)		
	BH202	BH203	BH204
10/11/2025	4.10 (48.64 mAHD)	6.43 (46.12 mAHD)	4.80 (46.75 mAHD
30/01/2026	4.02 (48.72 mAHD)	6.57 (45.98 mAHD)	4.61 (46.94 mAHD)
23/02/2026	3.90 (48.84 mAHD)	6.36 (46.19 mAHD)	4.90 (46.65 mAHD

Automatic dataloggers were installed within BH202, BH203 and BH204 in order to provide long term groundwater measurements. Dataloggers were installed between 24 October 2025 and 23 February 2026. The data loggers were set to measure groundwater levels at one hour intervals. Graphs of water level measurements taken by the automatic dataloggers are displayed in **Figure 3** to **Figure 6** below. Daily rainfall totals taken from Bureau of Meteorology Randwick (Randwick Street) {station 66052} for the monitoring period are displayed alongside water level measurements. Rising head permeability testing was carried out on 10 November 2025, 15 January 2026 & 30 January 2026 this accounts for the gaps in groundwater levels.

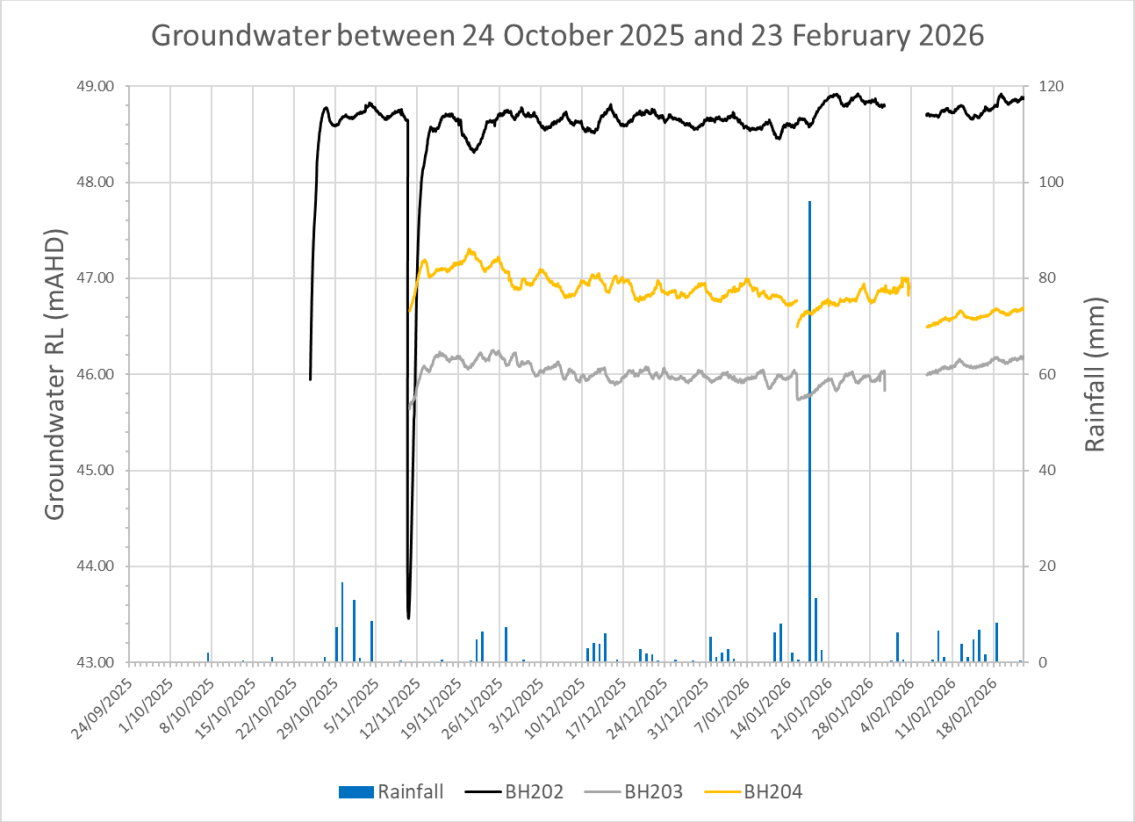


Figure 3: Data Logger Measurements and Daily Rainfall

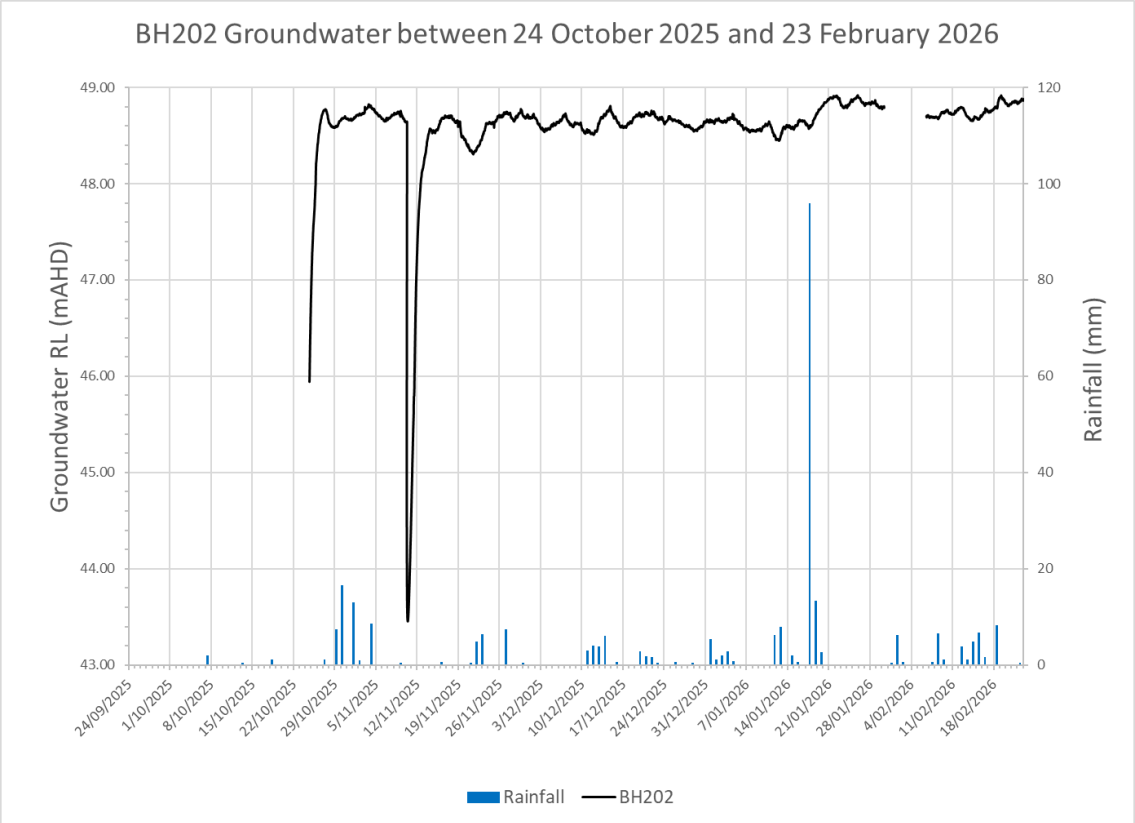


Figure 4: BH202 Data Logger Measurements and Daily Rainfall

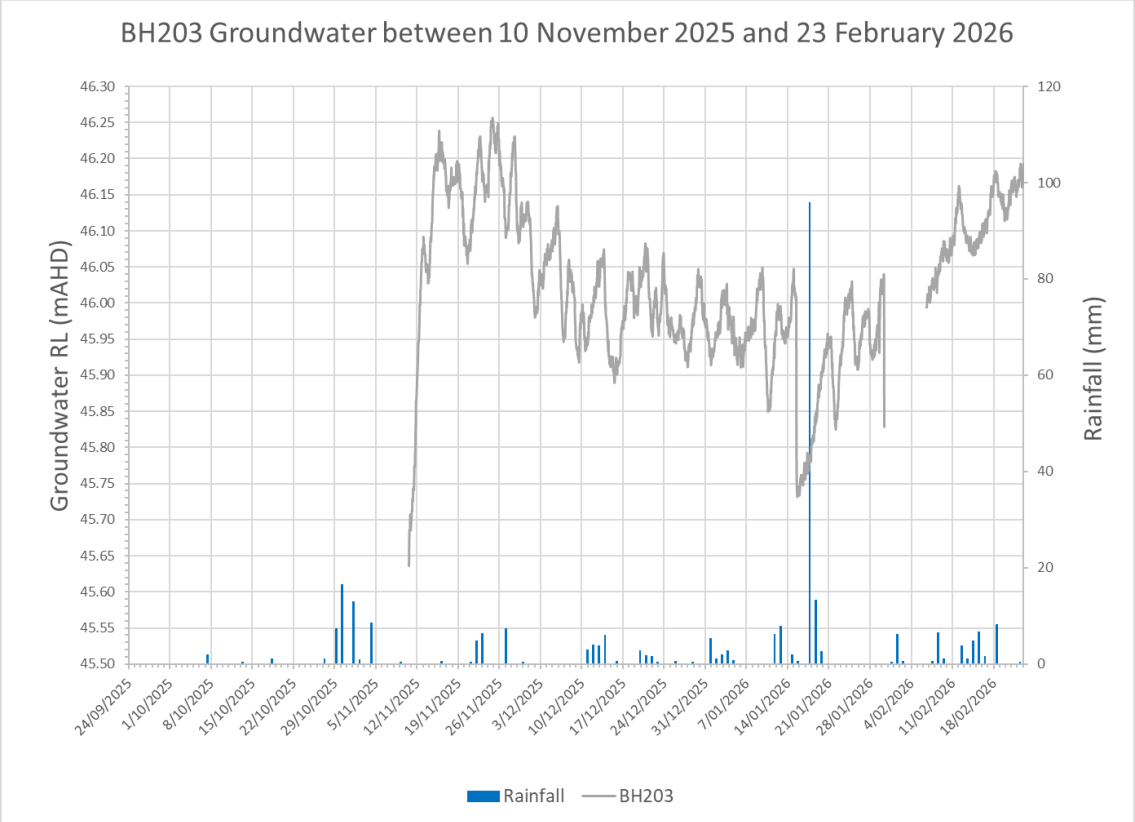


Figure 5: BH203 Data Logger Measurements and Daily Rainfall

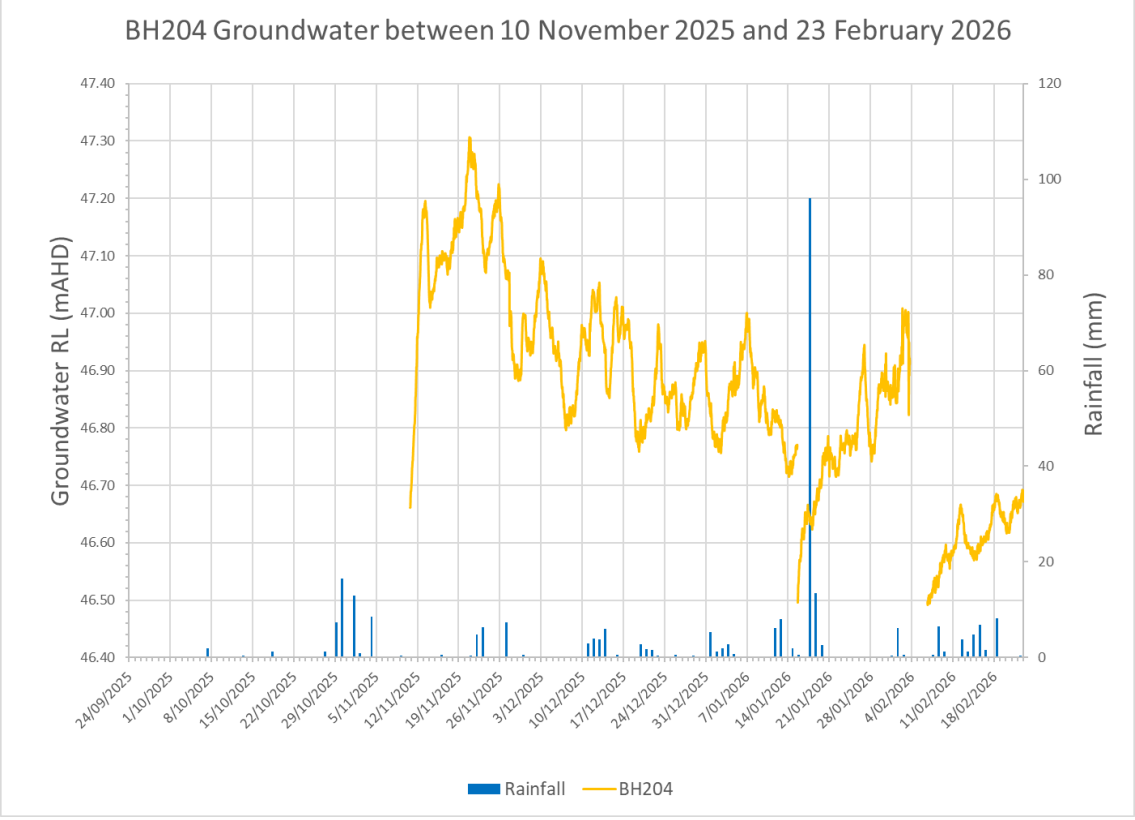


Figure 6: BH204 Data Logger Measurements and Daily Rainfall

A summary of the groundwater observations within the three wells is provided below:

Table 6 Groundwater Observation Summary

Monitoring Date	Piezometer Groundwater Level mBGL (RL mAHD)		
	BH202	BH203	BH204
Maximum Water Level	3.81 mBGL (48.92 mAHD)	6.29 mBGL (46.25 mAHD)	4.24 mBGL (47.30 mAHD)
Minimum Water Level	4.43 mBGL (48.30 mAHD)	6.91 mBGL (45.63 mAHD)	5.05 mBGL (46.49 mAHD)
Average Water Level	4.07 mBGL (48.66 mAHD)	6.52 mBGL (46.02 mAHD)	4.69 mBGL (46.85 mAHD)
Median Water Level	4.07 mBGL (48.66 mAHD)	6.53 mBGL (46.01 mAHD)	4.69 mBGL (46.85 mAHD)

Average groundwater levels are recorded within the following units;

- BH202 Unit 4 – Class IV Sandstone;
- BH203 Unit 6 – Class II Sandstone; and
- BH204 Unit 5 – Class III Sandstone.

Average groundwater levels across the site range from RL 46.02 to 48.66 mAHD. Water levels within the monitoring wells were slightly responsive to rainfall events during the monitoring period. This is inferred to result from surface water infiltration following rainfall recharging the groundwater.

Based on the geotechnical investigation and groundwater monitoring it is possible to conclude that the hydrogeological conditions at the site are of a phreatic water table within a generally low permeability rock mass. Groundwater levels are dipping towards the south.

On the basis of ongoing groundwater monitoring it is recommended that a design groundwater level for site is taken at the following;

- South (BH203 & BH204) – 47.80 mAHD
- North (BH202) – 49.40 mAHD

3.2 Hydraulic Conductivity Testing

Permeability tests were carried out on BH202, BH203 & BH204 to give an indication of in-situ permeability of the material at the site. Permeability values were calculated on the basis of the testing in accordance with the formulas provided in British Standard BS5930-1999 Code of Practice for Site Investigations, Section 21.4.6. Calculation sheets for permeability testing are provided as an attachment to this letter as **Appendix C**. Permeability tests were repeated three times to ensure reliability of results.

Permeability values which were adopted from the testing for the assessment of groundwater seepage volumes are shown in **Table 7** below. Rising head tests within BH204 showed a two-stage recharge, with initial rapid recharge inferred to be driven by an iron-stained defect at

approximately 9.1 mBGL. Once the borehole recharged to the phreatic level of water trapped within the open defect, the recharge rate slowed significantly to values which are consistent with generalised rock mass permeability observed in the other boreholes. The results have been interpreted for the defect and for the rock mass in BH102, with both results presented below.

Table 7 Borehole Permeability Values

Borehole	Permeability Based on In-situ Measurement	
	(m/s)	(m/day)
BH202 Test 1	9.70×10^{-9}	8.38×10^{-4}
BH202 Test 2	5.28×10^{-9}	4.56×10^{-4}
BH202 Test 3	4.14×10^{-9}	3.58×10^{-4}
BH203 Test 1	6.19×10^{-7}	5.34×10^{-2}
BH203 Test 2	4.70×10^{-7}	4.06×10^{-2}
BH203 Test 3	6.64×10^{-7}	5.73×10^{-2}
BH204 Test 1	8.59×10^{-10}	8.64×10^{-5}
BH204 Test 2	8.23×10^{-9}	7.11×10^{-4}
BH204 Test 3	1.92×10^{-9}	1.66×10^{-4}
BH204 Test 4	1.21×10^{-9}	1.05×10^{-4}

The following design permeabilities have been adopted for the site;

- Unit 1 Fill/Topsoil – N/A
- Unit 2 Residual Soil – N/A
- Unit 3 Class V Sandstone –1.78×10^{-7}
- Unit 4 Class IV Sandstone – 1.78×10^{-7}
- Unit 5 Class III Sandstone – 1.78×10^{-7}
- Unit 6 Class III Sandstone – 1.78×10^{-7}

The permeability of 1.54×10^{-8} was calculated by averaging the results of the rising head tests excluding the BH204 defect permeability.

3.3 Local Groundwater Regime

Based on the geotechnical investigation and groundwater monitoring it is possible to conclude that the hydrogeological conditions at the site are of a phreatic water table within a generally low permeability rock mass. Groundwater levels are dipping towards the south.

On the basis of ongoing groundwater monitoring it is recommended that a design groundwater level for site is taken at the following;

- South (BH203 & BH204) – 47.80 mAHD
- North (BH202) – 49.40 mAHD

The permeability levels represent a strata which is moderately permeable and will yield low volumes of seepage water. In accordance with the NSW DPI Office of Water Aquifer Interference Policy the conditions at site represent an aquifer which can yield productive volumes of groundwater.

3.4 Water Quality Observations

A sample of the water to be discharged was taken on 11 September 2025 and sent to a NATA accredited laboratory for testing against the ANZG (2018), Australia and New Zealand Environment Conservation Council ANZECC (2000), National Environment Protection (Assessment of Site Contamination) Measure (NEPM, 2013) and the National Health and Medical Research Council Australian Drinking Water Guidelines (NHMRC 2011). Relevant water quality results are presented in **Table 8** to **Table 12** below, lab results are attached in **Appendix B**.

The groundwater samples were taken from BH202, BH203 and BH204 using a disposable eco-bailer. The groundwater samples were collected from the outflow tube and stored in containers proved by SGS laboratory. The containers were immediately placed in an esky with ice packs to maintain a cool temperature and delivered to SGS laboratory same day. Disposable nitrile gloves were used for sample collection to minimize potential contamination.

Table 8 Water Quality Results - Physical Parameters

Analytes	Measured Concentration in Water Sample			NHMRC (2011)	ANZECC (2000) Fresh Water Threshold	ANZECC (2000) Marine Water Threshold	ANZG (2018) Fresh Water (95%[1]/99%[2] Species Protection)	ANZG (2018) Marine (95%[1]/99%[2] Species Protection)
	BH202	BH203	BH204					
Bicarbonate Alkalinity as CaCO3 (mg/L)	19	81	140	-	-	-	-	-
Carbonate Alkalinity as CaCO3 (mg/L)	<5	<5	<5	-	-	-	-	-
Hydroxide Alkalinity as CaCO3 (mg/L)	<5	<5	<5	-	-	-	-	-
Total Alkalinity as CaCO3 (mg/L)	19	81	140	-	-	-	-	-
pH	5.6	6.1	6.5	-	-	-	-	-
Electrical Conductivity (µS/cm)	460	420	490	-	-	-	-	-
Redox Potential (Eh) (mV)	-	-	152	-	-	-	-	-
Total Dissolved Solids (TDS) (mg/L)	280	250	-	-	-	-	-	-
Total Hardness (mg/L)	-	-	82	-	-	-	-	-
Dissolved Oxygen (DO) (mg/L)	-	-	1.7	-	-	-	-	-
Turbidity (NTU)	-	-	**43**	-	10	-	-	-
Total Suspended Solids (TSS) (mg/L)	27	37	83	-	-	-	-	-

Analytes	Measured Concentration in Water Sample			NHMRC (2011)	ANZECC (2000) Fresh Water Threshold	ANZECC (2000) Marine Water Threshold	ANZG (2018) Fresh Water (95%[1]/99%[2] Species Protection)	ANZG (2018) Marine (95%[1]/99%[2] Species Protection)
	BH202	BH203	BH204					
Total Organic Carbon (TOC) (mg/L)	-	-	6.9	-	-	-	-	-
Sodium Absorption Ration (SAR)	-	-	2.8	-	-	-	-	-

Notes:

1 95% protection level
2 99% protection level
3 Level of species (%) protection unknown
4 Discharge water criteria are set at one order of magnitude higher than the drinking water health-based value, or in the absence of a drinking value 10x the aesthetic-based value

Table 9 Water Quality Results - Major Anions & Major Cations

	Analytes	Measured Concentration in Water Sample			NHMRC (2011)	ANZECC (2000) Fresh Water Threshold	ANZECC (2000) Marine Water Threshold	ANZG (2018) Fresh Water (95%[1]/99%[2] Species Protection)	ANZG (2018) Marine (95%[1]/99%[2] Species Protection)
		BH202	BH203	BH204					
Major Anions	Sulfate (SO4) (mg/L)	43	1.8	3	-	-	-	-	-
	Chloride (mg/L)	93	81	65	-	-	-	-	-
	Bromide (Br) (mg/L)	-	-	<0.05	-	-	-	-	-
	Fluoride (F) (mg/L)	-	-	0.15	-	-	-	1.7[1]/0.29[2]	-
	Calcium (Ca) (mg/L)	12	2.3	18	-	-	-	-	-
Major Cations	Magnesium (Mg) (mg/L)	9.0	9.6	8.8	-	-	-	-	-
	Sodium (Na) (mg/L)	50	55	59	-	-	-	-	-
	Potassium (K) (mg/L)	5.3	1.1	6.8	-	-	-	-	-
	Cation/Anion Balance (%)	-	-	-7.01	-	-	-	-	-

Notes:

1 95% protection level
2 99% protection level
3 Level of species (%) protection unknown
4 Discharge water criteria are set at one order of magnitude higher than the drinking water health-based value, or in the absence of a drinking value 10x the aesthetic-based value

Table 10 Water Quality Results - Dissolved Inorganics and Dissolved Heavy Metals

Analytes	Measured Concentration in Water Sample			NHMRC (2011)	ANZECC (2000) Fresh Water Threshold	ANZECC (2000) Marine Water Threshold	ANZG (2018) Fresh Water (95%[1]/99%[2] Species Protection)	ANZG (2018) Marine (95%[1]/99%[2] Species Protection)
	BH202	BH203	BH204					
Aluminium (Al) (µg/L)	-	-	<5	-	-	-	0.8 (pH<6.5)[3] 55 (pH>6.5)[3]	37[1]/9[2]
Antimony (Sb) (µg/L)	-	-	<1	-	-	-	9[3]	-
Arsenic (As) (µg/L)	<1	2	<1	-	24	-	13[1]/0.8[2]	-
Barium (Ba) (µg/L)	-	-	170	20000[4]	-	-	-	-
Beryllium (Be) (µg/L)	-	-	<1	600[4]	-	-	-	-
Boron (B) (µg/L)	-	-	230	-	-	-	940[1]/340[2]	-
Cadmium (Cd) (µg/L)	0.1	<0.1	<0.1	-	0.2	0.7	0.2[1]/0.06[2]	5.5[1]/0.7[2]
Chromium (Cr) (µg/L)	<1	<1	<1	-	1	4.4	-	-
Cobalt (Co) (µg/L)	-		**3**	-	-	-	1.4[3]	1[1]/0.005[2]
Copper (Cu) (µg/L)	**5**	**2**	<1	-	1.4	1.3	1.4[1]/1[2]	1.3[1]/0.3[2]
Iron (Fe) (µg/L)	-		**6400**	-	-	-	280[1]/140[2]	540[1]/410[2]
Lead (Pb) (µg/L)	<1	1	<1	-	3.4	4.4	3.4[1]/10[2]	4.4[1]/2.2[2]
Lithium (Li) (mg/L)	-	-	0.005	-	-	-	-	-
Manganese (Mn) (µg/L)	-	-	**430**	-	-	-	1900[1]/1200[2]	80[3]
Mercury (Hg) (mg/L)	<0.00005	<0.00005	<0.00005	-	0.06	0.1	0.6[1]/0.06[2]	0.4[1]/0.1[2]
Molybdenum (Mo) (µg/L)	-	-	<1	-	-	-	34[3]	-
Nickel (Ni) (µg/L)	**20**	4	3	-	11	7	11[1]/8[2]	70[1]/7[2]
Selenium (Se) (µg/L)	-	-	<1	-	-	-	11[1]/5[2]	-
Silica (dissolved SiO2) (mg/L)	-	-	12	2100[4]	-	-	-	-
Silver (Ag) (µg/L)	-	-	<1	-	-	-	0.05[1]/0.02[2]	1.4[1]/0.8[2]
Strontium (Sr) (µg/L)	-	-	82	-	-	-	-	-
Uranium (U) (µg/L)	-	-	<1	-	-	-	0.5[3]	-
Vanadium (V) (µg/L)	-	-	<1	-	-	-	6[3]	100[1]/50[2]
Zinc (Zn) (µg/L)	**240**	7	**9**	-	8	15	8[1]/2.4[2]	8[1]/3.3[2]

Notes:

1 95% protection level
2 99% protection level
3 Level of species (%) protection unknown
4 Discharge water criteria are set at one order of magnitude higher than the drinking water health-based value, or in the absence of a drinking value 10x the aesthetic-based value

Table 11 Water Quality Results – Nutrients & Microbiological Organisms

	Analytes	Measured Concentration in Water Sample			NHMRC (2011)	ANZECC (2000) Fresh Water Threshold	ANZECC (2000) Marine Water Threshold	ANZG (2018) Fresh Water (95%[1]/99%[2] Species Protection)	ANZG (2018) Marine (95%[1]/99%[2] Species Protection)
		BH202	BH203	BH204					
Nutrients	Ammonia (NH3) (mg/L)	-	-	0.46	-	-	-	900[1]/320[2]	910[1]/500[2]
	Nitrate (NO3) (mg/L)	-	-	<0.05	-	-	-	1.1[1]/0.64[2] (<30 mg/L CaCO3) 2.6[1]/1[2] (30-150 mg/L CaCO3) 29[1]/18[2] (>150 mg/L CaCO3)	-
	Total Nitrogen (N) (mg/L)	-	-	1.9	-	-	-	-	-
	Oxidised Nitrogen (N) (mg/L)	-	-	0.023	-	-	-	-	-
	Total Phosphorus (P) (mg/L)	-	-	0.23	-	-	-	-	-
	Reactive Phosphorus (P) (mg/L)	-	-	0.093	-	-	-	-	-
Microbiological Organisms	Faecal Coliforms (MPN/100mL)	-	-	2	-	-	-	-	-
	Faecal Streptococci (CFU/100mL)	-	-	4	-	-	-	-	-
	Escherichia Coli (CFU/100mL)	-	-	<2	No detection in 100 mL	-	-	-	-

Notes:

1 95% protection level
2 99% protection level
3 Level of species (%) protection unknown
4 Discharge water criteria are set at one order of magnitude higher than the drinking water health-based value, or in the absence of a drinking value 10x the aesthetic-based value

Table 12 Water Quality Results – Organics

Analytes	Measured Concentration in Water Sample			NHMRC (2011)	ANZECC (2000) Fresh Water Threshold	ANZECC (2000) Marine Water Threshold	ANZG (2018) Fresh Water (95%[1]/99%[2] Species Protection)	ANZG (2018) Marine (95%[1]/99%[2] Species Protection)
	BH101	BH102	BH103					
Benzene (µg/L)	<0.5	<0.5	<0.5	-	950	500	950[1]/600[2]	700[1]/500[2]
Toluene (µg/L)	<0.5	<0.5	<0.5	-	-	-	180[1]/110[2]	180[1]/110[2]
Ethylbenzene (µg/L)	<0.5	<0.5	<0.5	-	-	-	80[1]/50[2]	80[1]/50[2]
O-Xylene (µg/L)	<0.5	<0.5	<0.5	-	350	-	350[1]/200[2]	-
M/P-Xylene (µg/L)	<1	<1	<1	-	200	-	-	-
Naphthalene (VOC) (µg/L)	<0.5	<0.5	<0.5	-	16	50	15[1]/2.5[2]	70[1]/50[2]
Benzo(a)pyrene (µg/L)	<0.1	<0.1	<0.1				0.2[1]/0.1[2]	0.2[1]/0.1[2]
Total Recoverable Hydrocarbons (TRHs) C10-C14 (µg/L)	150	160	160					
Total Recoverable Hydrocarbons (TRHs) C15-C28 (µg/L)	13000	13000	800					
Total Recoverable Hydrocarbons (TRHs) C29-C36 (µg/L)	25000	26000	260					
Total Recoverable Hydrocarbons (TRHs) C37-C40 (µg/L)	15000	15000	<200					
Total Recoverable Hydrocarbons (TRHs) C10-C40 (µg/L)	53000	54000	1400					
Total Recoverable Hydrocarbons (TRHs) C6-C10 (µg/L)	<50	<50	<50					
Total Recoverable Hydrocarbons (TRHs) C6-C9 (µg/L)	<40	<40	<40					
Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L)	<1	<1	-					
Benzene Toluene Ethylbenzene Xylene (BTEX) (µg/L)	<3	<3	<3	-	-	-	-	-

Notes:

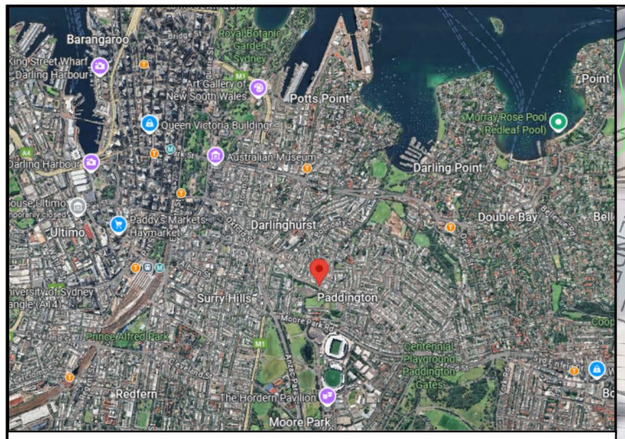
1 95% protection level
2 99% protection level
3 Level of species (%) protection unknown
4 Discharge water criteria are set at one order of magnitude higher than the drinking water health-based value, or in the absence of a drinking value 10x the aesthetic-based value

Concentrations of **Cobalt**, **Copper**, **Iron**, **Manganese**, **Nickel** and **Zinc** exceed the *marine* threshold guideline values. The **Turbidity** value of 43 NTU exceeds the ANZECC (2000) guideline value (10 NTU).

4. Statement of Limitations

The advice and parameters presented in this Groundwater Management Plan are for assessment of the expected groundwater seepage based upon the proposed development and encountered site conditions at the investigation locations.

We draw your attention to the document “Important Information”, which is attached to this letter. The statements presented in this document are intended to advise you of what your realistic expectations of this report should be. The document is not intended to reduce the level of responsibility accepted by Morrow Geotechnics, but rather to ensure that all parties who may rely on this report are aware of the responsibilities each assumes in so doing.



Site Locality

LEGEND

- Approximate Site Boundary
- Borehole Location
- Previous Borehole Location - 10/07/2025
- Contours

NOTE:
1. Drawing projection in GDA2020 / MGA zone 56, adapted from aerial imagery from "SIX Maps", accessed 14/10/2025.
2. Elevation data sourced from ELVIS - Elevation and Depth - Foundation Spatial Data Framework, accessed 14/10/2025, provided by Geoscience Australia and NSW Government – Spatial Services.

0 10 20 30 40 m

Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

DRAWN BY:	OAP
Approved:	KS
Date:	14/10/2025

Toohey Miller Pty Ltd

Geotechnical Investigation

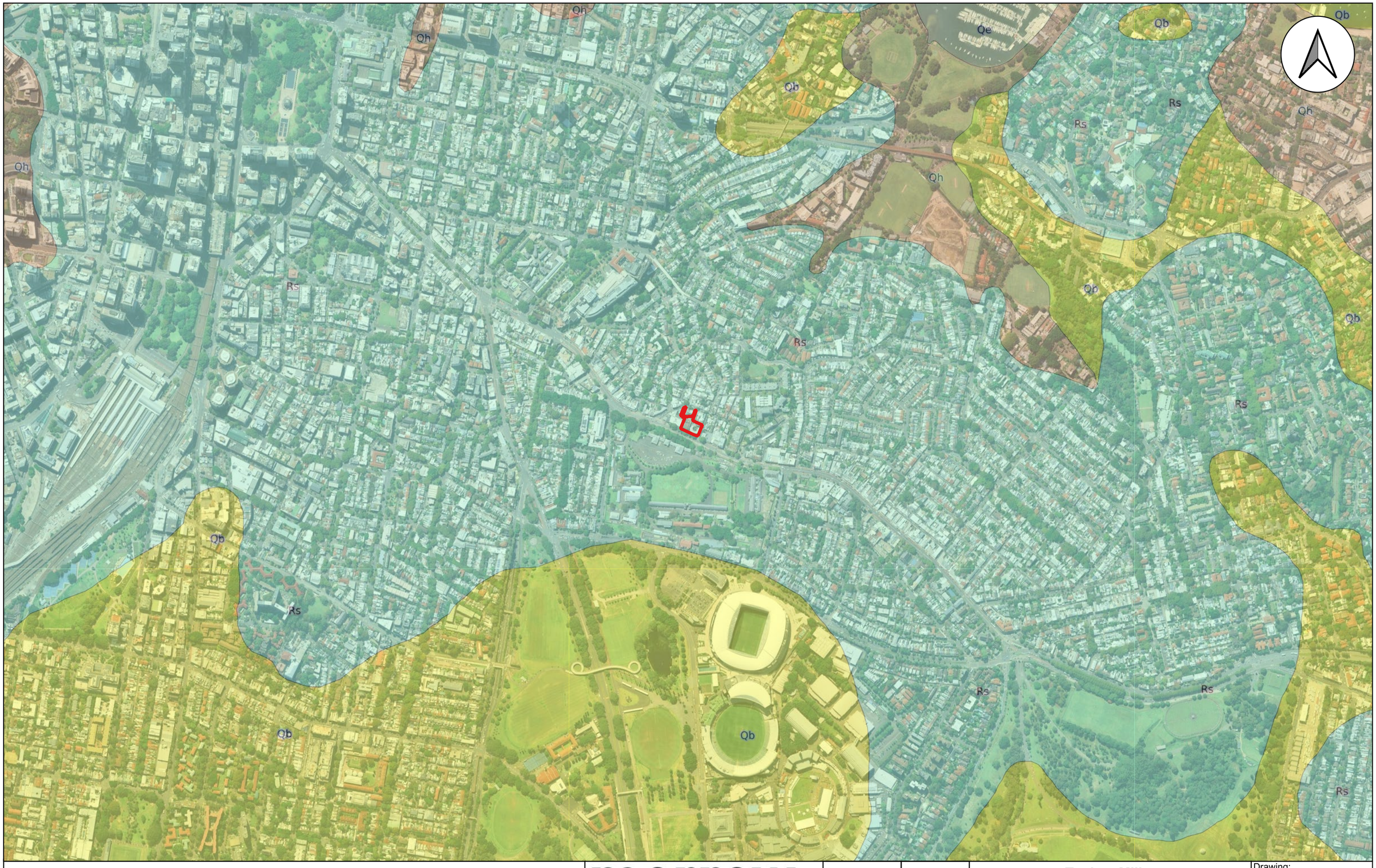
142-160 Oxford Street, 13 Gipps Street & 6 Shadeforth Street, Paddington NSW

Borehole Location Plan

Drawing: 1

Project: P3569

Revision: 0



NOTE:
1. Drawing projection in GDA2020 / MGA zone 56, adapted from aerial imagery from "SIX Maps", accessed 16/09/2025.
2. Geological spatial data obtained from MinView, accessed on 02/02/2025.

0 100 200 300 400 500 m

morrow

Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

DRAWN BY:	AON
Approved:	AB
Date:	02/02/2026

Toohey Miller

Site Hydrogeology Report

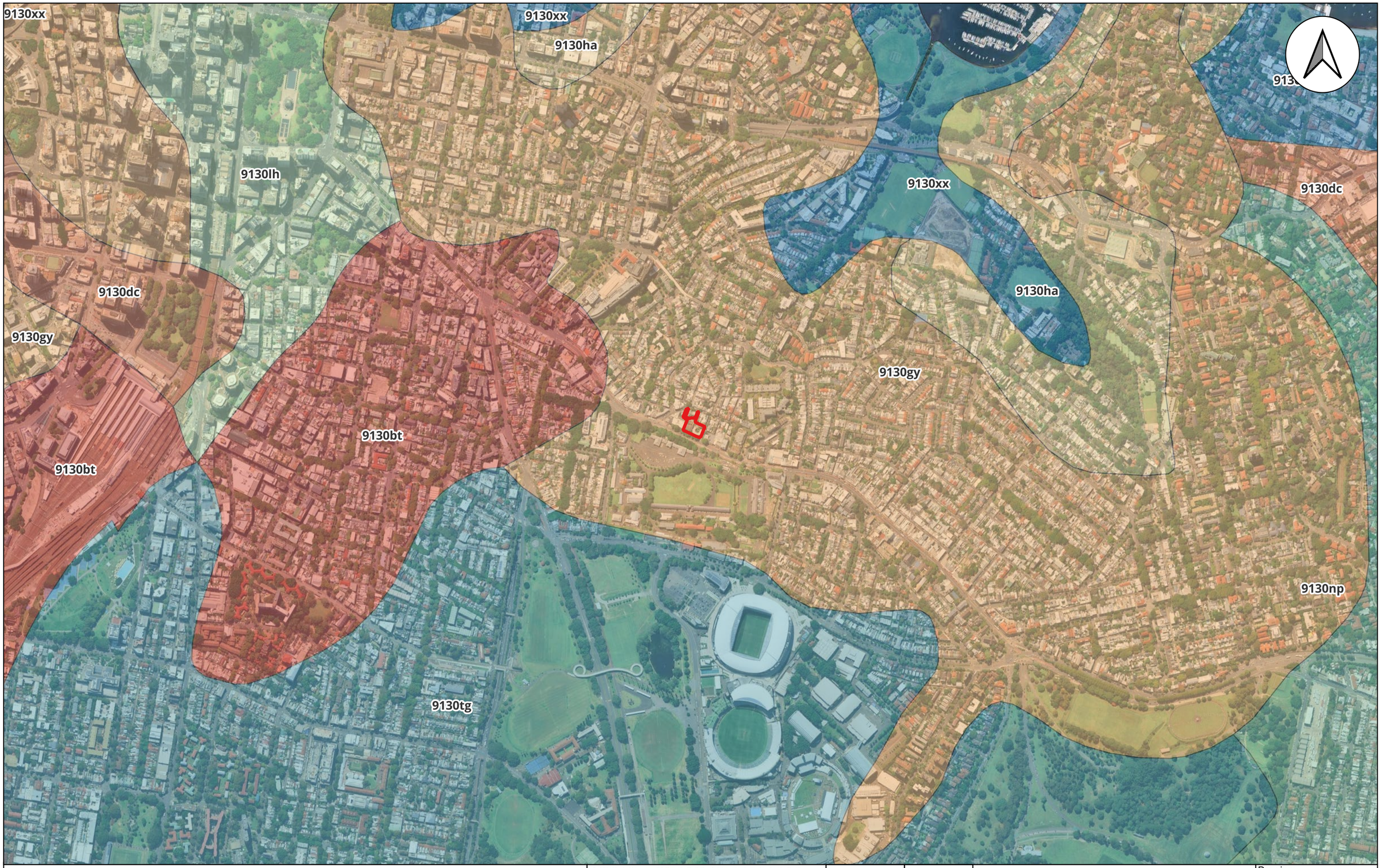
142-160 Oxford street, 13 Gipps Street & 6 Shadeforth Street, Paddington NSW

Regional Geology

Drawing: 2

Project: P3569

Revision: 0



NOTE:
1. Drawing projection in GDA2020 / MGA zone 56, adapted from aerial imagery from "SIX Maps", accessed 16/09/2025.
2. Soil Landscape data obtained by MinView, accessed on 02/02/2026.

0 250 500 750 1.000 m

Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

DRAWN BY:	AON
Approved:	AB
Date:	02/02/2026

Toohey Miller

Site Hydrogeology Report

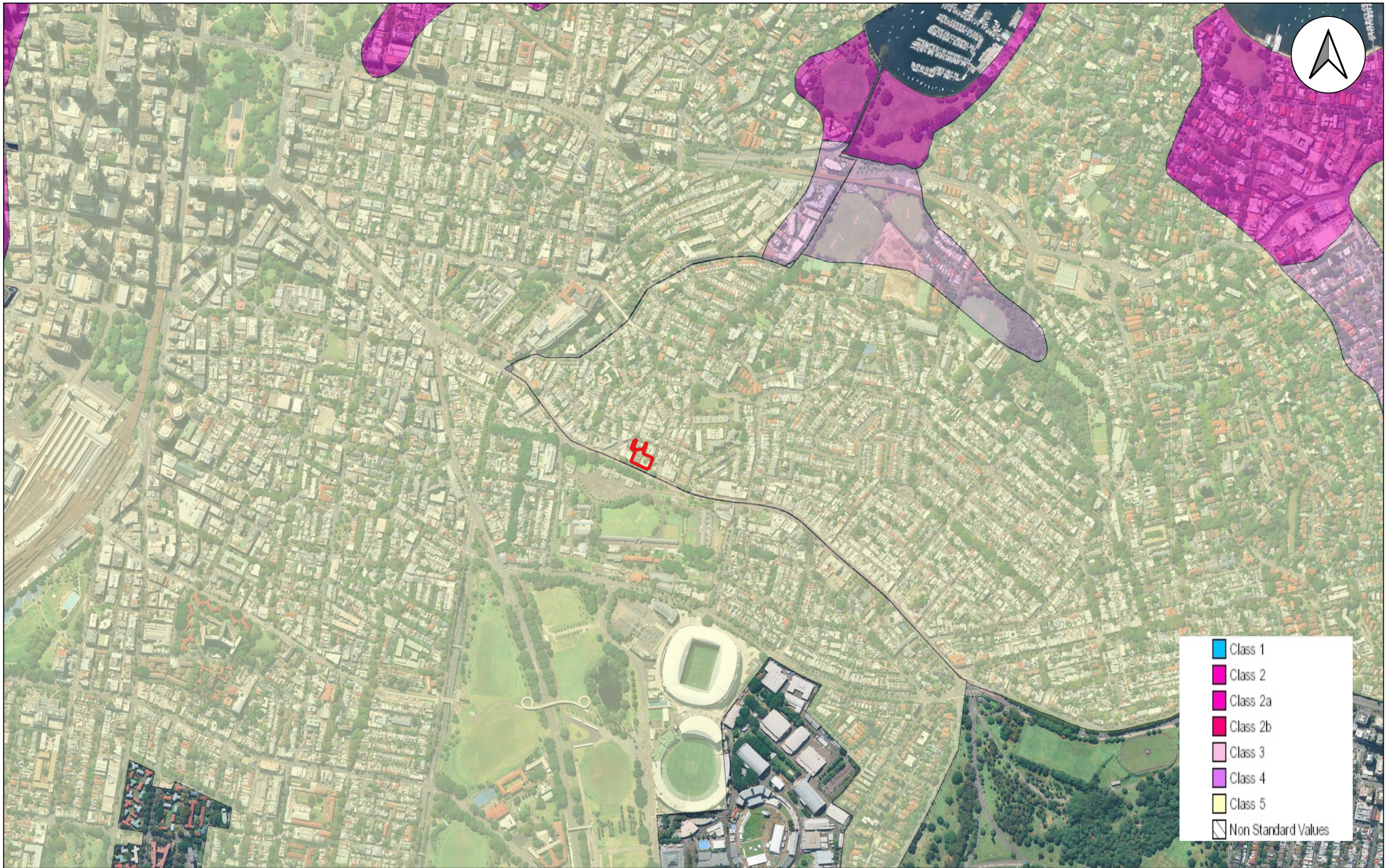
142-160 Oxford Street, 13 Gipps Street & 6 Shadeforth Street Paddington NSW.

Soil Landscapes

Drawing: 3

Project: P3569

Revision: 0



NOTE:
1. Drawing projection in GDA2020 / MGA zone 56, adapted from aerial imagery from "SIX Maps", accessed 16/09/2025.
2. Acid Sulfate Soil obtained from the Woolahara Council, accessed on 02/02/2026

0 250 500 750 1.000 m

morrow
Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

DRAWN BY:	AON
Approved:	AB
Date:	02/02/2026

Toohey Miller Pty Ltd

Site Hydrogeology Report

142-160 Oxford Street, 13 Gipps Street & 6 Shadeforth Street, Paddington NSW

Acid Sulfate Soils

Drawing: 4

Project: P3569

Revision: 0

APPENDIX A

BOREHOLE LOGS, EXPLANATORY NOTES AND SITE PHOTOS

morrow

Morrow Geotechnics

Sydney Gadigal Land: 2/5-7 Malta Steet, Fairfield East NSW 2155

Phone: 02 8599 7579

Geotechnical Log - Borehole

BH101

UTM	: 56H	**Excavator**	: Hand Tools	**Job Number**	: P3569
Easting (m)	: 335696.45	**Excavator Supplier**	: MG	**Client**	: Toohey Miller
Northing (m)	: 6249306.20	**Logged By**	: Omer Turkarslan	**Project**	: Paddington
Ground Elevation	: 53.4 (m)	**Reviewed By**	: Ozzie Baskan	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 0.4 m BGL	**Date**	: 07/07/2025	**Loc Comment**	:

Drilling Method	Water	Testing	Elevation / Depth (m)	Material Type	Graphic Log	Classification Code	Material Description	Depth (m)	Consistency	Weathering	Moisture
			53.3	Non-Soil		CCT	Non-Soil - Concrete	0.1			
Hand Auger			0.1	FILL		FILL	GRAVELLY SANDY CLAY medium plasticity, fine to medium grained sand, brown, pale brown and pale grey, trace silt, w < pl.				w < PL
							BH101 Refusal at 0.4 m (on sandstone bedrock)				

Morrow Geotechnics

Sydney Gadigal Land: 2/5-7 Malta Steet, Fairfield East NSW 2155

Phone: 02 8599 7579

Geotechnical Log - Borehole

BH102

UTM	: 56H	**Excavator**	: Hand Tools	**Job Number**	: P3569
Easting (m)	: 335686.15	**Excavator Supplier**	: MG	**Client**	: Toohey Miller
Northing (m)	: 6249284.41	**Logged By**	: Omer Turkarslan	**Project**	: Paddington
Ground Elevation	: 52.6 (m)	**Reviewed By**	: Ozzie Baskan	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 0.4 m BGL	**Date**	: 07/07/2025	**Loc Comment**	:

Drilling Method	Water	Testing	Elevation / Depth (m)	Material Type	Graphic Log	Classification Code	Material Description	Depth (m)	Consistency	Weathering	Moisture
			52.5	Non-Soil		CCT	Non-Soil - Concrete	0.1			
Hand Auger			0.1	FILL		FILL	GRAVELLY SANDY CLAY medium plasticity, fine to medium grained sand, brown and pale brown, trace silt, w < pl.				w < PL
							BH102 Refusal at 0.4 m (on sandstone bedrock)				

Morrow Geotechnics

Sydney Gadigal Land: 2/5-7 Malta Steet, Fairfield East NSW 2155

Phone: 02 8599 7579

Geotechnical Log - Borehole

BH103

UTM	: 56H	**Excavator**	: Hand Tools	**Job Number**	: P3569
Easting (m)	: 335701.78	**Excavator Supplier**	: MG	**Client**	: Toohey Miller
Northing (m)	: 6249284.62	**Logged By**	: Omer Turkarslan	**Project**	: Paddington
Ground Elevation	: 55.3 (m)	**Reviewed By**	: Ozzie Baskan	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 1.4 m BGL	**Date**	: 07/07/2025	**Loc Comment**	:

Drilling Method	Water	Testing: DCP	Elevation / Depth (m)	Material Type	Graphic Log	Classification Code	Material Description	Depth (m)	Consistency	Weathering	Moisture
Hand Auger		0 3	55.1 0.2	TOPSOIL		CI-CH	GRAVELLY SANDY CLAY medium to high plasticity, fine to medium grained sand, brown, pale brown and pale grey, trace silt, w < pl.	0.2			w < PL
		15 5 2 14 6 3 1 1 1 2 3 2		FILL		FILL	GRAVELLY SANDY CLAY stiff to very stiff, medium plasticity, fine to medium grained sand, brown , pale brown and pale grey, trace silt, with cobble size gravel (<70mm), w < pl.	0.5 1.0			w < PL
		5 2 3 8 4 13 11 12 +25					BH103 Refusal at 1.4 m				

Morrow Geotechnics
Sydney Gadigal Land: 2/5-7 Malta Steet, Fairfield East NSW 2155
Phone: 02 8599 7579

Geotechnical Log - Borehole

BH104

UTM	: 56H	Excavator	: Hand Tools	Job Number	: P3569
Easting (m)	: 335714.40	Excavator Supplier	: MG	Client	: Toohey Miller
Northing (m)	: 6249294.04	Logged By	: Omer Turkarslan	Project	: Paddington
Ground Elevation	: 54.4 (m)	Reviewed By	: Ozzie Baskan	Location	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 0.9 m BGL	Date	: 07/07/2025	Loc Comment	:

Drilling Method	Water	Testing DCP	Elevation / Depth (m)	Material Type	Graphic Log	Classification Code	Material Description	Depth (m)	Consistency	Weathering	Moisture
		0	54.3 / 0.1	Non-Soil		CCT	Non-Soil - Concrete	0.1			
Hand Auger		0 0 0 0 6 16 14 +25		FILL		FILL	FILL GRAVELLY SANDY CLAY: medium plasticity, fine to medium grained sand, pale grey and pale brown with slightly red, trace silt, w < pl.	0.5			w < PL
							BH104 Refusal at 0.9 m (on sandstone bedrock)				

morrow

Borehole No: BH201

UTM	: 56H	**Driller Rig**	: Christie Rig	**Job Number**	: P3569
Easting	: 335686.34	**Driller Supplier**	: BG Drilling	**Client**	: Toohey Miller
Northing	: 6249317.07	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.67(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.15 m	**Date**	: 13/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Testing: SPT	Elevation / Depth (m)	Graphic Log	Material Type	Classification Code	Material Description	Depth (m)	Consistency	Weathering	Moisture
Diatube				52.5 0.2		Non-Soil	CCT	Pavement Concrete 200mm.	0.2			
				0.2		FILL	FILL	FILL GRAVELLY SAND: medium dense, poorly graded, medium to coarse grained, medium to coarse sized gravel, black and grey, dry, high resistance.	1.0 2.0	MD		D
			7,10,7 (N=17)	50.1 2.6		Residual	CL	SANDY CLAY: stiff, low plasticity, fine grained sand, pale grey, w < pl.	2.6	St		w < PL
				50.0 2.7				Commenced Coring at 2.7 m	2.7			

morrow

Borehole No: BH201

UTM	: 56H	**Driller Rig**	: Christie Rig	**Job Number**	: P3569
Easting	: 335686.34	**Driller Supplier**	: BG Drilling	**Client**	: Toohey Miller
Northing	: 6249317.07	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.67(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.15 m	**Date**	: 13/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength (Very Low, Low 0.1, 0.3, Medium 1.0, High 3, Very High, Extremely High)	RQD% and TCR%	Defect Spacing (mm) (30, 100, 300, 1000, 3000)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
						Commenced Coring at 2.7 m	1.0 2.0						
NMLC Coring					SST	SANDSTONE: highly to moderately weathered, low strength, orange and purple red, medium to coarse grained, generally massive.	3.0	HW-MW	D: 0.21, A: 0.28		RQD = 71.7391 % TCR = 100%		2.82-3, JT, 90°, PL, RO, STN, OP

morrow

Borehole No: BH201

UTM	: 56H	**Driller Rig**	: Christie Rig	**Job Number**	: P3569
Easting	: 335686.34	**Driller Supplier**	: BG Drilling	**Client**	: Toohey Miller
Northing	: 6249317.07	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.67(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.15 m	**Date**	: 13/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - 100%		48.7 4.0 48.1 4.5 47.9 4.7 47.7 5.0		SST CL SST SST	SANDSTONE: moderately weathered, low to medium strength, pale grey and orange, fine grained, distinct bedding fabric. Core Loss Core Loss 190mm. SANDSTONE: moderately weathered, low to medium strength, pale grey and orange, fine grained, distinct bedding fabric. SANDSTONE: slightly weathered, medium strength, pale grey and pale brown, fine to medium grained, indistinct bedding fabric, oriented 1-10.	4 4.55 4.74 5 5.6 6.0 7.0	MW MW SW	D: 0.25, A: 0.35 D: 0.32, A: 0.49 D: 0.69, A: 0.68 D: 0.82, A: 1.16	Very Low 0.1 / Low 0.3 / Medium 1 / High 3 / Very High 10 / Extremely High	RQD = 71.7391 % TCR = 100% RQD = 84.93% TCR = 86.99% RQD = 98.36% TCR = 100%	30 / 100 / 300 / 1000 / 3000	4.03, P, 5°, PL, RO, CL, OP 4.48, P, 2°, PL, RO, STN, OP 4.5, P, 2°, PL, RO, STN, OP 4.55-4.74, CORELOSS, 5°, PL, RO, CL, OP 4.76, P, 5°, PL, RO, STN, OP 5.95, P, 5°, PL, RO, CL, OP 5.98, P, 5°, PL, RO, STN, OP 6.24, P, 2°, PL, RO, CL, OP 7.53, P, 5°, UN, RO, CL, OP 7.53, P, 5°, UN, RO, CL, OP
	Outflow - 100%												
	Outflow - 100%												

morrow

Borehole No: BH201

UTM	: 56H	**Driller Rig**	: Christie Rig	**Job Number**	: P3569
Easting	: 335686.34	**Driller Supplier**	: BG Drilling	**Client**	: Toohey Miller
Northing	: 6249317.07	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.67(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.15 m	**Date**	: 13/10/2025	**Loc Comment**	:

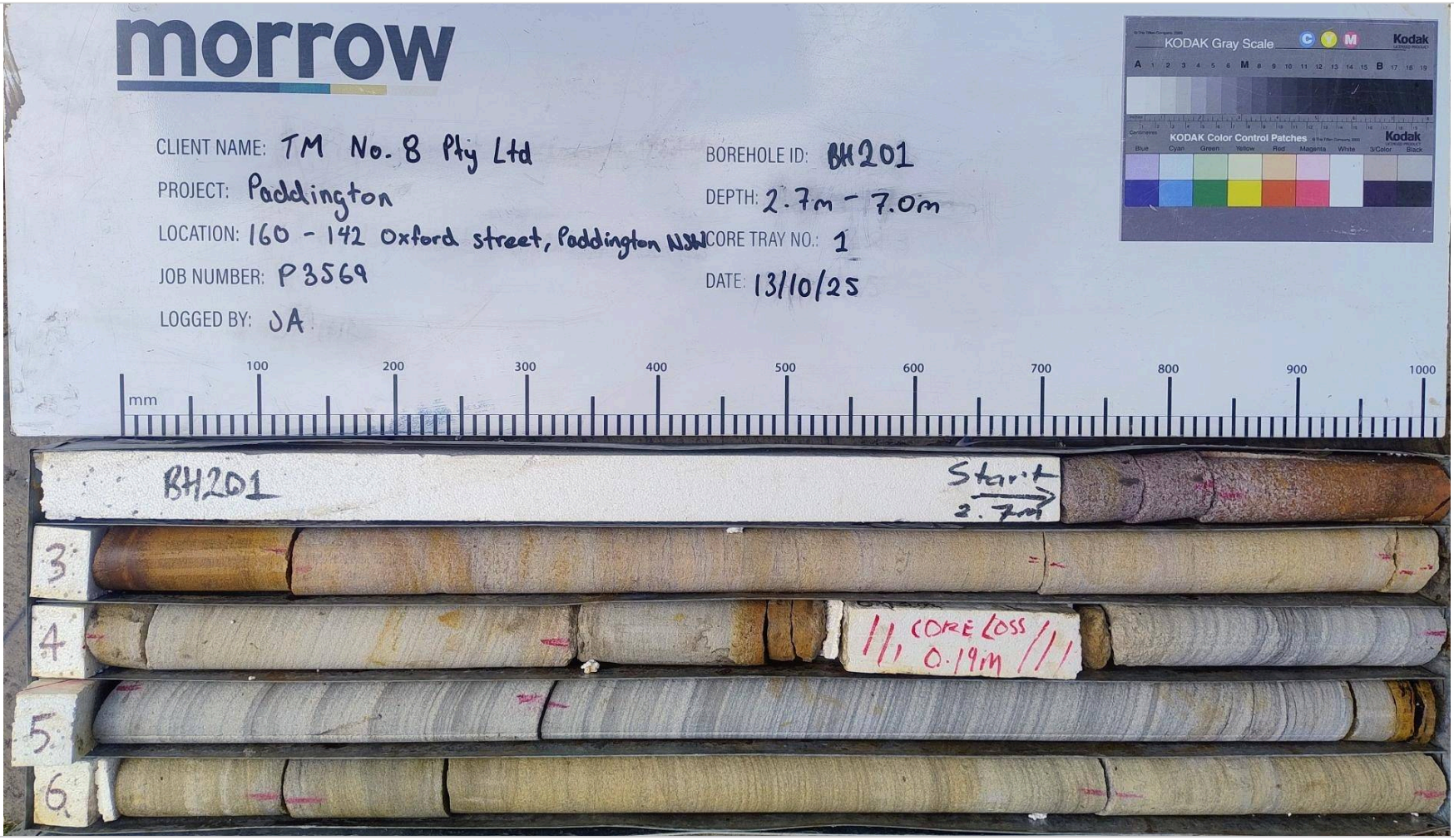
Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - 100%		44.7 8.0		SST	SANDSTONE: slightly weathered, high strength, pale grey and pale brown, medium grained, distinct bedding fabric, oriented 1-10.	8 9.0 9.05	SW	D: 1.01, A: 1.08		RQD = 98.36% TCR = 100%		8.03, P, 5°, PL, RO, CL, OP
			43.6 9.1		SST	SANDSTONE: highly weathered, medium to high strength, orange and pale grey, medium grained, indistinct bedding fabric, oriented 1-10.		HW	D: 0.71, A: 1.53				9.47-9.52, JT, 30°, UN, RO, STN, OP
			42.9 9.8		SST	SANDSTONE: highly weathered, medium to high strength, orange and pale grey, medium grained, liesegang rings.	9.75 10.0	HW	D: 1.01, A: 1.67		RQD = 77.53% TCR = 100%		9.7, P, 5°, PL, RO, STN, OP 9.74-10, JT, 90°, PL, RO, CL, OP 10.15, P, 5°, PL, RO, STN, OP 10.47, P, 5°, PL, RO, STN, OP 10.8, P, 5°, PL, RO, STN, OP
			41.7 10.9		LAM	LAMINITE: slightly weathered, medium strength, pale grey and dark grey, fine to medium grained, distinct lamination fabric, oriented 1-5.	10.95 11.0	SW	D: 1.00, A: 0.56				10.95, CS, 5°, PL, RO, STN, OP 11.15, P, 5°, PL, RO, CT, OP, clay 11.2, P, 5°, PL, RO, CT, OP, clay 11.29-11.3, XWS 11.3-11.6, XWS
			41.1 11.6		SST	SANDSTONE: moderately to slightly weathered, medium to high strength, pale grey and pale orange, fine to medium grained.	11.6	MW-SW			RQD = 74.8466 % TCR = 100%		

morrow

Borehole No: BH201

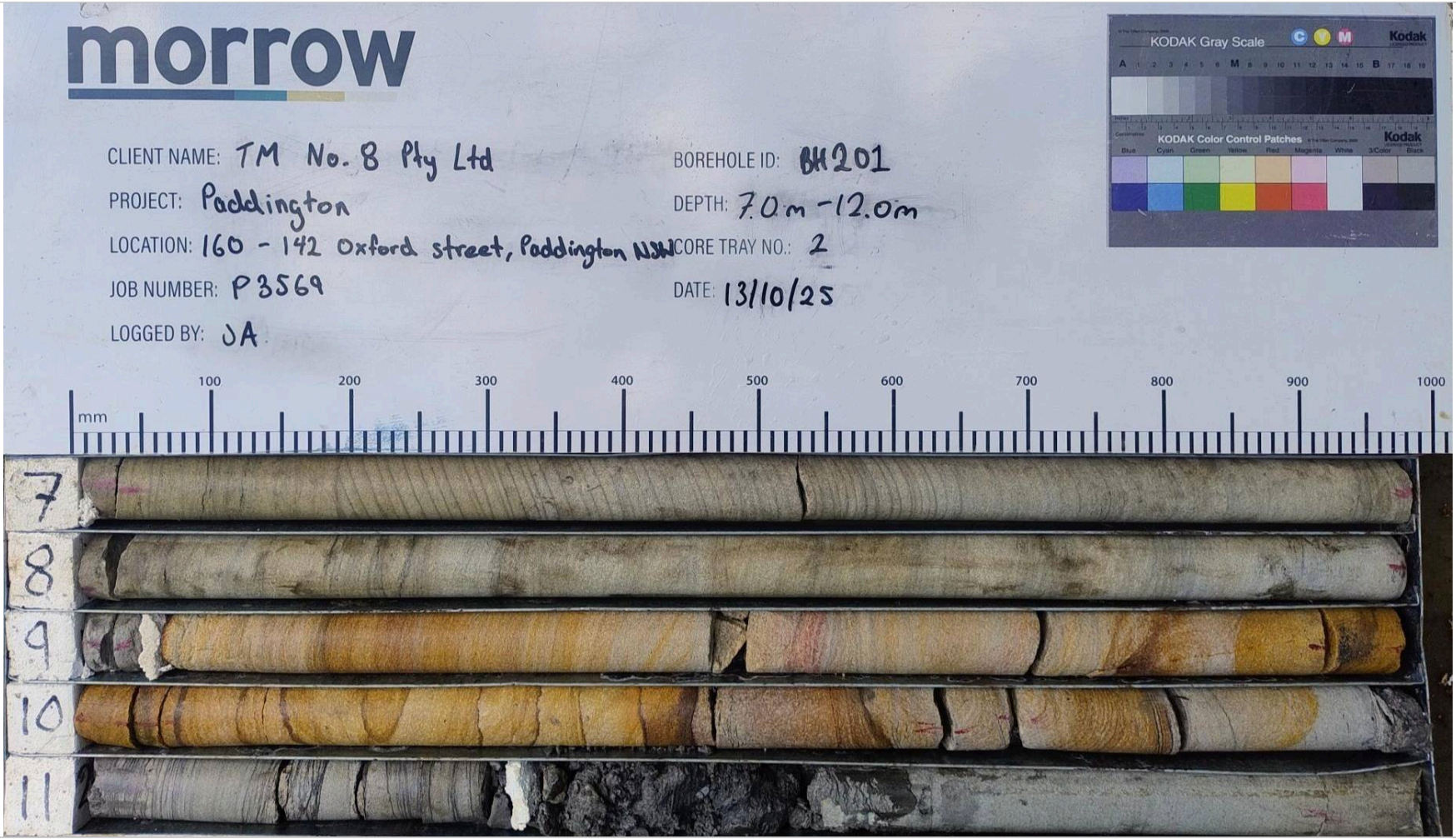
UTM	: 56H	**Driller Rig**	: Christie Rig	**Job Number**	: P3569
Easting	: 335686.34	**Driller Supplier**	: BG Drilling	**Client**	: Toohey Miller
Northing	: 6249317.07	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.67(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, I
Total Depth	: 15.15 m	**Date**	: 13/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - 100%				SST	SANDSTONE: moderately to slightly weathered, medium to high strength, pale grey and pale orange, fine to medium grained. (continued)		MW-SW	D: 0.90, A: 1.09		RQD = 74.8466 % TCR = 100%		12-12.1, CRF
			39.7 / 13.0			As above, but: high strength, medium to coarse grained.	13 / 13.0		D: 1.22, A: 1.27				12.85-12.95, JT, 90°, PL, RO, CL, OP
													13.5, P, 5°, PL, RO, CL, OP
													13.57, P, 5°, PL, RO, CT, OP, clay
	Outflow - 100%				SST		14.0	MW-SW	D: 1.14, A: 1.81		RQD = 91.36% TCR = 100%		14, P, 5°, PL, RO, CL, OP
													14.43, P, 5°, PL, RO, CT, OP
													14.65, P, 5°, PL, RO, CT, OP, clay
													14.74, P, 5°, PL, RO, CL, OP
							15.0		D: 0.98, A: 1.39				
						BH201 Reached Target Depth at 15.15 m							



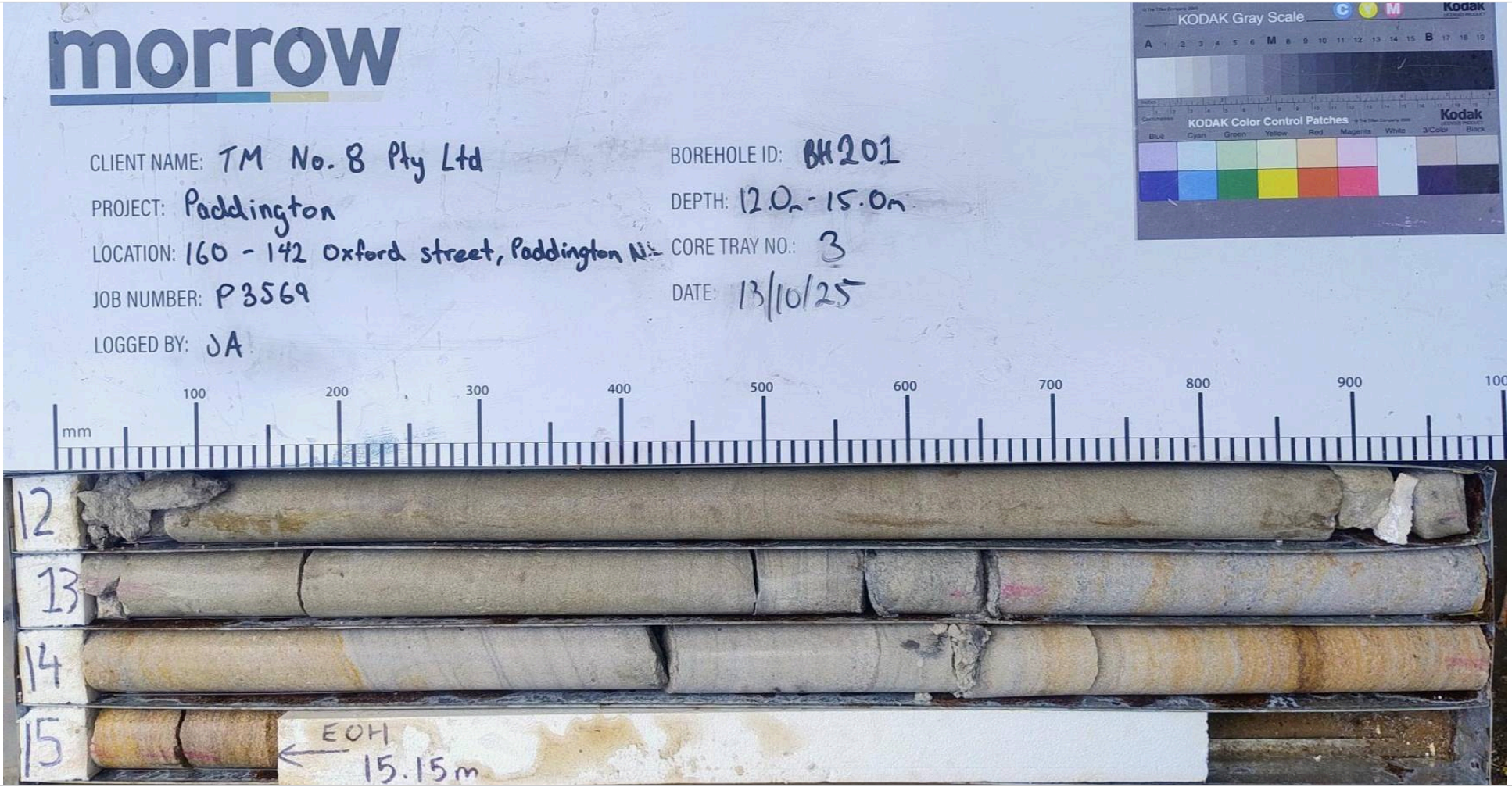
Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH201 Box 1 of 3		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH201	**BH Depth**	2.7m to 7.0m



Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH201 Box 2 of 3		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH201	**BH Depth**	7.0m to 12.0m



Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH201 Box 3 of 3		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH201	**BH Depth**	12.0m to 15.0m

morrow

Borehole No: BH202

UTM	: 56H	**Driller Rig**	: Christie Rig	**Job Number**	: P3569
Easting	: 335697.62	**Driller Supplier**	: BG Drilling	**Client**	: Toohey Miller
Northing	: 6249340.21	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.74(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.17 m	**Date**	: 14/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Testing: SPT	Elevation / Depth (m)	Graphic Log	Material Type	Classification Code	Material Description	Depth (m)	Consistency	Weathering	Moisture
Auger		50mm PVC Solid		52.6		Non-Soil	CCT	Pavement Concrete 110mm.	0.11			
				0.1		FILL	FILL	FILL GRAVEL: very loose, poorly graded, angular, coarse sized, Construction waste(bricks).	1.0	VL		
			0,0,16 (N=16)	51.4 1.3		Residual	SC	CLAYEY SAND: medium dense, well-graded, fine grained, medium plasticity clay, white and orange, wet, low resistance.	1.3 2.0	MD		W
				50.4 2.3		Rock	SST	SANDSTONE (XW): Sandy Clay - stiff, pale grey and orange, medium plasticity, fine grained sand, high resistance.	2.3 2.6	St	XW	W
								Commenced Coring at 2.6 m				

morrow

Borehole No: BH202

UTM	: 56H	**Driller Rig**	: Christie Rig	**Job Number**	: P3569
Easting	: 335697.62	**Driller Supplier**	: BG Drilling	**Client**	: Toohey Miller
Northing	: 6249340.21	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.74(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.17 m	**Date**	: 14/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description
										Very Low / Low / Medium / High / Very High / Extremely High		30 / 100 / 300 / 1000 / 3000	type, inclination, planarity, roughness, coating, thickness
							1.0						
						Commenced Coring at 2.6 m	2.0						
NMLC Coring	Outflow - 0%	50mm PVC Solid	50.0 / 2.7		SST	SANDSTONE (XW): Sandy Clay - stiff, pale grey and orange, medium plasticity, fine grained sand, high resistance.	2.7		D: 0.45, A: 0.35		RQD = 57.5% TCR = 100%		2.6-2.7, XWS 2.75, P, 2°, PL, RO, STN, OP 2.76, P, 2°, PL, RO, STN, OP
						SANDSTONE: highly weathered, low strength, pale grey and orange red, fine grained.	3.0						
									D: 0.16, A: 0.15				3.16, P, 2°, PL, RO, STN, OP
					SST			HW			RQD = 93.4783 % TCR = 100%		
		50mm PVC Slotted							D: 0.22, A: 0.19				

morrow

Borehole No: BH202

UTM	: 56H	**Driller Rig**	: Christie Rig	**Job Number**	: P3569
Easting	: 335697.62	**Driller Supplier**	: BG Drilling	**Client**	: Toohey Miller
Northing	: 6249340.21	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.74(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.17 m	**Date**	: 14/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - 0%		48.4 / 4.3		SST	SANDSTONE: highly weathered, low strength, pale grey and orange red, fine grained. (continued)	4.35	HW					4.18, P, 2°, PL, RO, STN, OP 4.25-4.26, P, 10°, CV, RO, STN, OP 4.28, P, 2°, PL, RO, STN, OP
					SST	SANDSTONE: slightly to fresh weathered, low to medium strength, pale grey, fine to medium grained, oriented 1-10.	5.0	SW-F	D: 0.30, A: 0.53		RQD = 93.4783 % TCR = 100%		4.49, P, 2°, PL, RO, CL, OP 4.85-4.87, IS, clay
			47.4 / 5.3				5.3		D: 0.52, A: 0.52				
					SST	SANDSTONE: slightly to fresh weathered, medium strength, pale grey, fine to medium grained, oriented 1-10.	6.6	SW-F					5.65, P, 10°, PL, RO, CL, OP 5.75, P, 5°, PL, RO, CL, OP
	Outflow - 0%	50mm PVC Slotted	46.7 / 6.0			SANDSTONE: fresh weathered, medium strength, pale grey, medium grained, oriented 1-10.			D: 1.00, A: 1.11		RQD = 100% TCR = 100%		
					SST		7.0	F	D: 0.85, A: 1.08				

Borehole No: BH202

UTM	: 56H	**Driller Rig**	: Christie Rig	**Job Number**	: P3569
Easting	: 335697.62	**Driller Supplier**	: BG Drilling	**Client**	: Toohey Miller
Northing	: 6249340.21	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.74(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.17 m	**Date**	: 14/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - 10%	50mm PVC Slotted	42.5 / 10.2		SST	SANDSTONE: fresh weathered, medium strength, pale grey, medium grained, oriented 1-10. (continued)	9.0	F	D: 1.07, A: 1.05	Very Low / Low / Medium / High / Very High / Extremely High	RQD = 100% TCR = 100%	30 / 100 / 300 / 1000 / 3000	8.76, P, 5°, PL, RO, CT, OP, clay
									D: 1.32, A: 1.62				
					SST	SANDSTONE: fresh weathered, high strength, pale grey and dark grey, medium grained, generally massive with shale lenses.	10.0 / 10.2	F	D: 1.77, A: 1.78		RQD = 97.76% TCR = 100%		10.55-10.59, XWS, clay
			41.7 / 11.0		SST	SANDSTONE: fresh weathered, high strength, pale grey, medium grained, generally massive.	11 / 11.0	F	D: 1.27, A: 1.66		RQD = 96.52% TCR = 100%		

morrow

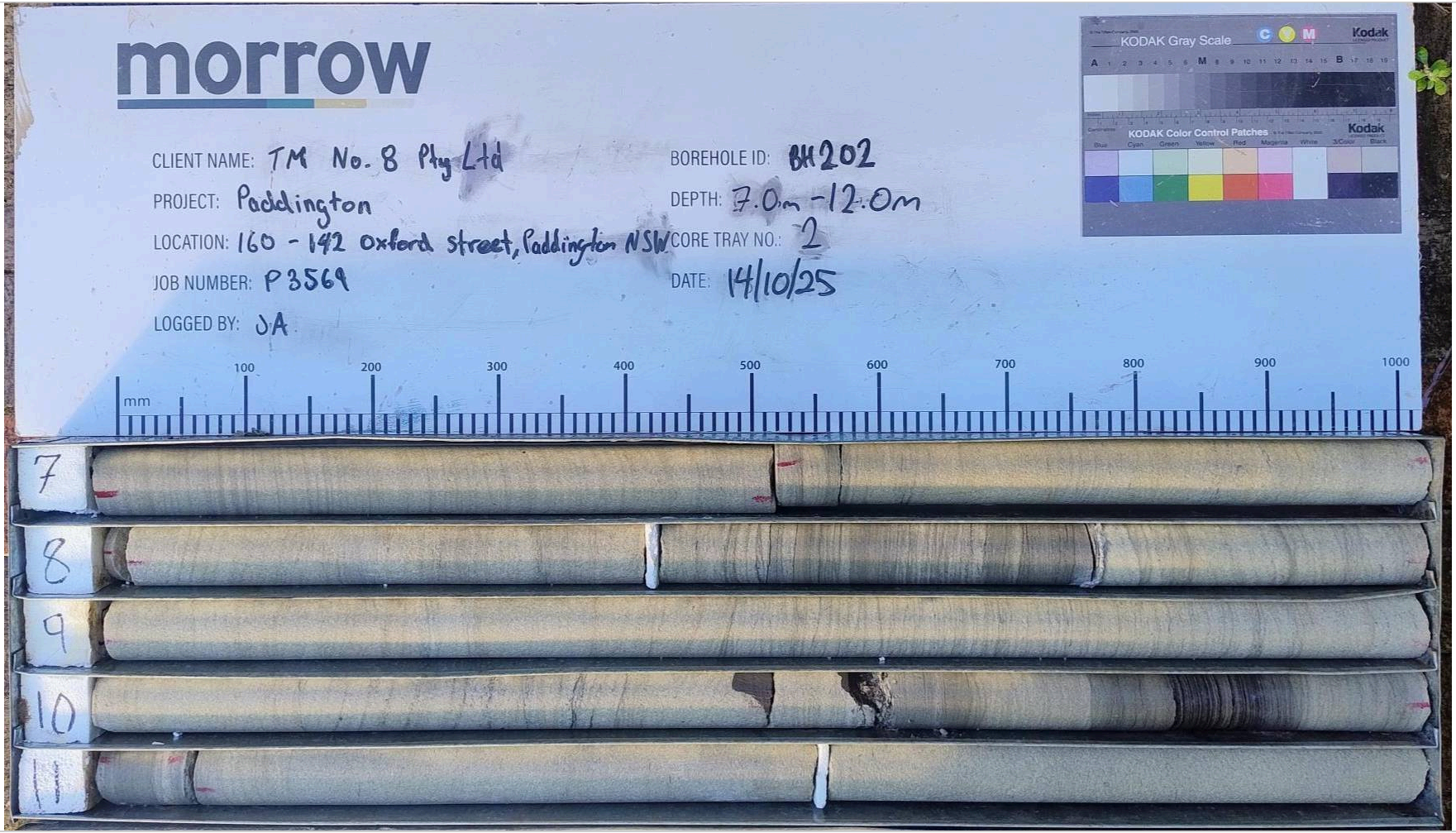
Borehole No: BH202

UTM	: 56H	**Driller Rig**	: Christie Rig	**Job Number**	: P3569
Easting	: 335697.62	**Driller Supplier**	: BG Drilling	**Client**	: Toohey Miller
Northing	: 6249340.21	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.74(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, I
Total Depth	: 15.17 m	**Date**	: 14/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - 0% Outflow - 0%	50mm PVC Slotted			SST	SANDSTONE: fresh weathered, high strength, pale grey, medium grained, generally massive. (continued)	13.0 14.0 15.0	F	D: 1.50, A: 1.28 D: 1.27, A: 1.54 D: 2.33, A: 1.98 D: 2.11, A: 2.18	Very Low 0.1, Low 0.3, Medium 1.0, High 3, Very High, Extremely High	RQD = 96.52% TCR = 100% RQD = 100% TCR = 100%	30, 100, 300, 1000, 3000	12, P, 3°, PL, RO, CL, OP 12.1, P, 3°, PL, RO, CL, OP 13.62, P, 3°, PL, RO, CL, OP 13.8, P, 10°, PL, RO, CT, OP, clay 13.9, P, 3°, PL, RO, CL, OP 13.98, P, 3°, PL, RO, CL, OP 14, P, 3°, PL, RO, CL, OP 14.05-14.06, P, 10°, PL, RO, CL, OP 14.19-14.2, P, 10°, PL, RO, CL, OP 14.56-14.57, P, 10°, PL, RO, CL, OP 14.74, P, 10°, PL, RO, CL, OP 14.9, P, 5°, PL, RO, CL, OP 15, P, 5°, PL, RO, CL, OP
						BH202 Reached Target Depth at 15.17 m							

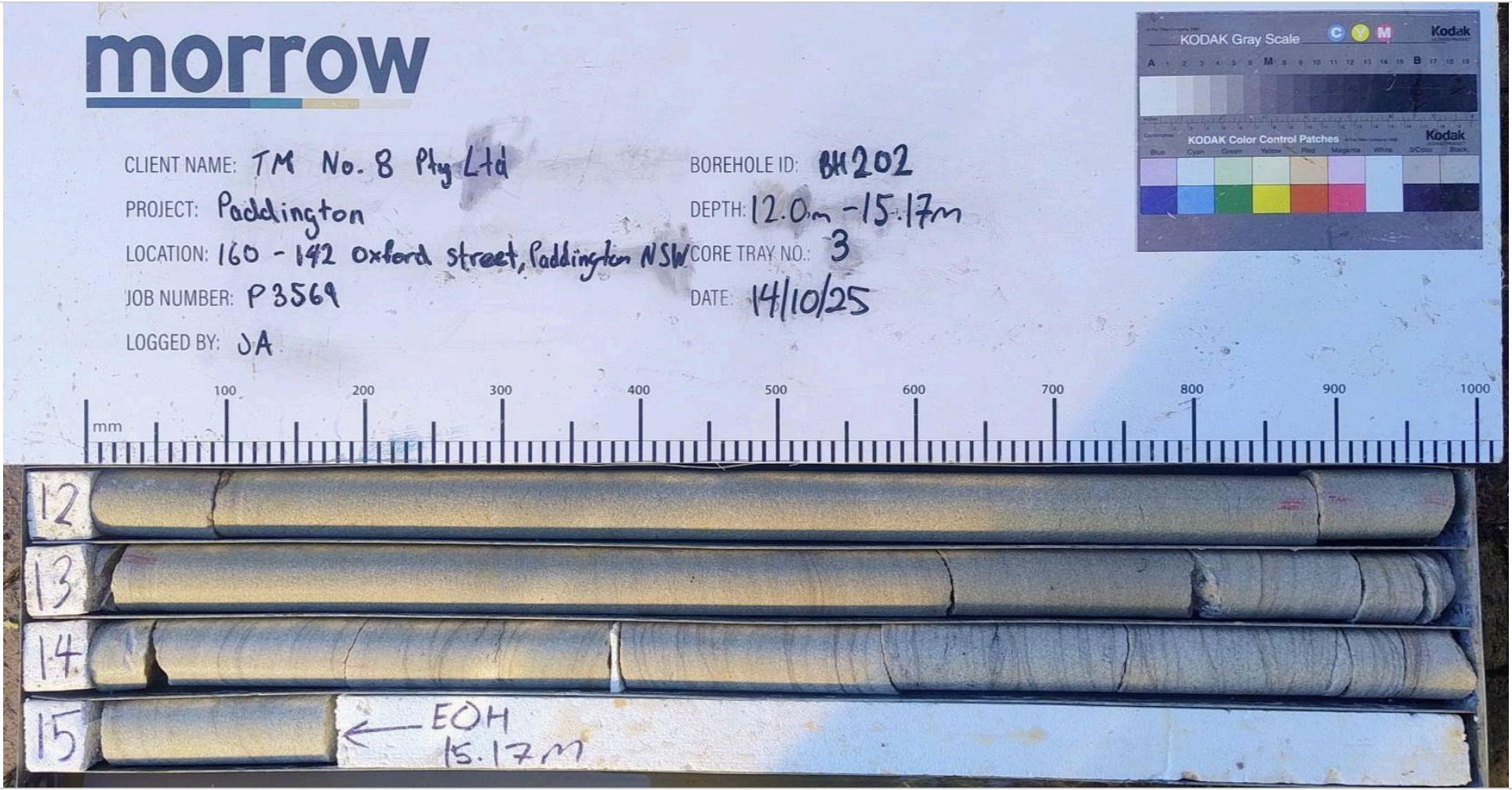
Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH202 Box 1 of 3		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH202	**BH Depth**	2.60m to 7.0m



Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH202 Box 2 of 3		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH202	**BH Depth**	7.0m to 12.0m



Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH202 Box 3 of 3		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH202	**BH Depth**	12.0m to 15.17m

morrow

Borehole No: BH203

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335681.56	**Driller Supplier**	: Geoassist Pty Ltd	**Client**	: Toohey Miller
Northing	: 6249285.82	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.52(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 25.53 m	**Date**	: 20/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram (BH203)	Testing	Elevation / Depth (m)	Graphic Log	Material Type	Classification Code	Material Description	Depth (m)	Consistency	Weathering	Moisture
Hand Auger				52.2		TOPSOIL	SM	SILTY SAND: loose, poorly graded, fine grained, brown and black, dry, no resistance.	0.3	L		D
				0.3 52.0		FILL	FILL	FILL GRAVELLY SAND: loose, poorly graded, fine grained, medium to coarse sized gravel, pale grey and brown, with silt, dry, low resistance.	0.5	L		D
Diatube		50mm PVC Solid		0.5 51.4		Non-Soil	CCT	Pavement Concrete.	1.0			
				1.1				Commenced Coring at 1.15 m	1.15			

Borehole No: BH203

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335681.56	**Driller Supplier**	: Geoassist Pty Ltd	**Client**	: Toohey Miller
Northing	: 6249285.82	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.52(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 25.53 m	**Date**	: 20/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram (BH203)	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength (Very Low, Low, Medium, High, Very High, Extremely High)	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
						Commenced Coring at 1.15 m	1.0						
NMLC Coring		50mm PVC Solid	51.3 / 1.2		SST / CL	SANDSTONE: highly weathered, very low to low strength, red and orange, fine grained, indistinct bedding fabric, dry, high resistance.	1.2	HW					1.2-1.35, CORELOSS
			51.2 / 1.4			Core Loss Core Loss.	1.35						
						SANDSTONE: highly weathered, low strength, pale grey and red orange, fine to medium grained, distinct bedding fabric, oriented 1-10.			D:0.05, A:0.25				1.43-1.44, P, 20°, PL, RO, STN, OP 1.47, P, 10°, PL, RO, STN, OP 1.5, P, 2°, PL, RO, CL, OP
													1.77, P, 5°, PL, RO, STN, OP
											RQD = 87.5% TCR = 92.5%		1.9, P, 5°, PL, RO, STN, OP
							2.0		D:0.06, A:0.20				
					SST			HW					
									D:0.11, A:0.19				2.6, P, 5°, PL, RO, STN, OP
													2.74-2.75, P, 10°, PL, RO, STN, OP
							3.0		D:0.33, A:2.80				2.94, P, 2°, PL, RO, STN, OP 2.96, P, 2°, PL, RO, STN, OP 2.98, P, 2°, PL, RO, STN, OP
			49.4 / 3.1			SANDSTONE: highly weathered, low strength, pale grey and orange red, fine grained, indistinct bedding fabric, dry, oriented 1-10.	3.1				RQD = 98.71% TCR = 100%		3.42-3.43, P, 10°, PL, RO, STN, OP
					SST			HW					
									D:0.21, A:0.37				3.68, P, 2°, PL, RO, STN, OP

Borehole No: BH203

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335681.56	**Driller Supplier**	: Geoassist Pty Ltd	**Client**	: Toohey Miller
Northing	: 6249285.82	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.52(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 25.53 m	**Date**	: 20/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring		50mm PVC Solid; 50mm PVC Slotted	47.5 / 5.0		SST	SANDSTONE: highly weathered, low strength, pale grey and orange red, fine grained, indistinct bedding fabric, dry, oriented 1-10. (continued)	5.0	HW	D:0.19, A:0.14	Very Low / Low / Medium / High / Very High / Extremely High	RQD = 98.71% TCR = 100%	30 / 100 / 300 / 1000 / 3000	
									D:0.14, A:0.31				4.7-4.72, P, 15°, PL, RO, STN, OP
					SST	SANDSTONE: slightly to fresh weathered, medium strength, pale grey and grey, medium grained, distinct bedding fabric, oriented 1-10.	5.6	SW-F	D:0.62, A:0.78		RQD = 100% TCR = 100%		
							6.0		D:0.49, A:0.74		RQD = 100% TCR = 100%		
							7.0		D:0.93, A:0.90		RQD = 100% TCR = 100%		

Borehole No: BH203

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335681.56	**Driller Supplier**	: Geoassist Pty Ltd	**Client**	: Toohey Miller
Northing	: 6249285.82	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.52(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 25.53 m	**Date**	: 20/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - 100%	50mm PVC Slotted	42.5 / 10.0		SST	SANDSTONE: slightly to fresh weathered, medium strength, pale grey and grey, medium grained, distinct bedding fabric, oriented 1-10. (continued)	9.0	SW-F	D:0.84, A:1.03 D:0.67, A:1.00	Very Low 0.1, Low 0.3, Medium 1.0, High 3, Very High 10, Extremely High	RQD = 100% TCR = 100%	30, 100, 300, 1000, 3000	
					SST	SANDSTONE: slightly weathered, medium to high strength, pale grey, fine to medium grained, distinct bedding fabric, oriented 1-10°, with carbonaceous inclusions.	10.0 11.0	SW	D:0.70, A:1.30 D:0.28, A:1.05		RQD = 90.48% TCR = 100% RQD = 98.75% TCR = 100%		10.4, P, 5°, UN, RO, CL, OP 10.48-10.49, P, 10°, UN, RO, CL, OP 11.19, P, 2°, UN, RO, CL, OP 11.33, P, 2°, UN, RO, CL, OP

Borehole No: BH203

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335681.56	**Driller Supplier**	: Geoassist Pty Ltd	**Client**	: Toohey Miller
Northing	: 6249285.82	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.52(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 25.53 m	**Date**	: 20/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - 100% Outflow - 100% Outflow - 50%	50mm PVC Slotted	40.5 12.0		SST	SANDSTONE: slightly to fresh weathered, high strength, pale grey and grey, medium grained, distinct bedding fabric, oriented 1-10.	12 13.0 14.0 15.0 15.45	SW-F	D:1.25, A:1.40 D:1.23, A:1.41 D:0.67, A:1.29 D:0.61, A:1.00	Very Low 0.1 / Low 0.3 / Medium 1.0 / High 3 / Very High / Extremely High	RQD = 98.75% TCR = 100% RQD = 100% TCR = 100% RQD = 100% TCR = 100% RQD = 100% TCR = 100%	30 / 100 / 300 / 1000 / 3000	
			37.1 15.4		SST	SANDSTONE: moderately to slightly weathered, high strength, orange and pale grey, medium to coarse grained.		MW-SW					

morrow

Borehole No: BH203

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335681.56	**Driller Supplier**	: Geoassist Pty Ltd	**Client**	: Toohey Miller
Northing	: 6249285.82	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.52(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 25.53 m	**Date**	: 20/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength (Very Low 0.03, Low 0.1, Medium 0.3, High 1, Very High 3, Extremely High)	RQD% and TCR%	Defect Spacing (mm) (30, 100, 300, 1000, 3000)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - 30% Outflow - 30% Outflow - 30%	50mm PVC Slotted			SST	SANDSTONE: moderately to slightly weathered, high strength, orange and pale grey, medium to coarse grained. (continued)	17.0 18.0 19.0	MW-SW	D:1.74, A:2.21 D:0.92, A:1.26 D:0.80, A:1.63 D:1.35, A:2.28		RQD = 100% TCR = 100% RQD = 100% TCR = 100% RQD = 100% TCR = 100% RQD = 100% TCR = 100%		17.97, P, 2°, UN, RO, CL, OP 19.65-19.66, P, 10°, PL, RO, CL, OP

Borehole No: BH203

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335681.56	**Driller Supplier**	: Geoassist Pty Ltd	**Client**	: Toohey Miller
Northing	: 6249285.82	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.52(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, I
Total Depth	: 25.53 m	**Date**	: 20/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - 30% Outflow - 30% Outflow - 30%	50mm PVC Slotted			SST	SANDSTONE: moderately to slightly weathered, high strength, orange and pale grey, medium to coarse grained. (continued)		MW-SW	D:1.86, A:2.02		RQD = 100% TCR = 100%		20.65, P, 2°, PL, RO, CL, OP
							21.0		D:1.45, A:1.95				21.18-21.19, P, 15°, PL, RO, STN, OP
			31.2 21.3				21.3						
					SST	SANDSTONE: slightly to fresh weathered, high strength, pale grey and grey, medium grained, distinct bedding fabric, oriented 1-10.		SW-F			RQD = 100% TCR = 100%		21.65-21.66, P, 15°, PL, RO, CL, OP
							22.0		D:1.42, A:1.43				
							23.0		D:1.82, A:1.71		RQD = 100% TCR = 100%		

Estimated Strength: Very Low (0.1), Low (0.3), Medium (1.0), High (3), Very High, Extremely High

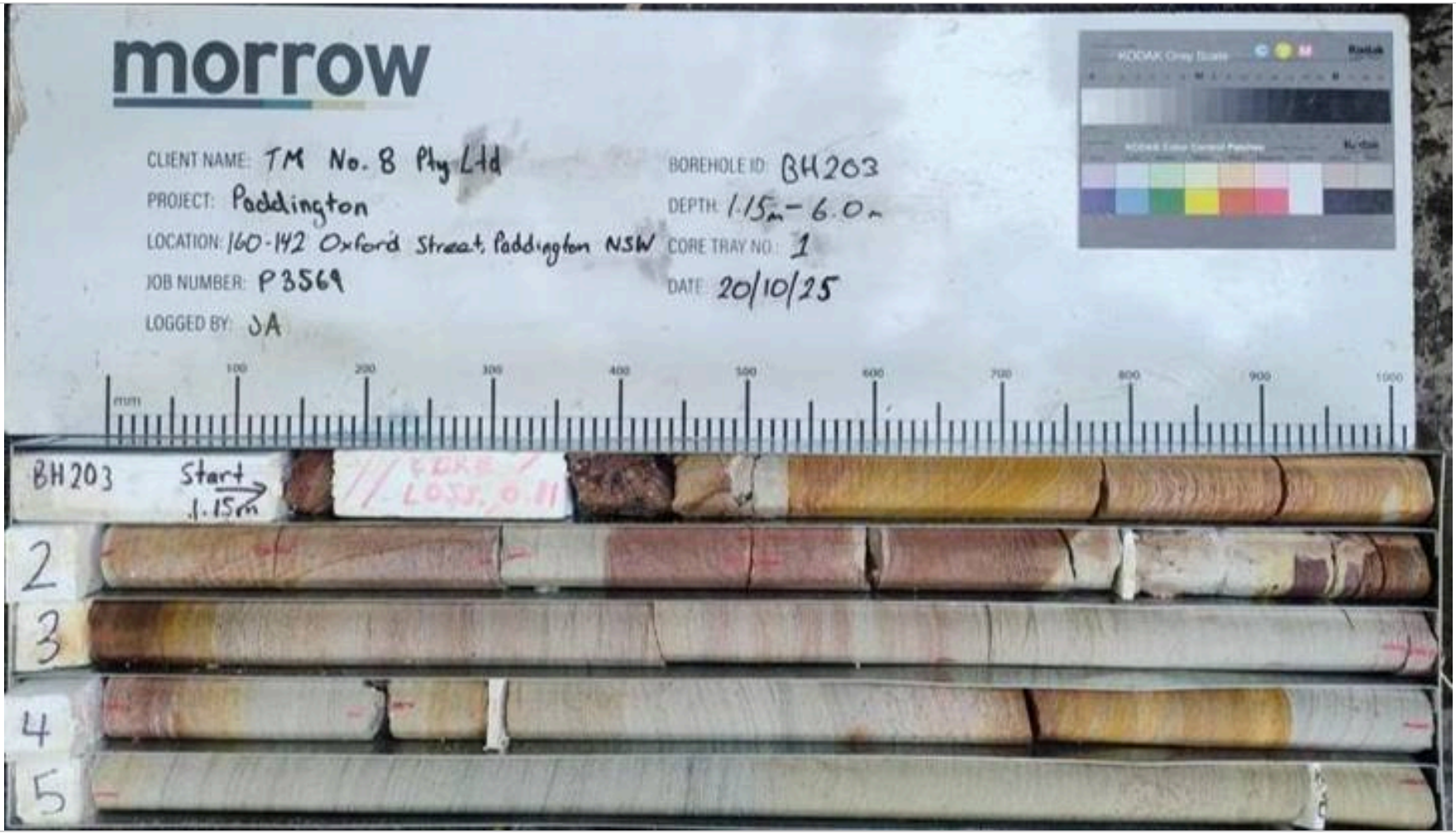
Defect Spacing (mm): 30, 100, 300, 1000, 3000

morrow

Borehole No: BH203

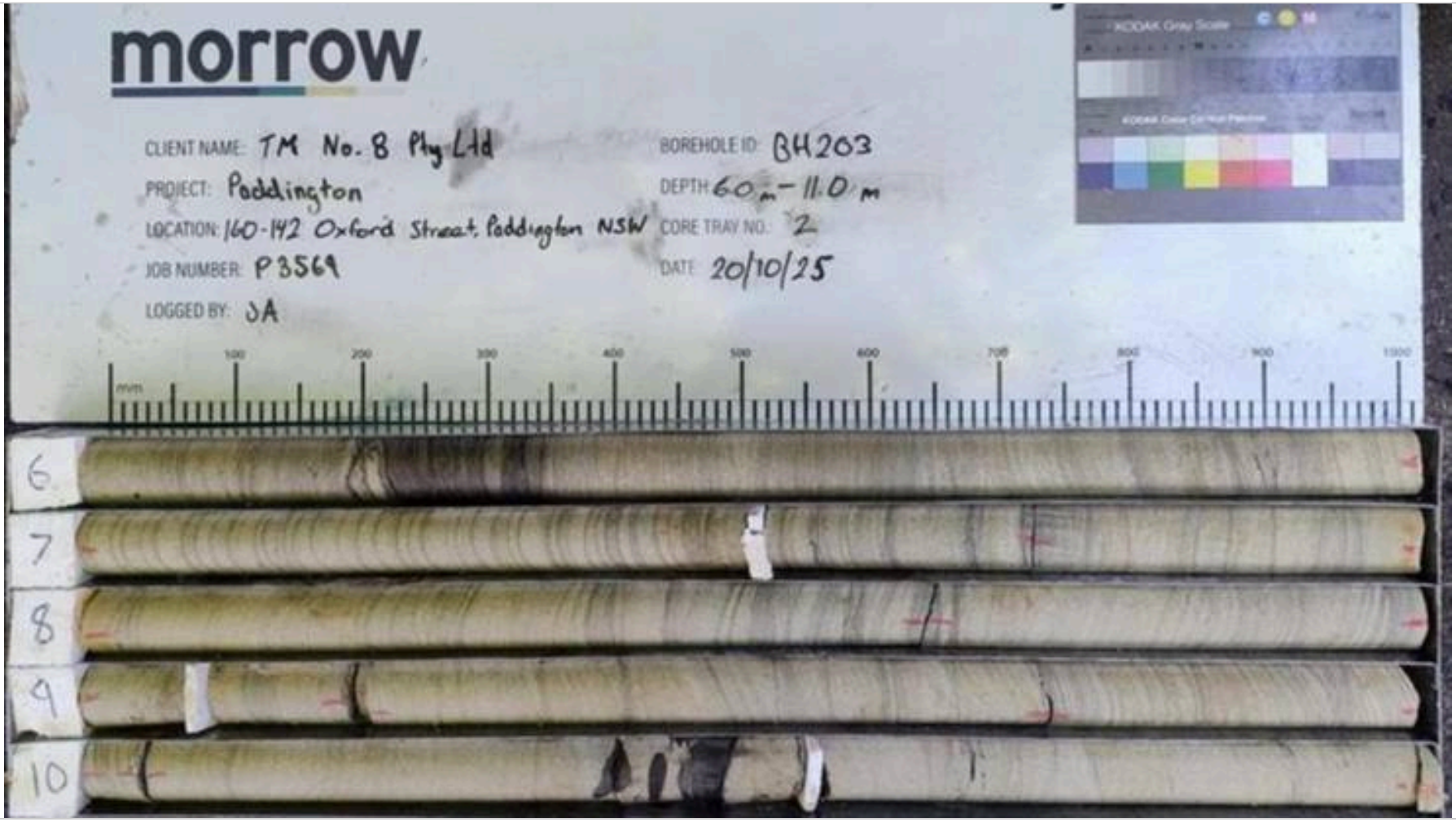
UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335681.56	**Driller Supplier**	: Geoassist Pty Ltd	**Client**	: Toohey Miller
Northing	: 6249285.82	**Logged By**	: Jordan Andonoski	**Project**	: Paddington
RL	: 52.52(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, I
Total Depth	: 25.53 m	**Date**	: 20/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength (Very Low 0.1, Low 0.3, Medium 1.0, High 3, Very High 10, Extremely High)	RQD% and TCR%	Defect Spacing (mm) (30, 100, 300, 1000, 3000)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring		50mm PVC Slotted			SST	SANDSTONE: slightly to fresh weathered, high strength, pale grey and grey, medium grained, distinct bedding fabric, oriented 1-10. (continued)	25.0	SW-F	D:1.63, A:1.43 D:1.05, A:1.39		RQD = 100% TCR = 100%		24.11, P, 7°, PL, RO, CL, OP
						BH203 Reached Target Depth at 25.53 m							



Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH203 Box 1 of 5		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH203	**BH Depth**	1.15m to 6.0m

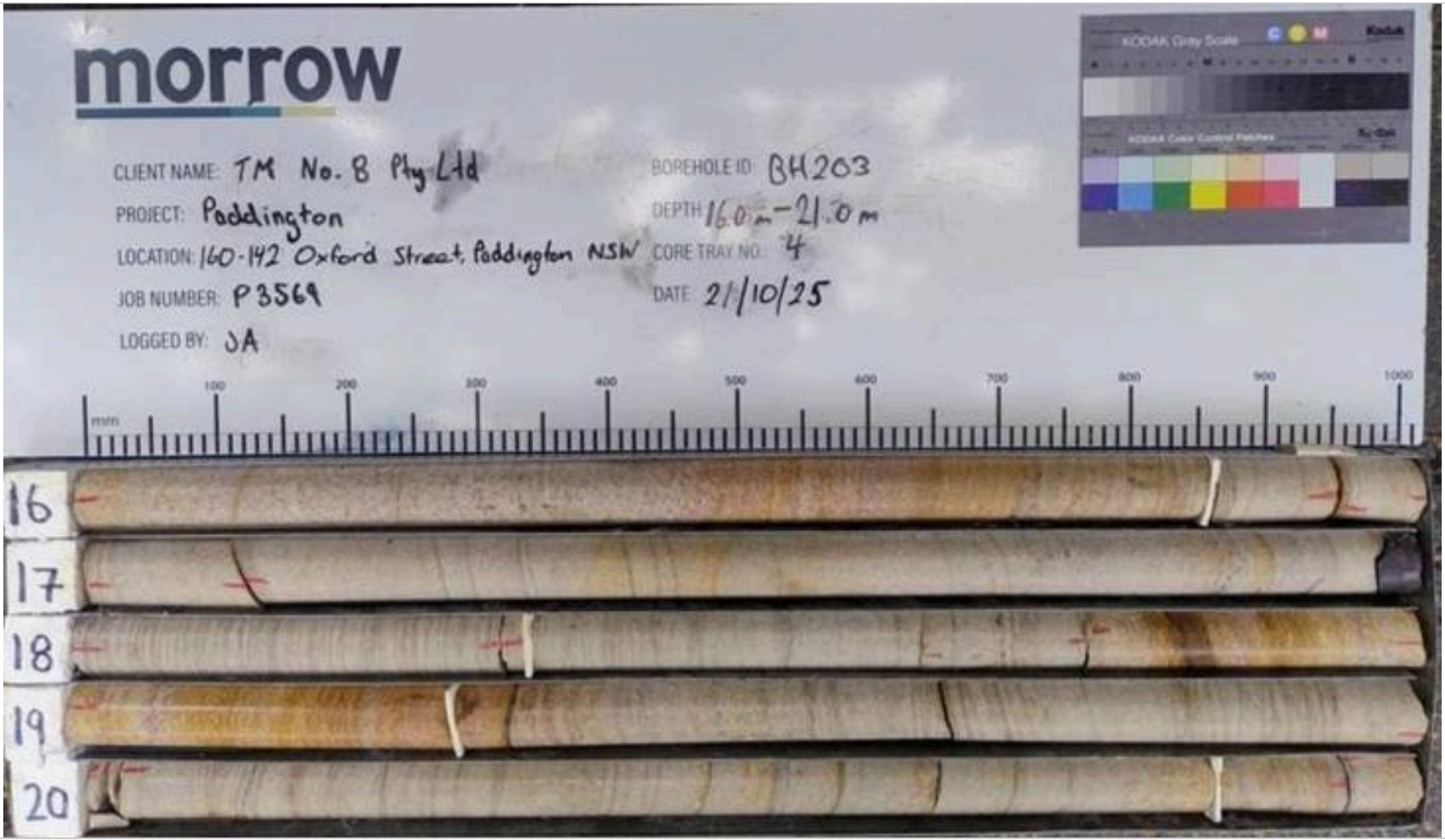


Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH203 Box 2 of 5		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH203	**BH Depth**	6.0m to 11.0m

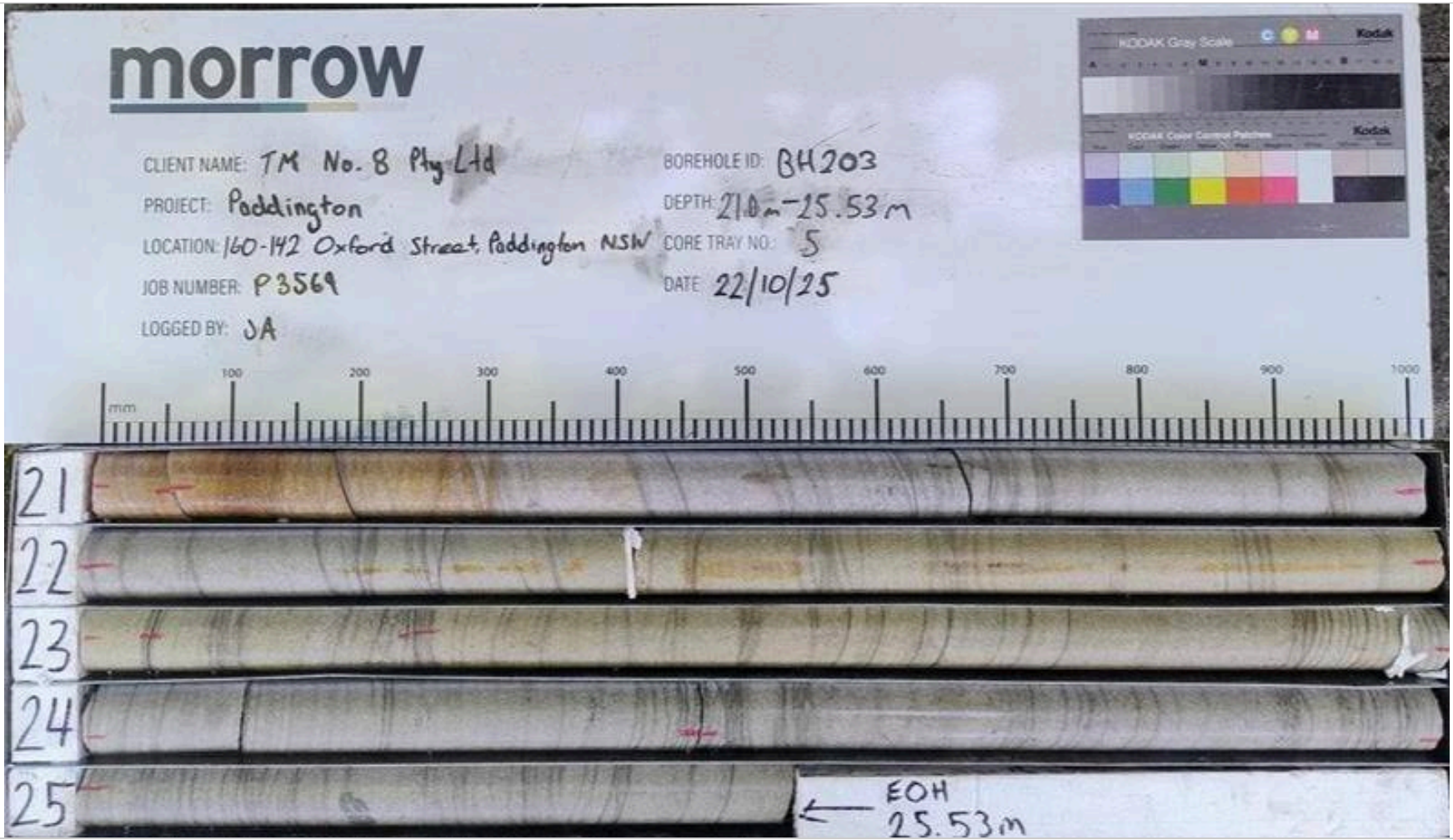
Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH203 Box 3 of 5		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH203	**BH Depth**	11.0m to 16.0m



Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH203 Box 4 of 5		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH203	**BH Depth**	16.0m to 21.0m



Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH203 Box 5 of 5		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH203	**BH Depth**	21.0 to 25.53m

morrow

Borehole No: BH204

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335673.32	**Driller Supplier**	: Hard Access Drilling	**Client**	: Toohey Miller
Northing	: 6249279.50	**Logged By**	: Mahmoud Jangidaryan	**Project**	: Paddington
RL	: 51.55(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.18 m	**Date**	: 22/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Testing	Elevation / Depth (m)	Graphic Log	Material Type	Classification Code	Material Description	Depth (m)	Consistency	Weathering	Moisture
Auger		BH204: 50mm PVC Solid		51.0		TOPSOIL	SM	SILTY GRAVELLY SAND: loose to medium dense, poorly graded, fine grained, fine sized gravel, dark brown, moist.	0.5	L-MD		M
				0.5 / 50.9		FILL	FILL	FILL GRAVELLY SAND: poorly graded, moist, With over sized fill particles, concrete layer at 1.0 m.	0.6			M
				0.6				Commenced Coring at 0.6 m				

Borehole No: BH204

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335673.32	**Driller Supplier**	: Hard Access Drilling	**Client**	: Toohey Miller
Northing	: 6249279.50	**Logged By**	: Mahmoud Jangidaryan	**Project**	: Paddington
RL	: 51.55(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.18 m	**Date**	: 22/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram (BH204)	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength (Very Low 0.03, Low 0.1, Medium 0.3, High 1.0, Very High 3, Extremely High)	RQD% and TCR%	Defect Spacing (mm) (30, 100, 300, 1000, 3000)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
						Commenced Coring at 0.6 m							
NMLC Coring	Outflow - %10	50mm PVC Solid; 50mm PVC Slotted	49.8 / 1.8		CL	Core Loss.	1.0						0.6-1.75, CORELOSS
			49.7 / 1.8		FILL	FILL GRAVELLY SAND: poorly graded, moist, With oversized fill particles, concrete layer at 1.0 m.	1.75 / 1.81				RQD = 27.27% TCR = 46.97%		1.75-1.8, CS
					SST	SANDSTONE: highly weathered, low strength, pale grey pale orange purple, very fine grained.	2.0	HW	d:0.57; a:0.60				1.85, P, 5°
									d:0.24; a:0.27				1.97-2.06, XWS
			48.8 / 2.8		CL	Core Loss.	2.79 / 2.86						2.73, P, 5°
			48.7 / 2.9		SST	SANDSTONE: highly weathered, low strength, pale yellow and purple, fine grained.	3.0	HW					2.76, P, 5°, PL, SO, CL, OP
													2.79-2.86, CORELOSS
													2.86-2.92, JT, 70°, PL, RO, CL, OP
													2.93, P, 10°, PL, RO, CL, OP
			48.2 / 3.4		SST	As above, but: highly weathered, medium strength, pale grey pale orange purple, very fine grained.	3.35	HW	d:0.20; a:0.24		RQD = 92.24% TCR = 97.83%		3.36, P, 5°, PL, RO, CL, OP
													3.57, P, 5°, PL, RO, CL, OP
													3.76, P, 5°, PL, RO, CL, OP
									d:0.52; a:0.36				3.87, P, 10°, PL, RO, CL, OP
													3.9-3.92, P, 30°, PL, RO, CL, OP

morrow

Borehole No: BH204

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335673.32	**Driller Supplier**	: Hard Access Drilling	**Client**	: Toohey Miller
Northing	: 6249279.50	**Logged By**	: Mahmoud Jangidaryan	**Project**	: Paddington
RL	: 51.55(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street,
Total Depth	: 15.18 m	**Date**	: 22/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing Is(50)	Estimated Strength	RQD% and TCR%	Defect Spacing (mm)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring	Outflow - %100	50mm PVC Slotted	47.3 / 4.3		SST	As above, but: highly weathered, medium strength, pale grey pale orange purple, very fine grained. (continued)	4.3	HW	d:0.57; a:0.62				4.17-4.18, P, 10°, PL, RO, CL, OP 4.23-4.25, P, 15°, PL, RO, CL, OP
						SANDSTONE: slightly weathered, medium strength, pale grey grey, with carbonaceous laminations.							4.37, P, 5°, PL, RO, CL, OP
											RQD = 92.24% TCR = 97.83%		4.81, P, 5°, PL, RO, CL, OP
							5.0		d:0.57; a:0.71				4.94, P, 5°, PL, RO, CL, OP
					SST			SW	d:0.69; a:0.85				
			45.5 / 6.0			As above, but: slightly to fresh weathered, medium to high strength.	6.6		d:0.82; a:1.03				6.28, P, 5°, PL, RO, CL, OP
											RQD = 100% TCR = 100%		
					SST		7.0	SW-F	d:0.61; a:1.06				7.33, P, 10°, PL, RO, CL, OP
													7.66, P, 5°, PL, RO, CL, OP
													7.84, P, 5°, PL, RO, CL, OP
													7.93, P, 5°, PL, RO, CL, OP

morrow

Borehole No: BH204

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335673.32	**Driller Supplier**	: Hard Access Drilling	**Client**	: Toohey Miller
Northing	: 6249279.50	**Logged By**	: Mahmoud Jangidaryan	**Project**	: Paddington
RL	: 51.55(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, I
Total Depth	: 15.18 m	**Date**	: 22/10/2025	**Loc Comment**	:

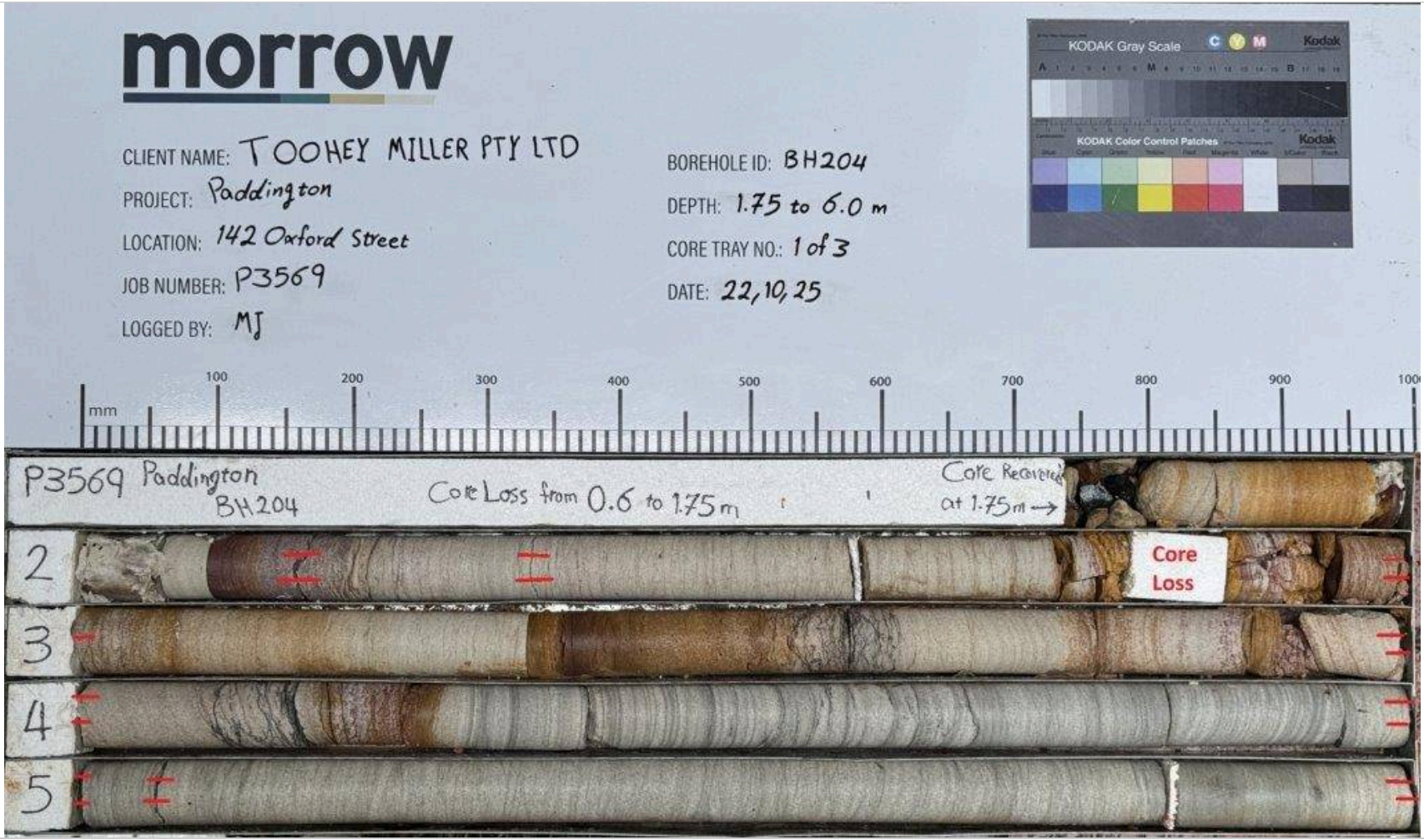
Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing: Is(50)	Estimated Strength (Very Low 0.03, Low 0.1, Medium 0.3, High 1, Very High 3, Extremely High)	RQD% and TCR%	Defect Spacing (mm) (30, 100, 300, 1000, 3000)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring		50mm PVC Slotted			SST	As above, but: slightly to fresh weathered, medium to high strength. (continued)	9.0 10.0 11.0	SW-F	d:1.17; a:1.07 d:0.83; a:0.75 d:0.88; a:1.21 d:1.41; a:1.35		RQD = 100% TCR = 100% RQD = 100% TCR = 100%		8.34, P, 5°, PL, RO, CL, OP 9.88, P, 5°, PL, RO, CL, OP 11.81-11.82, P, 5°, PL, RO, CL, OP

morrow

Borehole No: BH204

UTM	: 56H	**Driller Rig**	: Man-Portable	**Job Number**	: P3569
Easting	: 335673.32	**Driller Supplier**	: Hard Access Drilling	**Client**	: Toohey Miller
Northing	: 6249279.50	**Logged By**	: Mahmoud Jangidaryan	**Project**	: Paddington
RL	: 51.55(m)	**Reviewed By**	: Krishna Shakya	**Location**	: 142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, I
Total Depth	: 15.18 m	**Date**	: 22/10/2025	**Loc Comment**	:

Drilling Method	Water	Well Diagram	Elevation / Depth (m)	Graphic Log	Classification Code	Material Description	Depth (m)	Weathering	Testing Is(50)	Estimated Strength (Very Low 0.03, Low 0.1, Medium 0.3, High 1, Very High 3, Extremely High)	RQD% and TCR%	Defect Spacing (mm) (30, 100, 300, 1000, 3000)	Defect Description (type, inclination, planarity, roughness, coating, thickness)
NMLC Coring		50mm PVC Slotted			SST	As above, but: slightly to fresh weathered, medium to high strength. (continued)			d:1.72; a:1.86		RQD = 100% TCR = 100%		12.58, P, 5°, PL, RO, CL, OP
							13.0		d:0.56; a:0.67		RQD = 100% TCR = 100%		13.09, P, 10°, PL, VR, CL, OP
								SW-F					13.35, P, 15°, PL, RO, CL, OP
							14.0		d:0.73; a:0.76				13.86, P, 15°, PL, VR, CL, OP
			36.8 / 14.7				14.72						14.42, P, 5°, PL, RO, CL, OP
					SST	As above, but: slightly weathered, high strength, brown purple, fine to medium grained.	15.0	SW					14.6, P, 5°, PL, RO, CL, OP
									d:1.83; a:2.00				14.72, P, 10°, PL, RO, CL, OP
						BH204 Reached Target Depth at 15.18 m							



Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH204 - Box 1 of 3		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH204	**BH Depth**	0.6m to 6.0m

Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH204 - Box 2 of 3		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH204	**BH Depth**	6.0m to 11.0m

Morrow Geotechnics Pty Ltd ABN 42 605 892 126
2/5-7 Malta Street, Fairfield East NSW 2165
79/6 Bellambi Lane, Bellambi NSW 2518
E: info@morrowgeo.com.au
P: 02 8599 7579

Photo description	BH204 - Box 3 of 3		
Client	Toohey Miller		
Location	142-148 & 160 Oxford Street, 13 Gipps Street, & 6 Shadeforth Street, Paddington NSW, Australia		
Project name	Paddington		
Project No	P3569	**Scale**	Not to Scale
BH No	BH204	**BH Depth**	11.0m to 15.18m

GENERAL

Information obtained from site investigations is recorded on log sheets. The "Cored Drill Hole Log" presents data from an operation where a core barrel has been used to recover material - commonly rock. The "Non-Core Drill Hole - Geological Log" presents data from an operation where coring has not been used and information is based on a combination of regular sampling and insitu testing. The material penetrated in non-core drilling is commonly soil but may include rock. The "Excavation - Geological Log" presents data and drawings from exposures of soil and rock resulting from excavation of pits, trenches, etc.

The heading of the log sheets contains information on Project Identification, Hole or Pit Identification, Location and Elevation. The main section of the logs contains information on methods and conditions, material substance description and structure presented as a series of columns in relation to depth below the ground surface which is plotted on the left side of the log sheet. The common depth scale is 8m per drill log sheet and about 3-5m for excavation logs sheets.

As far as is practicable the data contained on the log sheets is factual. Some interpretation is inevitable in the identification of material boundaries in areas of partial sampling, the location of areas of core loss, description and classification of material, estimation of strength and identification of drilling induced fractures. Material description and classifications are based on SAA Site Investigation Code AS 1726 - 1993 with some modifications as defined below.

These notes contain an explanation of the terms and abbreviations commonly used on the log sheets.

DRILLING

Drilling & Casing

ADV	Auger Drilling with V-Bit
ADT	Auger Drilling with TC Bit
WB	Wash-bore drilling
RR	Rock Roller
NMLC	NMLC core barrel
NQ	NQ core barrel
HMLC	HMLC core barrel
HQ	HQ core barrel

Drilling Fluid/Water

The drilling fluid used is identified and loss of return to the surface estimated as a percentage.

Drilling Penetration/Drill Depth

Core lifts are identified by a line and depth with core loss per run as a percentage. Ease of penetration in non-core drilling is abbreviated as follows:

VE	Very Easy
E	Easy
M	Medium
H	High
VH	Very High

Groundwater Levels

Date of measurement is shown.

Standing water level measured in completed boreholeLevel taken during or immediately after drilling

D	Disturbed
B	Bulk
U	Undisturbed
SPT	Standard Penetration Test
N	Result of SPT (sample taken)
PBT	Plate Bearing Test
PZ	Piezometer Installation
HP	Hand Penetrometer Test

EXCAVATION LOGS

Explanatory notes are provided at the bottom of drill log sheets. Information about the origin, geology and pedology may be entered in the "Structure and other Observations" column. The depth of the base of excavation (for the logged section) at the appropriate depth in the "Material Description" column. Refusal of excavation plant is noted should it occur. A sketch of the exposure may be added.

MATERIAL DESCRIPTION – SOIL

Classification Symbol - In accordance with the Unified Classification System (AS 1726-1993, Appendix A, Table A1)

Material Description - In accordance with AS 1726-1993, Appendix A2.3

Moisture Condition

D	Dry, looks and feels dry
M	Moist, No free water on remoulding
W	Wet, free water on remoulding

Consistency - In accordance with AS 1726-1993, Appendix A2.5

VS	Very Soft	< 12.5 kPa
S	Soft	12.5 – 25 kPa
F	Firm	25 – 50 kPa
St	Stiff	50 – 100 kPa
VSt	Very Stiff	100 – 200 kPa
H	Hard	> 200 kPa

Strength figures quoted are the approximate range of undrained shear strength for each class.

Density Index. (%) is estimated or is based on SPT results.

VL	Very Loose	< 15 %
L	Loose	15 – 35 %
MD	Medium Dense	35 – 65 %
D	Dense	65 – 85 %
VD	Very Dense	> 85 %

MATERIAL DESCRIPTION -ROCK

Material Description

Identification of rock type, composition and texture based on visual features in accordance with AS 1726-1993, Appendix A3.1-A3.3 and Tables A6a, A6b and A7.

Core Loss

Is shown at the bottom of the run unless otherwise indicated.

Bedding

Thinly Laminated	< 6 mm
Laminated	6 - 20
Very Thinly Bedded	20 - 60
Thinly Bedded	60 - 200
Medium Bedded	200 – 600
Thickly Bedded	600 – 2000
Very Thickly Bedded	> 2000

Weathering - No distinction is made between weathering and alteration. Weathering classification assists in identification but does not imply engineering properties.

Fresh (F)	Rock substance unaffected by weathering
Slightly Weathered(SW)	Rock substance partly stained or discoloured. Colour and texture of fresh rock recognisable.
Moderately Weathered (MW)	Staining or discolouration extends throughout rock substance. Fresh rock colour not recognisable.
Highly Weathered(HW)	Stained or discoloured throughout. Signs of chemical or physical alteration. Rock texture retained.
Extremely Weathered (EW)	Rock texture evident but material has soil properties and can be remoulded.

Strength - The following terms are used to described rock strength:

Rock Strength Class	Abbreviation	Point Load Strength Index, Is(50) (MPa)
Extremely Low	EL	< 0.03
Very Low	VL	0.03 to 0.1
Low	L	0.1 to 0.3
Medium	M	0.3 to 1
High	H	1 to 3
Very High	VH	3 to 10
Extremely High	EH	≥ 10

Strengths are estimated and where possible supported by Point Load Index Testing of representative samples. Test results are plotted on the graphical estimated strength by using Diametral Point Load Tests and Axial Point Load Tests.

Where the estimated strength log covers more than one range it indicates the rock strength varies between the limits shown.

MATERIALS STRUCTURE/FRACTURES

ROCK

Natural Fracture Spacing - A plot of average fracture spacing excluding defects known or suspected to be due to drilling, core boxing or testing. Closed or cemented joints, drilling breaks and handling breaks are not included in the Natural Fracture Spacing.

Visual Log - A diagrammatic plot of defects showing type, spacing and orientation in relation to core axis.

Defects	————	Defects open in-situ or clay sealed
	- - - - - - - - - -	Defects closed in-situ
	.....	Breaks through rock substance

Additional Data - Description of individual defects by type, orientation, in-filling, shape and roughness in accordance with AS 1726-1993, Appendix A Table A10, notes and Figure A2.

Orientation - angle relative to the plane normal to the core axis.

Type	BP	Bedding Parting
	JT	Joint
	SM	Seam
	FZ	Fracture Zone
	SZ	Shear Zone
	VN	Vein
	FL	Foliation
	CL	Cleavage
	DL	Drill Lift
	HB	Handling Break
	DB	Drilling Break
Infilling	CN	Clean
	X	Carbonaceous
	Clay	Clay
	KT	Chlorite
	CA	Calcite
	Fe	Iron Oxide
	Qz	Quartz
	MS	Secondary Mineral
	MU	Unidentified Mineral
Shape	PR	Planar
	CU	Curved
	UN	Undulose
	ST	Stepped
	IR	Irregular
	DIS	Discontinuous
Roughness	POL	Polished
	SL	Slickensided
	S	Smooth
	RF	Rough
	VR	Very Rough

SOIL

Structures - Fissuring and other defects are described in accordance with AS 1726-1993, Appendix A2.6, using the terminology for rock defects.

Origin - Where practicable an assessment is provided of the probable origin of the soil, eg fill, topsoil, alluvium, colluvium, residual soil

APPENDIX B

WATER QUALITY LABORATORY TESTING CERTIFICATES

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Andrew Butel
Client	MORROW GEOTECHNICS PTY LTD
Address	79/6 Bellambi Lane Bellambi NSW 2518
Telephone	(Not specified)
Facsimile	(Not specified)
Email	andy@morrowgeo.com.au
Project	**P3569 Paddington**
Order Number	**P3569**
Samples	3

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE292522 R0**
Date Received	11/11/2025
Date Reported	18/11/2025

COMMENTS

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

SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
Organic Section Head

Shane MCDERMOTT
Laboratory Manager

Teresa NGUYEN
Organic Chemist

Ying Ying ZHANG
Laboratory Technician

VOCs in Water [AN433] Tested: 12/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
Benzene	µg/L	0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5	<1.5	<1.5
Total BTEX	µg/L	3	<3	<3	<3
Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 12/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
TRH C6-C10	µg/L	50	<50	<50	<50
TRH C6-C9	µg/L	40	<40	<40	<40
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 12/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
TRH C10-C14	µg/L	50	150	160	160
TRH C15-C28	µg/L	200	13000	13000	800
TRH C29-C36	µg/L	200	25000	26000	260
TRH C37-C40	µg/L	200	15000	15000	<200
TRH >C10-C16	µg/L	60	370	360	330
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	370	360	330
TRH >C16-C34 (F3)	µg/L	500	31000	32000	830
TRH >C34-C40 (F4)	µg/L	500	21000	21000	<500
TRH C10-C40	µg/L	320	53000	54000	1400

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 12/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
Naphthalene	µg/L	0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	**0.1**	**0.1**	<0.1
Pyrene	µg/L	0.1	**0.4**	**0.4**	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(b&j&k)fluoranthene	µg/L	0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	<1	<1	-

Anions by Ion Chromatography in Water [AN245] Tested: 13/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
Chloride	mg/L	0.05	**93**	**81**	**65**
Fluoride	mg/L	0.1	-	-	**0.15**
Sulfate, SO4	mg/L	1	**43**	**1.8**	**33**
Nitrate Nitrogen, NO3-N	mg/L	0.005	-	-	**0.022**
Bromide	mg/L	0.05	-	-	<0.05

Alkalinity [AN135] Tested: 13/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
Bicarbonate Alkalinity as CaCO3	mg/L	5	**19**	**81**	**140**
Bicarbonate Alkalinity as HCO3	mg/L	5	**23**	**99**	**170**
Carbonate Alkalinity as CaCO3	mg/L	5	<5	<5	<5
Carbonate Alkalinity as CO3	mg/L	5	<5	<5	<5
Hydroxide Alkalinity as CaCO3	mg/L	5	<5	<5	<5
Hydroxide Alkalinity as OH	mg/L	5	<5	<5	<5
Total Alkalinity as CaCO3	mg/L	5	**19**	**81**	**140**
Carbonate Hardness as CaCO3*	mg CaCO3/L	2	**18.647166666666**	**81.319666666666**	**138.577333333333**
Non-Carbonate Hardness as CaCO3*	mg CaCO3/L	2	-	-	-
Negative Hardness as CaCO3*	mg CaCO3/L	-100	-	-	-

Acidity and Free CO2 [AN140] Tested: 17/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002
Acidity to pH 8.3	mg CaCO3/L	5	**91**	**93**

pH in water [AN101] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
pH**	pH Units	0.1	**5.6**	**6.1**	**6.5**
Temperature of test*	°C	-	-	-	-

Conductivity and TDS by Calculation - Water [AN106] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
Conductivity @ 25 C	µS/cm	2	**460**	**420**	**490**
Total Dissolved Solids (by calculation)	mg/L	2	**280**	**250**	-

Total and Volatile Suspended Solids (TSS / VSS) [AN114] Tested: 13/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
Total Suspended Solids Dried at 103-105°C	mg/L	5	**27**	**37**	**83**

Total Dissolved Solids (TDS) in water [AN113] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Total Dissolved Solids Dried at 175-185°C	mg/L	10	**260**

Turbidity [AN119] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Turbidity	NTU	0.5	**43**

Dissolved Oxygen by Membrane Electrode [AN176] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Temperature*	°C	-	**17.0**
Dissolved Oxygen**	mg/L	0.5	**1.7**
Dissolved Oxygen (percent saturation)**	%	1	**17.7**

Forms of Carbon [AN190] Tested: 17/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Total Organic Carbon as NPOC	mg/L	0.2	**6.9**

Ammonia Nitrogen by Discrete Analyser [AN291] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Ammonia Nitrogen, NH_3 as N	mg/L	0.01	**0.46**

Calculation of Anion-Cation Balance (SAR Calc) [AN121] Tested: 18/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Sum of Ions*	mg/L	10	**335**
Anion-Cation Balance	%	-100	**-7.01**
TFSS*	mg/L	10	**335**
Sodium Adsorption Ratio*	No unit	0.1	**2.8**

Nitrite in Water [AN277] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Nitrite Nitrogen, NO2 as N	mg/L	0.005	<0.005
Total Oxidised Nitrogen, NOx-N	mg/L	0.005	**0.023**

TKN Kjeldahl Digestion by Discrete Analyser [AN281/292] Tested: 13/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Total Kjeldahl Nitrogen	mg/L	0.05	**1.8**
Total Nitrogen (calc)	mg/L	0.05	**1.9**

Total Phosphorus by Kjeldahl Digestion DA in Water [AN279/AN293] Tested: 13/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	**0.23**

Filterable Reactive Phosphorus (FRP) [AN278] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Filterable Reactive Phosphorus as P	mg/L	0.005	**0.093**

Redox Potential (Eh) in water [AN240] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Eh of Sample Relative to Standard H+ Electrode***	mV	-500	**152**
Temperature of Sample*	°C	0.1	**23.1**

Metals in Water (Dissolved) by ICPOES [AN320] Tested: 17/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
Calcium, Ca	mg/L	0.2	12	2.3	18
Magnesium, Mg	mg/L	0.1	9.0	9.6	8.8
Total Hardness by Calculation	mg CaCO3/L	1	-	-	82
Sodium Adsorption Ratio	No unit	0.2	-	-	2.8
Sodium, Na	mg/L	0.5	50	55	59
Potassium, K	mg/L	0.1	5.3	1.1	6.8
Lithium, Li	mg/L	0.005	-	-	0.005
Silicon, Si*	mg/L	0.05	-	-	5.5
Soluble Silicon as Silica, SiO2*	mg/L	0.1	-	-	12

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 17/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
Silver	µg/L	1	-	-	<1
Aluminium	µg/L	5	-	-	<5
Arsenic	µg/L	1	<1	2	<1
Cadmium	µg/L	0.1	0.1	<0.1	<0.1
Chromium	µg/L	1	<1	<1	<1
Copper	µg/L	1	5	2	<1
Lead	µg/L	1	<1	1	<1
Nickel	µg/L	1	20	4	3
Zinc	µg/L	5	240	7	9
Antimony	µg/L	1	-	-	<1
Barium	µg/L	1	-	-	170
Beryllium	µg/L	1	-	-	<1
Boron	µg/L	5	-	-	230
Cobalt	µg/L	1	-	-	3
Iron	µg/L	5	-	-	6400
Manganese	µg/L	1	-	-	430
Molybdenum	µg/L	1	-	-	<1
Selenium	µg/L	1	-	-	<1
Strontium	µg/L	1	-	-	82
Uranium	µg/L	1	-	-	<1
Vanadium	µg/L	1	-	-	<1

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 14/11/2025

PARAMETER	UOM	LOR	BH202 WATER - 11/11/25 9:00 SE292522.001	BH203 WATER - 10/11/25 14:00 SE292522.002	BH204 WATER - 10/11/25 14:00 SE292522.003
Mercury, Hg	mg/L	0.00005	<0.00005	<0.00005	<0.00005

E. coli, Total and Faecal (Thermotolerant) coliforms in Water (MPN) [AN735] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Date & Time Processed*	No unit	-	2025-11-11 17:48
E. coli	MPN/100mL	1	<1
Faecal Coliforms	MPN/100mL	1	**2**

Enterococci in Water [AN750] Tested: 11/11/2025

PARAMETER	UOM	LOR	BH204 WATER - 10/11/25 14:00 SE292522.003
Date & Time Processed*	No unit	-	2025-11-11 17:48
Enterococci*	MPN/100mL	1	**4**

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos /cm or µS/cm @ 25°C. For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Total Dissolved Salts can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. SGS use 0.6. Reference APHA 2510 B.
AN106	Salinity may be calculated in terms of NaCl from the sample conductivity. This assumes all soluble salts present, measured by the conductivity, are present as NaCl.
AN113	Total Dissolved Solids: A well-mixed filtered sample of known volume is evaporated to dryness at 180°C and the residue weighed. Approximate methods for correlating chemical analysis with dissolved solids are available. Reference APHA 2540 C.
AN113	The Total Dissolved Solids residue may also be ignited at 550 C and volatile TDS (Organic TDS) and non-volatile TDS (Inorganic) can be determined.
AN114	Total Suspended and Volatile Suspended Solids: The sample is homogenised by shaking and a known volume is filtered through a pre-weighed GF/C filter paper and washed well with deionised water. The filter paper is dried and reweighed. The TSS is the residue retained by the filter per unit volume of sample. Reference APHA 2540 D. Internal Reference AN114
AN119	Turbidity by Nepholometry: Small particles in a light beam scatter light at a range of angles. A turbidimeter measures this scatter and reports results compared to turbidity standards, in NTU. This procedure is not suitable for very dark coloured liquids or samples with high solids because light absorption causes artificially low light scatter and low turbidity. Reference APHA 2130B.
AN121	This method is used to calculation the balance of major Anions and Cations in water samples and converts major ion concentration to milliequivalents and then summed. Anions sum and Cation sum is calculated as a difference and expressed as a percentage.
AN135	Alkalinity (and forms of) by Titration: The sample is titrated with standard acid to pH 8.3 (P titre) and pH 4.5 (T titre) and permanent and/or total alkalinity calculated. The results are expressed as equivalents of calcium carbonate or recalculated as bicarbonate, carbonate and hydroxide. Reference APHA 2320. Internal Reference AN135
AN140	Acidity by Titration: The water sample is titrated with sodium hydroxide to designated pH end point. In a sample containing only carbon dioxide, bicarbonates and carbonates, titration to pH 8.3 at 25°C corresponds to stoichiometric neutralisation of carbonic acid to bicarbonate. Method reference APHA 2310 B.
AN176	Dissolved Oxygen: DO can also be measured directly using an oxygen permeable membrane electrode and meter. Under steady state conditions the current is directly proportional to the DO conc. DO can also be measured via Luminescent dissolved oxygen probes (LDO) which also operates using an oxygen permeable membrane with an oxygen sensitive luminescent dye making up the second probe layer. The presence of oxygen causes changes in the lifetime and intensity of luminescence, which are then quantified. Zero headspace is required for sample analysis, if headspace is observed report comment will be recorded. Reference APHA 4500-C, G & O.
AN190	TOC and DOC in Water: A homogenised micro portion of sample is injected into a heated reaction chamber packed with an oxidative catalyst that converts organic carbon to carbon dioxide. The CO2 is measured using a non-dispersive infrared detector. The process is fully automated in a commercially available analyser. If required a sugar value can be calculated from the TOC result. Reference APHA 5310 B.
AN190	Chemical oxygen demand can be calculated/estimated based on the O2/C relation as 2.67*NPOC (TOC). This is an estimate only and the factor will vary with sample matrix so results should be interpreted with caution.
AN240	Oxidation-Reduction Potential (Eh): Electrometric measurements are made by potentiometric determination of electron activity (or intensity) with an inert indicator electrode and a suitable reference electrode. At redox equilibrium, the potential difference between the two electrodes equals the redox potential of the system. This measurement is then corrected for the difference between the potential of the reference electrode and that of the standard hydrogen electrode.

AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO2, NO3 and SO4 are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B
AN277	Nitrite ions, when reacted with a reagent containing sulphanilamide and N-(1-naphthyl)-ethylenediamine dihydrochloride produce a highly coloured azo dye that is measured photometrically at 540nm.
AN278	Filterable Reactive Phosphorus by DA (determined on filtered sample): Orthophosphate reacts with ammonium molybdate (Mo VI) and potassium antimonyl tartrate (Sb III) in acid medium to form an antimony-phosphomolybdate complex. This complex is subsequently reduced with ascorbic acid to form a blue colour and the absorbance is read at 880 nm. The sensitivity of the automated method is 10-20 times that of the macro method. Reference APHA 4500-P F
AN279/AN293(Sydney)	The sample is digested with Sulphuric acid, K2SO4 and CuSO4. All forms of phosphorus are converted into orthophosphate. The digest is cooled and placed on the discrete analyser for colorimetric analysis.
AN281	An unfiltered water or soil sample is first digested in a block digestor with sulfuric acid, K2SO4 and CuSO4. The ammonia produced following digestion is then measured colourimetrically using the Discrete Analyser. A portion of the digested sample is buffered to an alkaline pH, and interfering cations are complexed. The ammonia then reacts with salicylate and hypochlorite to give a blue colour whose absorbance is measured at 660nm and compared with calibration standards. This is proportional to the concentration of Total Kjeldahl Nitrogen in the original sample.
AN291	Ammonia in solution reacts with hypochlorite ions from Sodium Dichloroisocyanuate, and salicylate in the presence of Sodium Nitroprusside to form indophenol blue and measured at 660 nm by Discrete Analyser.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN320	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .
AN320	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements . Reference APHA 3120 B.
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). Where F2 is corrected for Naphthalene, the VOC data for Naphthalene is used.
AN403	Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoveerable Hydrocarbons - Silica (TRH-Silica) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken . This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .

AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN703	A known volume of water is passed through a membrane of known pore size. The membrane is placed on a selective agar plate and incubated. The volume of sample filtered depends upon the expected count. Referenced to AS4276.5.
AN705	A known volume of water is passed through a membrane of known pore size. The membrane is placed on a selective agar plate and incubated. The volume of sample filtered depends upon the expected count. Referenced to AS/NZS4276.9 (ISO 7899-2:2000 MOD).
AN735	The Colilert matrix contains two nutrient indicators, ONPG (ortho-nitro-phenyl B-d- galactopyranoside) and MUG (4-methyl-umbelliferyl B-d-glucruonide). As coliforms grow, they use B-galactosidase to metabolise ONPG which causes yellow colouration of the matrix via the nitro-phenyl. E.coli possesses an additional enzyme, B-glucuronidase, which it uses to metabolise MUG and display florescence (caused by the 4 methyl-umbelliferyl). Incubation at 37°C.
AN735	Non target organisms are suppressed by a combination of high salts, detergents etc. present within the matrix . Faecal coliforms are thermotolerant, thus they can be enumerated by testing at 44.5°C.
AN750	A method for the simultaneous detection, enumeration and confirmation of Enterococci from waters using Defined Substrate Technology (DST) - Enterolert Test Kit.
Calculation	Free and Total Carbon Dioxide may be calculated using alkalinity forms only when the samples TDS is <500mg/L. If TDS is >500mg/L free or total carbon dioxide cannot be reported . APHA4500CO2 D.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR			
***	Indicates that both * and ** apply.		Sample listed, but not received.		
NAD	No Asbestos Detected.	NA	Not Applicable.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: https://www.sgs.com/en-au/industry/environmental-health-and-safety.

APPENDIX C

BOREHOLE PERMEABILITY TESTING

Rising Head Permeability Results

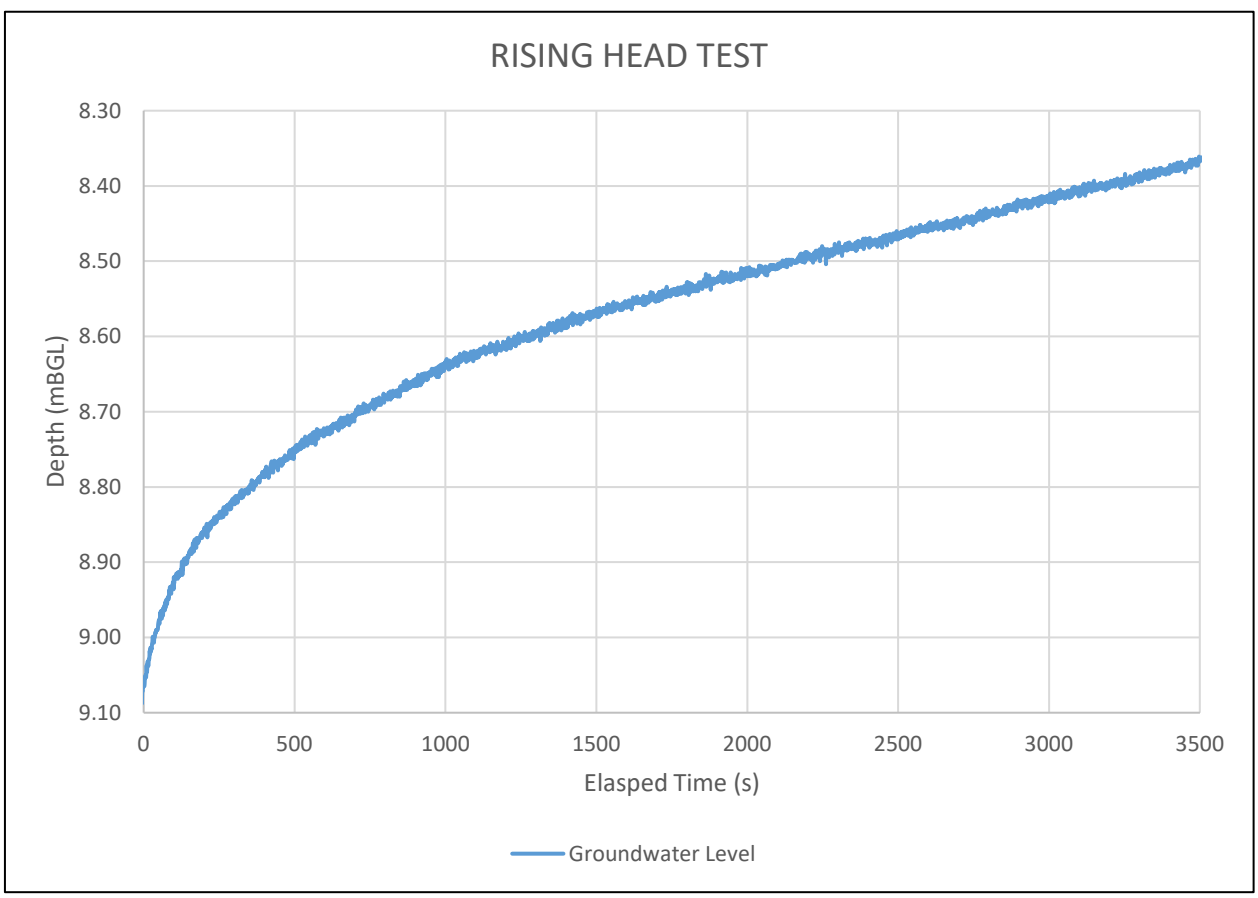
79/6 Bellambi Lane, Bellambi NSW 2518
P: 0405 843 933 | E: info@morrowgeo.com.au

Project Number	P3569 - Paddington
Address	142-160 Oxford St & 6 Shadeforth St
Borehole	BH202 Test 1
Monitoring Date	10/11/2025

Static water level (mBGL)	4.10
Internal Diameter (D) (m)	0.07
Length of Standpipe below Ground Level (m)	9.70
Height of Water above Ground Level (m)	0.00
Length of Standpipe above Ground Level (m)	0.00
Water level at start of test (mBGL)	4.10
Top of Response Zone (mBGL)	4.10
Bottom of Response Zone (mBGL)	9.70

Time (t1) (s)	232
Time (t2) (s)	3347
Initial Head (H1) at (t1)	8.85
Final Head (H2) at (t2)	8.38
Length of Response Zone *(L)*	5.60
Cross Sectional Area *(A)*	0.0038

Stratigraphy Description: Fill and residual soil overlying sandstone bedrock



Intake Factor (F) Case D $\dfrac{2\pi L}{\log_e[(L/D)+\sqrt{(1+(L/D)^2)}]}$ = $\dfrac{35.19}{5.08}$ = 6.93

Permeability (k) $\dfrac{A}{F\,(t2-t1)}\log_e\dfrac{H1}{H2}$ = 9.70E-09 m/s

Rising Head Test Method 1 (after Hvorslev)

Formulae for borehole permeability tests(21.4.6) BS5930 : 1981

Calculation by:	AB	Checked by:	AM	Date:	12/12/2025

Rising Head Permeability Results

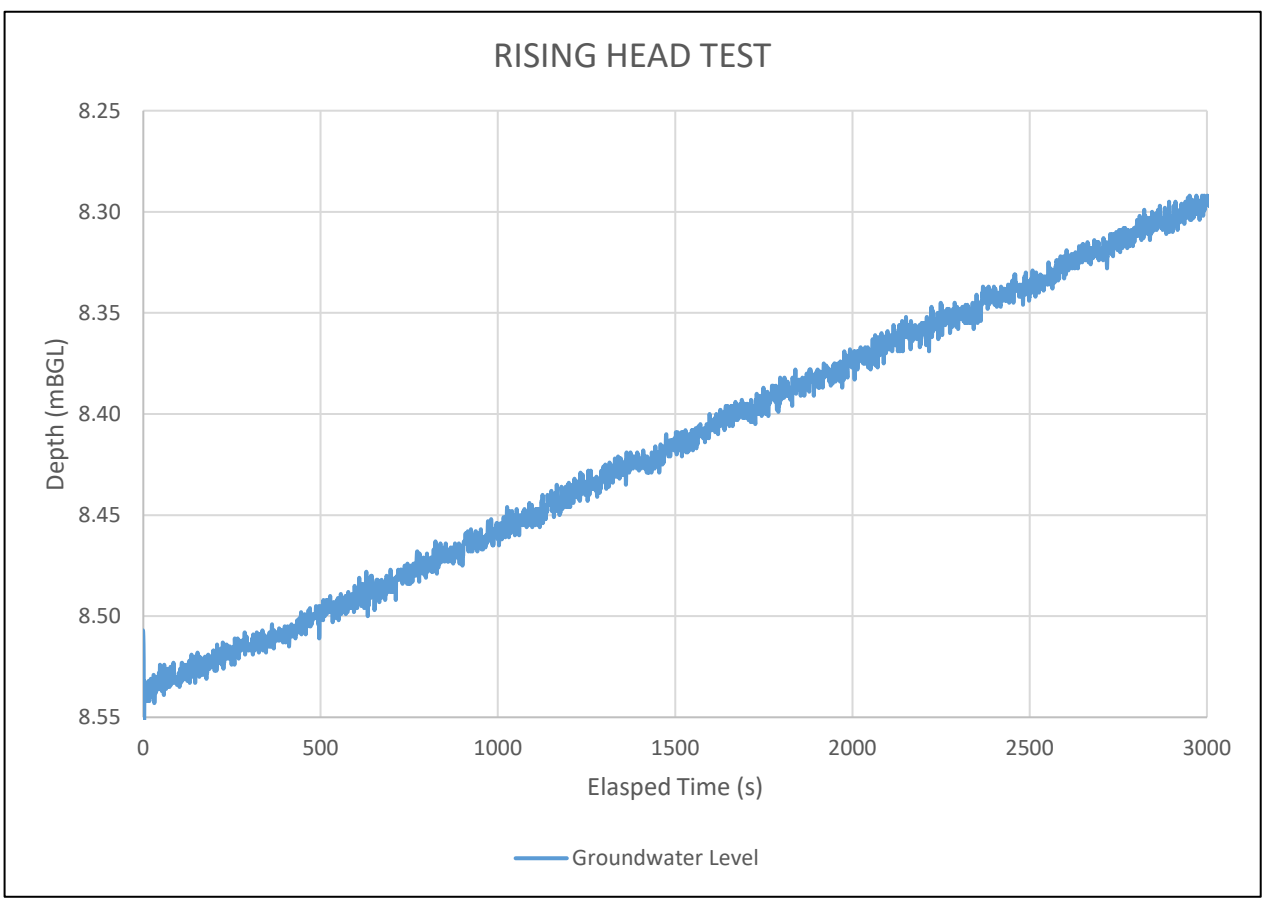
79/6 Bellambi Lane, Bellambi NSW 2518
P: 0405 843 933 | E: info@morrowgeo.com.au

Project Number	P3569 - Paddington
Address	142-160 Oxford St & 6 Shadeforth St
Borehole	BH202 Test 2
Monitoring Date	10/11/2025

Static water level (mBGL)	4.10
Internal Diameter (D) (m)	0.07
Length of Standpipe below Ground Level (m)	9.70
Height of Water above Ground Level (m)	0.00
Length of Standpipe above Ground Level (m)	0.00
Water level at start of test (mBGL)	4.10
Top of Response Zone (mBGL)	4.10
Bottom of Response Zone (mBGL)	9.70

Time (t1) (s)	52
Time (t2) (s)	2936
Initial Head (H1) at (t1)	8.54
Final Head (H2) at (t2)	8.31
Length of Response Zone *(L)*	5.60
Cross Sectional Area *(A)*	0.0038

Stratigraphy Description: Fill and residual soil overlying sandstone bedrock



Intake Factor (F) Case D $\dfrac{2\pi L}{\log_e[(L/D)+\sqrt{(1+(L/D)^2)}]}$ = $\dfrac{35.19}{5.08}$ = 6.93

Permeability (k) $\dfrac{A}{F\,(t2-t1)}\log_e\dfrac{H1}{H2}$ = 5.28E-09 m/s

Rising Head Test Method 1 (after Hvorslev)

Formulae for borehole permeability tests(21.4.6) BS5930 : 1981

Calculation by:	AB	Checked by:	AM	Date:	12/12/2025

Rising Head Permeability Results

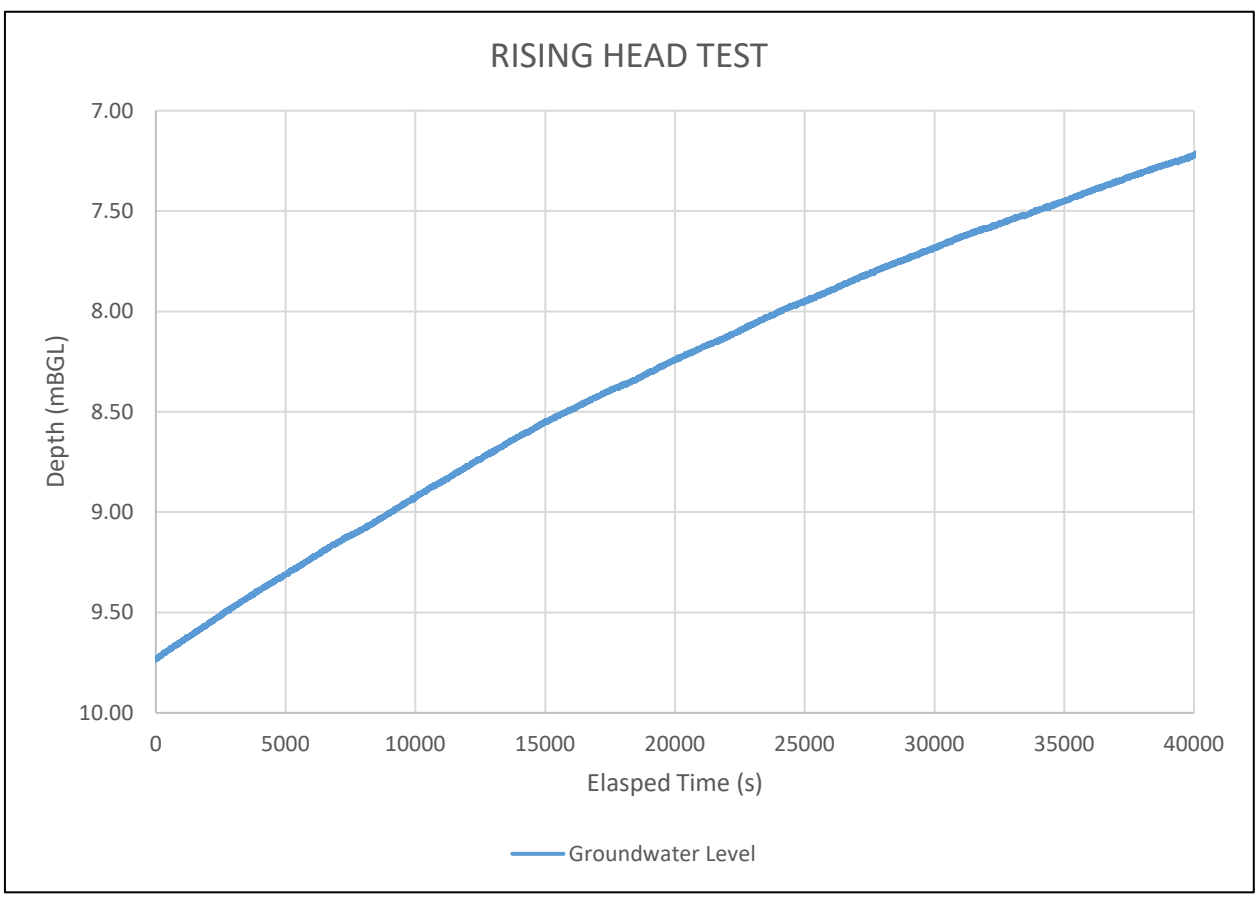
79/6 Bellambi Lane, Bellambi NSW 2518
P: 0405 843 933 | E: info@morrowgeo.com.au

Project Number	P3569 - Paddington
Address	142-160 Oxford St & 6 Shadeforth St
Borehole	BH202 Test 3
Monitoring Date	10/11/2025

Static water level (mBGL)	4.10
Internal Diameter (D) (m)	0.07
Length of Standpipe below Ground Level (m)	9.70
Height of Water above Ground Level (m)	0.00
Length of Standpipe above Ground Level (m)	0.00
Water level at start of test (mBGL)	4.10
Top of Response Zone (mBGL)	4.10
Bottom of Response Zone (mBGL)	9.70

Time (t1) (s)	400
Time (t2) (s)	39400
Initial Head (H1) at (t1)	9.70
Final Head (H2) at (t2)	7.25
Length of Response Zone *(L)*	5.60
Cross Sectional Area *(A)*	0.0038

Stratigraphy Description: Fill and residual soil overlying sandstone bedrock



Intake Factor (F) Case D $\dfrac{2\pi L}{\log_e[(L/D)+\sqrt{(1+(L/D)^2)}]}$ = $\dfrac{35.19}{5.08}$ = 6.93

Permeability (k) $\dfrac{A}{F\,(t2-t1)}\log_e\dfrac{H1}{H2}$ = 4.14E-09 m/s

Rising Head Test Method 1 (after Hvorslev)
Formulae for borehole permeability tests(21.4.6) BS5930 : 1981

Calculation by:	AB	Checked by:	AM	Date:	12/12/2025

Rising Head Permeability Results

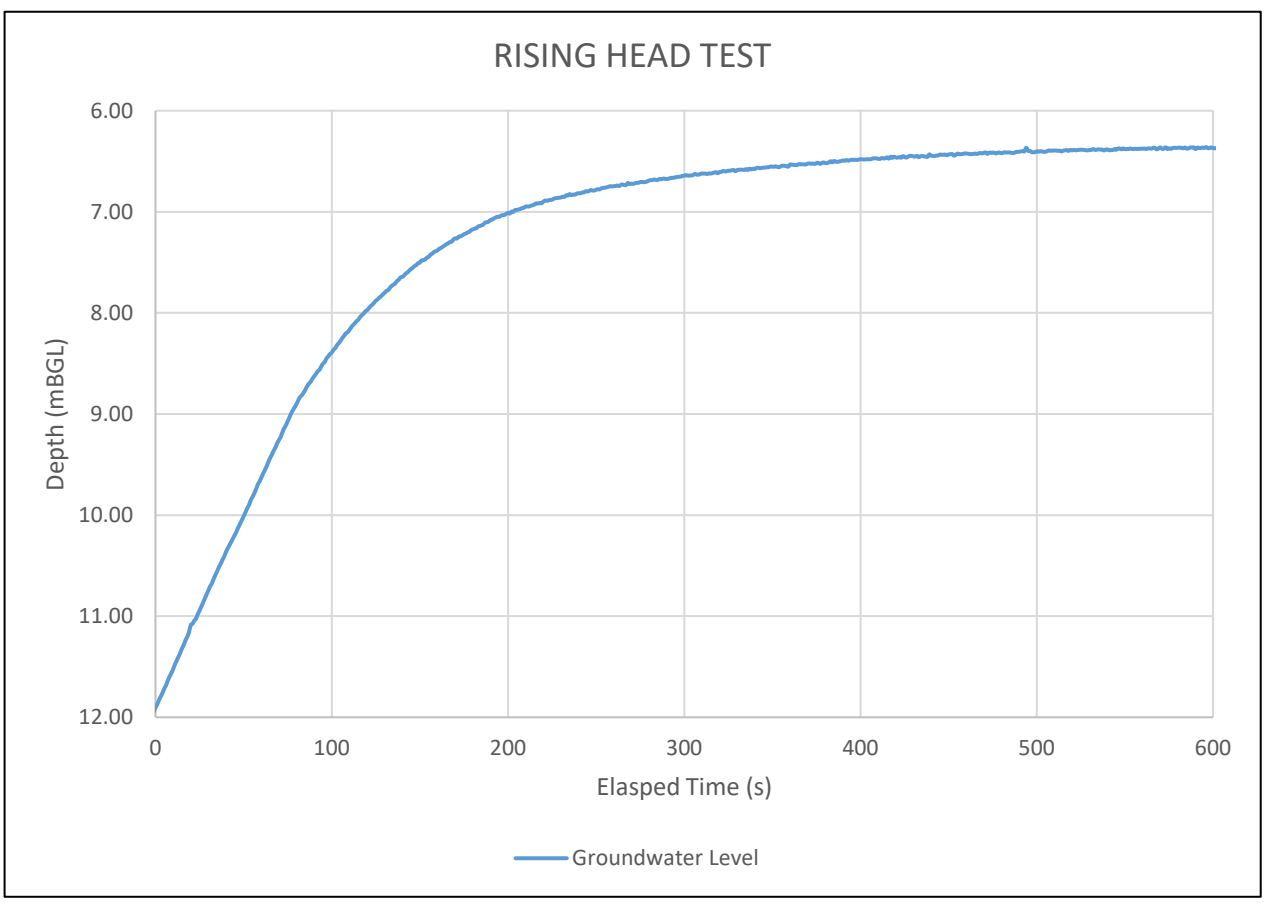
79/6 Bellambi Lane, Bellambi NSW 2518
P: 0405 843 933 | E: info@morrowgeo.com.au

Project Number	P3569 - Paddington
Address	142-160 Oxford St & 6 Shadeforth St
Borehole	BH203 Test 1
Monitoring Date	10/11/2025

Static water level (mBGL)	6.43
Internal Diameter (D) (m)	0.07
Length of Standpipe below Ground Level (m)	25.50
Height of Water above Ground Level (m)	0.00
Length of Standpipe above Ground Level (m)	0.00
Water level at start of test (mBGL)	6.43
Top of Response Zone (mBGL)	6.43
Bottom of Response Zone (mBGL)	25.50

Time (t1) (s)	4
Time (t2) (s)	152
Initial Head (H1) at (t1)	11.76
Final Head (H2) at (t2)	7.48
Length of Response Zone *(L)*	19.07
Cross Sectional Area *(A)*	0.0038

Stratigraphy Description: Fill and residual soil over sandstone bedrock



Intake Factor (F) Case D $\dfrac{2\pi L}{\log_e[(L/D)+\sqrt{(1+(L/D)^2)}]}$ = $\dfrac{119.82}{6.30}$ = 19.02

Permeability (k) $\dfrac{A}{F\,(t2-t1)}\log_e\dfrac{H1}{H2}$ = 6.19E-07 m/s

Rising Head Test Method 1 (after Hvorslev)

Formulae for borehole permeability tests(21.4.6) BS5930 : 1981

Calculation by:	AB	Checked by:	AM	Date:	25/02/2026

Rising Head Permeability Results

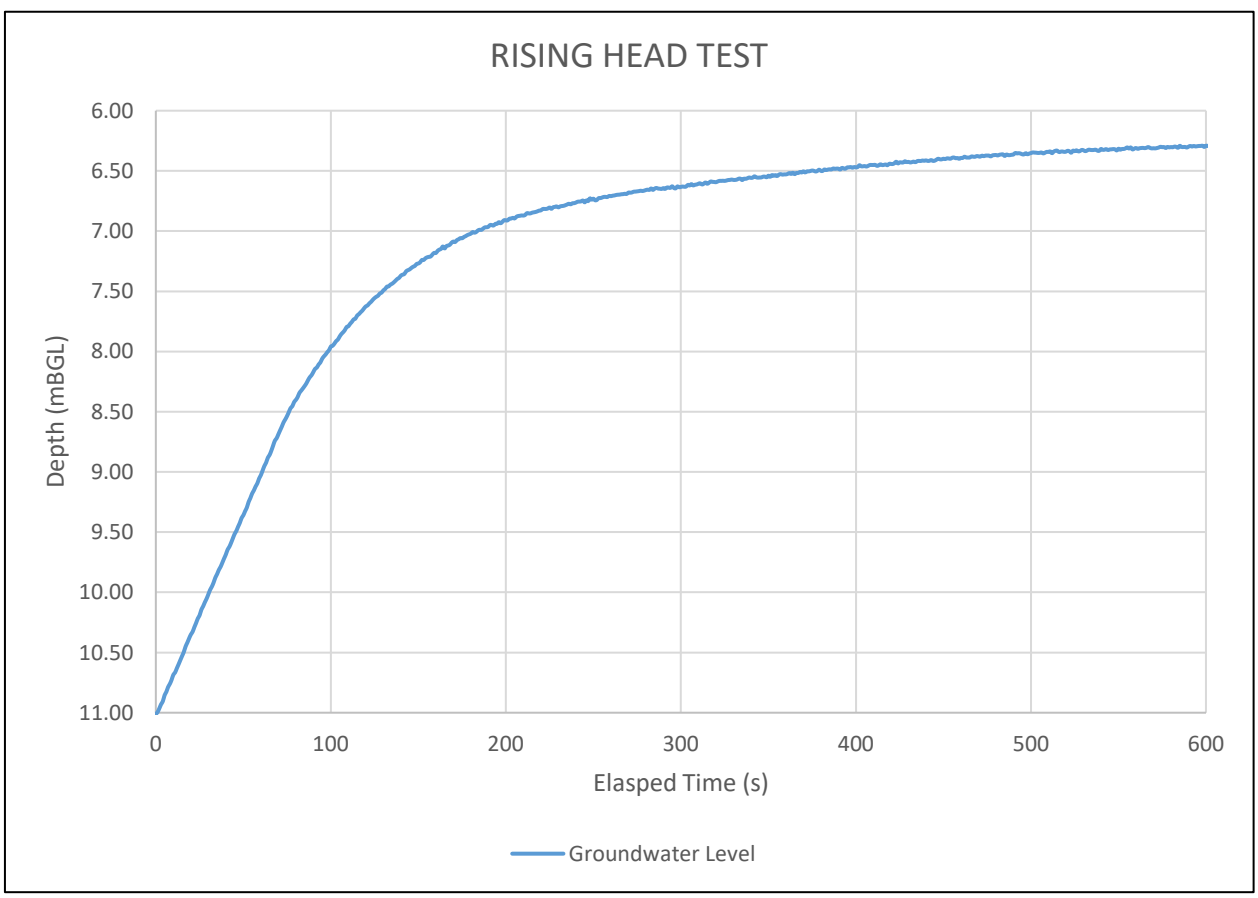
79/6 Bellambi Lane, Bellambi NSW 2518
P: 0405 843 933 | E: info@morrowgeo.com.au

Project Number	P3569 - Paddington
Address	142-160 Oxford St & 6 Shadeforth St
Borehole	BH203 Test 2
Monitoring Date	10/11/2025

Static water level (mBGL)	6.43
Internal Diameter (D) (m)	0.07
Length of Standpipe below Ground Level (m)	25.50
Height of Water above Ground Level (m)	0.00
Length of Standpipe above Ground Level (m)	0.00
Water level at start of test (mBGL)	6.43
Top of Response Zone (mBGL)	6.43
Bottom of Response Zone (mBGL)	25.50

Time (t1) (s)	4
Time (t2) (s)	150
Initial Head (H1) at (t1)	10.91
Final Head (H2) at (t2)	7.77
Length of Response Zone *(L)*	19.07
Cross Sectional Area *(A)*	0.0038

Stratigraphy Description: Fill and residual soil over sandstone bedrock



Intake Factor (F) Case D $\dfrac{2\pi L}{\log_e[(L/D)+\sqrt{(1+(L/D)^2)}]}$ = $\dfrac{119.82}{6.30}$ = 19.02

Permeability (k) $\dfrac{A}{F\,(t2-t1)}\log_e\dfrac{H1}{H2}$ = 4.70E-07 m/s

Rising Head Test Method 1 (after Hvorslev)

Formulae for borehole permeability tests(21.4.6) BS5930 : 1981

Calculation by:	AB	Checked by:	AM	Date:	25/02/2026

Rising Head Permeability Results

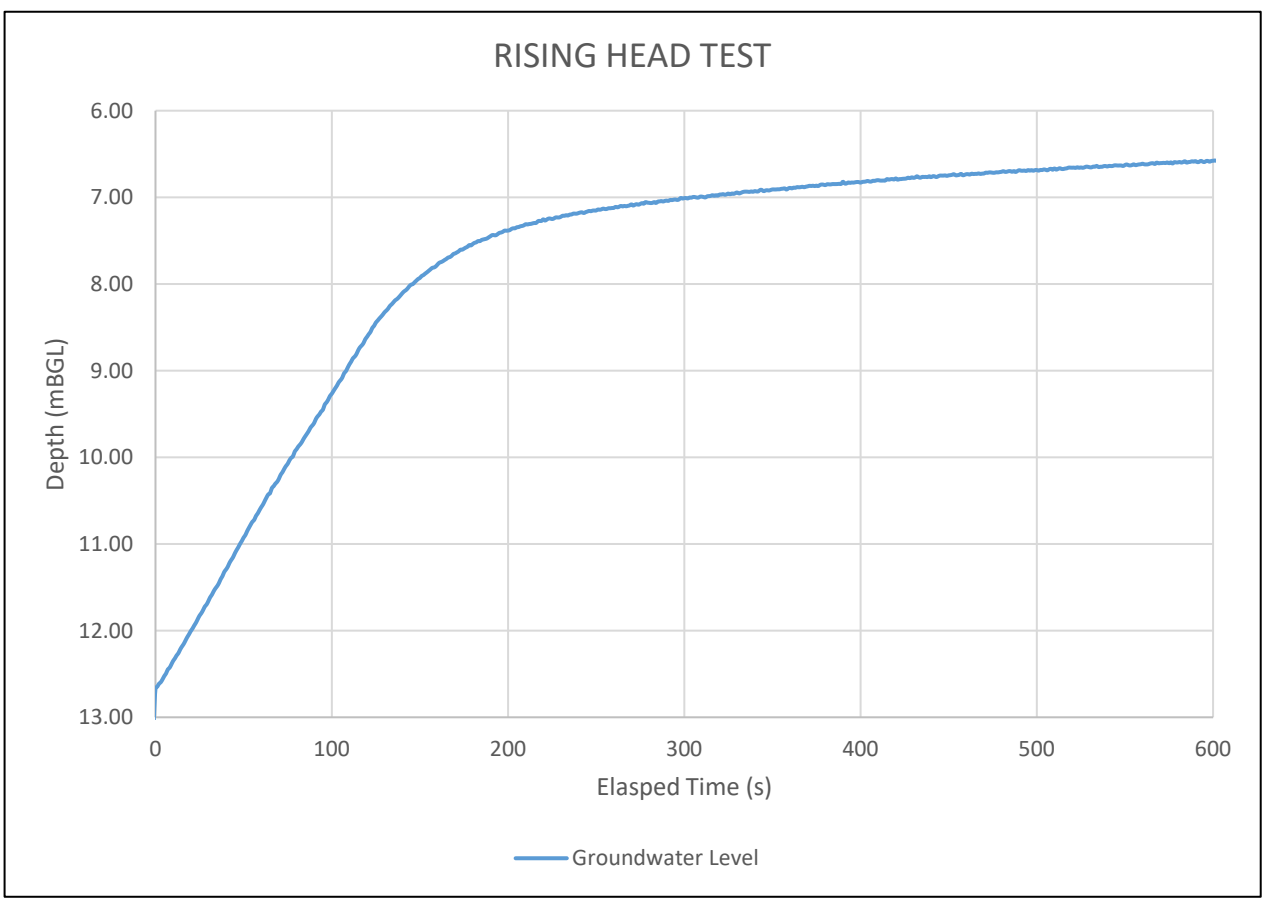
79/6 Bellambi Lane, Bellambi NSW 2518
P: 0405 843 933 | E: info@morrowgeo.com.au

Project Number	P3569 - Paddington
Address	142-160 Oxford St & 6 Shadeforth St
Borehole	BH203 Test 3
Monitoring Date	10/11/2025

Static water level (mBGL)	6.43
Internal Diameter (D) (m)	0.07
Length of Standpipe below Ground Level (m)	25.50
Height of Water above Ground Level (m)	0.00
Length of Standpipe above Ground Level (m)	0.00
Water level at start of test (mBGL)	6.43
Top of Response Zone (mBGL)	6.43
Bottom of Response Zone (mBGL)	25.50

Time (t1) (s)	4
Time (t2) (s)	135
Initial Head (H1) at (t1)	12.56
Final Head (H2) at (t2)	8.17
Length of Response Zone *(L)*	19.07
Cross Sectional Area *(A)*	0.0038

Stratigraphy Description: Fill and residual soil over sandstone bedrock



Intake Factor (F) Case D $\dfrac{2\pi L}{\log_e[(L/D)+\sqrt{(1+(L/D)^2)}]}$ = $\dfrac{119.82}{6.30}$ = 19.02

Permeability (k) $\dfrac{A}{F\,(t2-t1)}\log_e\dfrac{H1}{H2}$ = 6.64E-07 m/s

Rising Head Test Method 1 (after Hvorslev)

Formulae for borehole permeability tests(21.4.6) BS5930 : 1981

Calculation by:	AB	Checked by:	AM	Date:	25/02/2026

Rising Head Permeability Results

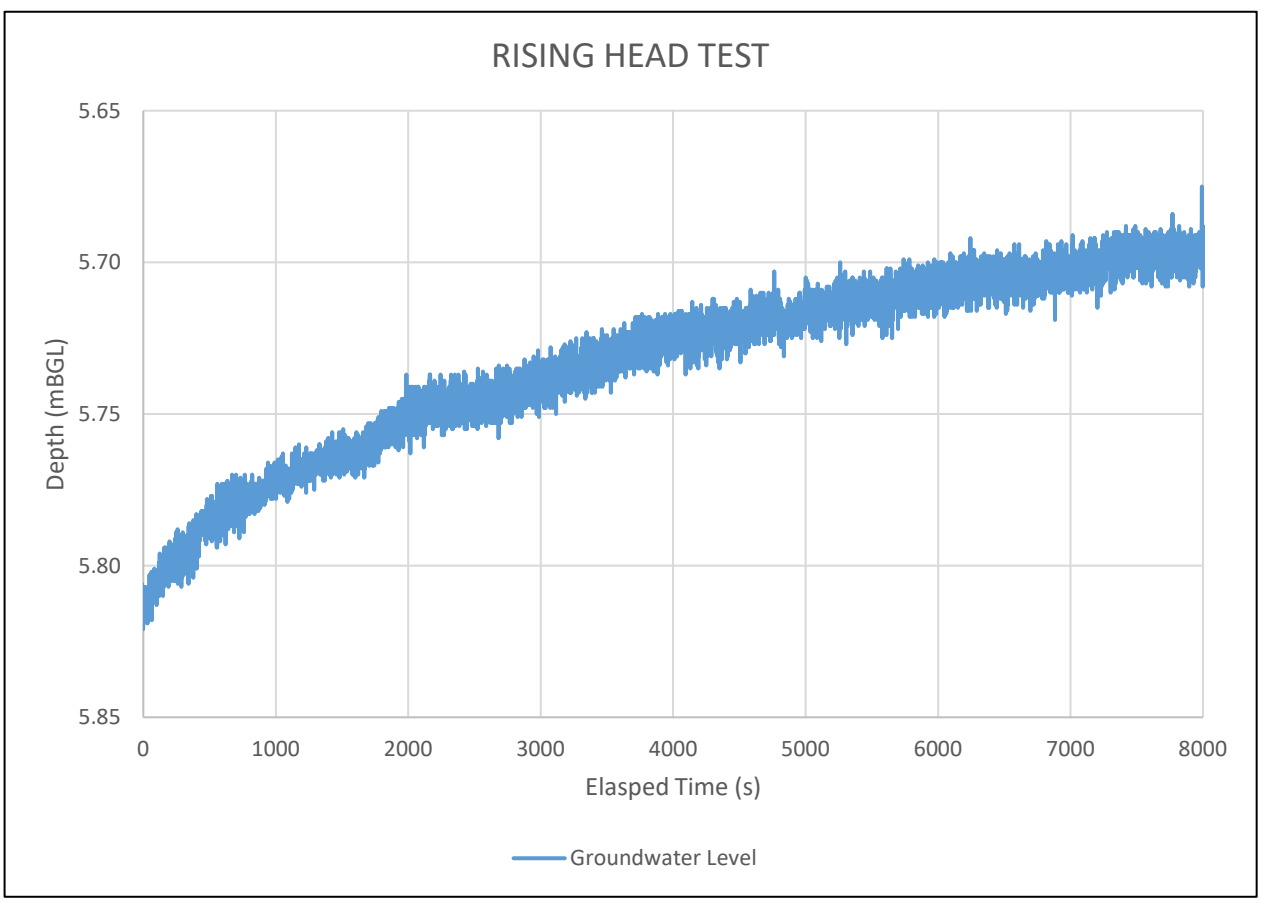
79/6 Bellambi Lane, Bellambi NSW 2518
P: 0405 843 933 | E: info@morrowgeo.com.au

Project Number	P3569 - Paddington
Address	142-160 Oxford St & 6 Shadforth St
Borehole	BH204 Test 1
Monitoring Date	10/11/2025

Static water level (mBGL)	4.80
Internal Diameter (D) (m)	0.07
Length of Standpipe below Ground Level (m)	15.13
Height of Water above Ground Level (m)	0.00
Length of Standpipe above Ground Level (m)	0.00
Water level at start of test (mBGL)	4.80
Top of Response Zone (mBGL)	4.80
Bottom of Response Zone (mBGL)	15.13

Time (t1) (s)	170
Time (t2) (s)	7000
Initial Head (H1) at (t1)	5.80
Final Head (H2) at (t2)	5.70
Length of Response Zone *(L)*	10.33
Cross Sectional Area *(A)*	0.0038

Stratigraphy Description: Fill and residual soil over sandstone bedrock



Intake Factor (F) Case D $\dfrac{2\pi L}{\log_e[(L/D)+\sqrt{(1+(L/D)^2)}]}$ = $\dfrac{64.91}{5.69}$ = 11.41

Permeability (k) $\dfrac{A}{F\,(t2-t1)}\log_e\dfrac{H1}{H2}$ = 8.59E-10 m/s

Rising Head Test Method 1 (after Hvorslev)

Formulae for borehole permeability tests(21.4.6) BS5930 : 1981

Calculation by:	AB	Checked by:	AM	Date:	25/02/2026

Rising Head Permeability Results

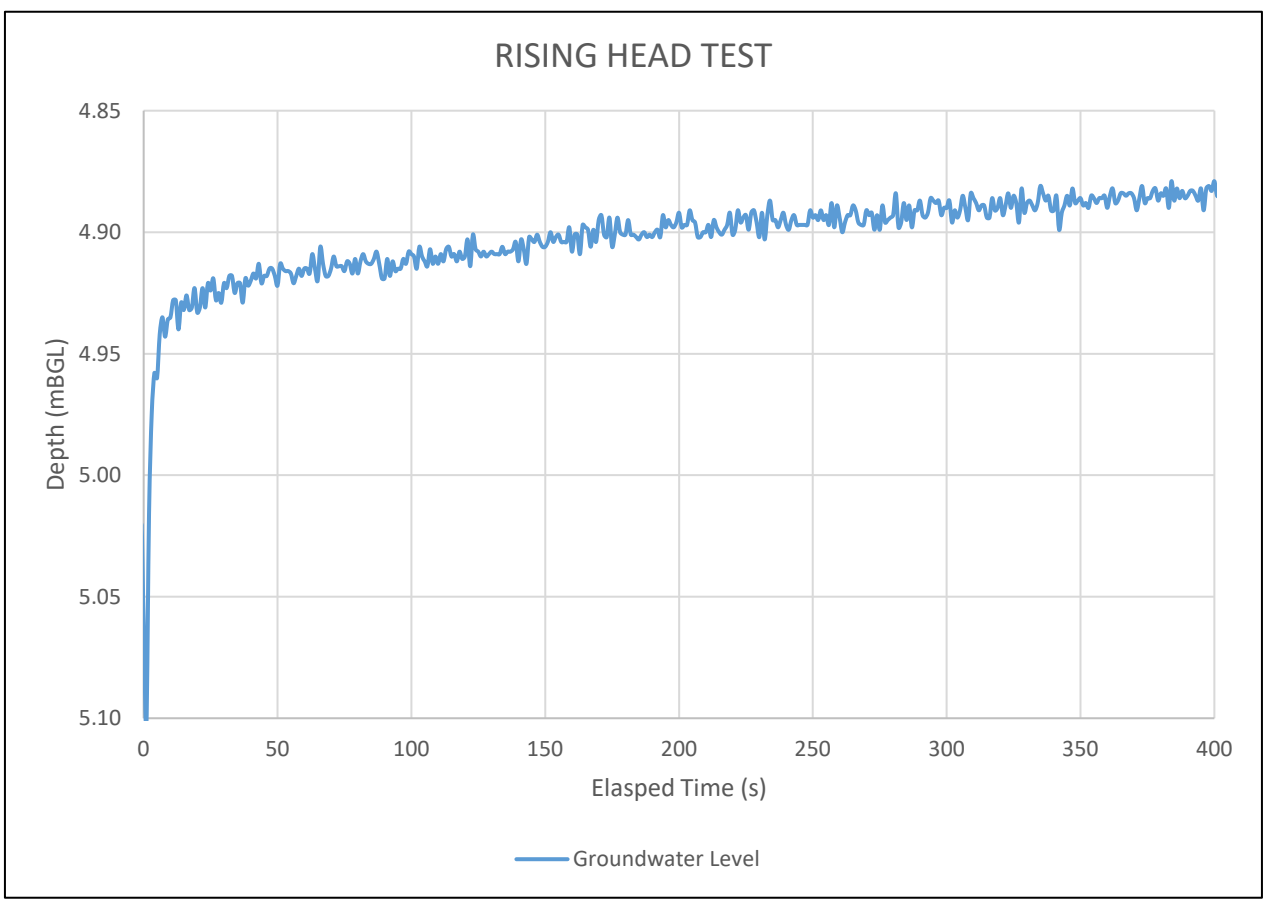
79/6 Bellambi Lane, Bellambi NSW 2518
P: 0405 843 933 | E: info@morrowgeo.com.au

Project Number	P3569 - Paddington
Address	142-160 Oxford St & 6 Shadeforth St
Borehole	BH204 Test 2
Monitoring Date	15/01/2026

Static water level (mBGL)	4.85
Internal Diameter (D) (m)	0.07
Length of Standpipe below Ground Level (m)	15.13
Height of Water above Ground Level (m)	0.00
Length of Standpipe above Ground Level (m)	0.00
Water level at start of test (mBGL)	4.85
Top of Response Zone (mBGL)	4.85
Bottom of Response Zone (mBGL)	15.13

Time (t1) (s)	17
Time (t2) (s)	394
Initial Head (H1) at (t1)	4.93
Final Head (H2) at (t2)	4.89
Length of Response Zone *(L)*	10.28
Cross Sectional Area *(A)*	0.0038

Stratigraphy Description: Fill and residual soil overlying sandstone bedrock



Intake Factor (F) Case D $\dfrac{2\pi L}{\log_e[(L/D)+\sqrt{(1+(L/D)^2)}]}$ = $\dfrac{64.59}{5.68}$ = 11.37

Permeability (k) $\dfrac{A}{F\,(t2-t1)}\log_e\dfrac{H1}{H2}$ = 8.23E-09 m/s

Rising Head Test Method 1 (after Hvorslev)

Formulae for borehole permeability tests(21.4.6) BS5930 : 1981

Calculation by:	AB	Checked by:	AM	Date:	25/02/2026

Rising Head Permeability Results

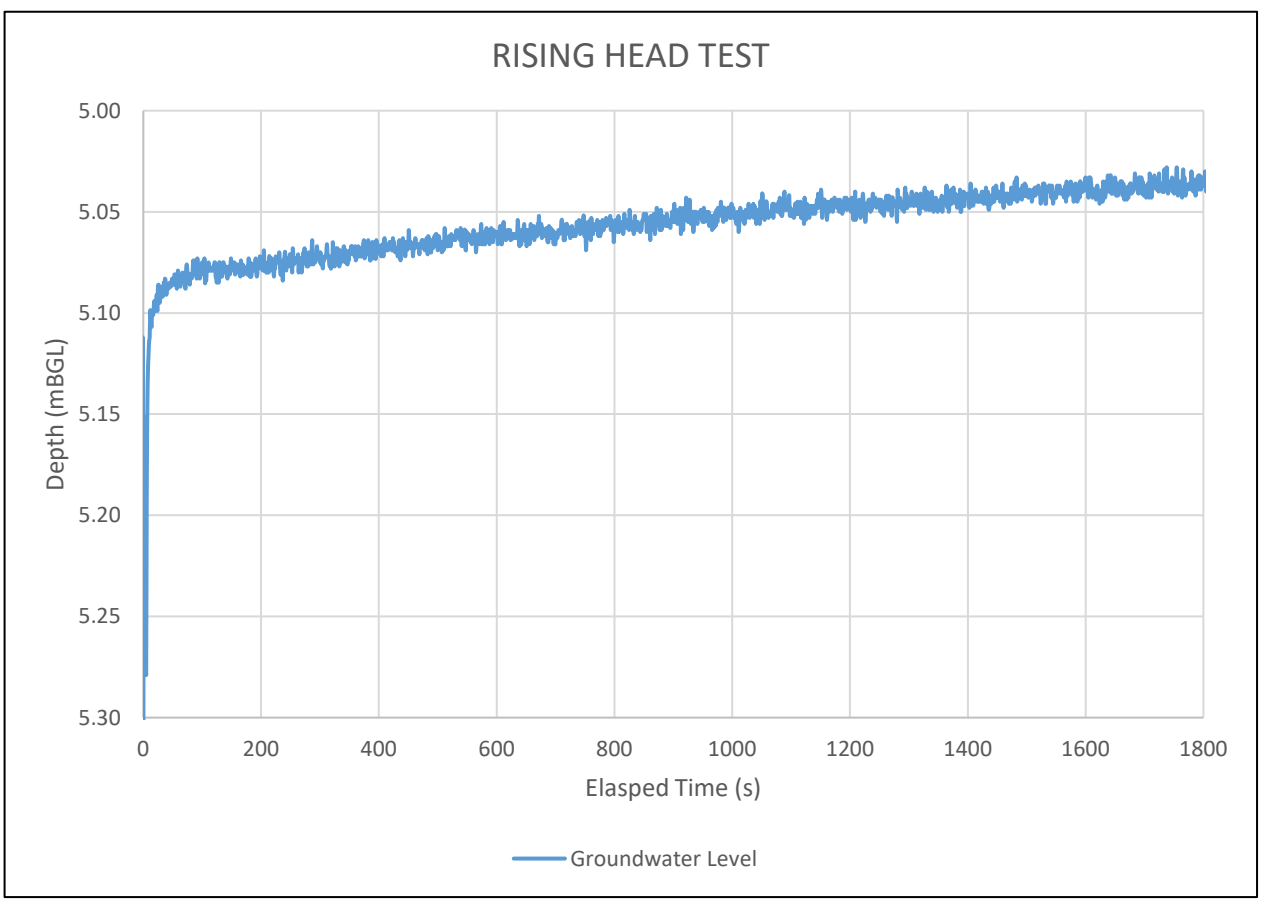
79/6 Bellambi Lane, Bellambi NSW 2518
P: 0405 843 933 | E: info@morrowgeo.com.au

Project Number	P3569 - Paddington
Address	142-160 Oxford St & 6 Shadeforth St
Borehole	BH204 Test 3
Monitoring Date	30/01/2026

Static water level (mBGL)	4.61
Internal Diameter (D) (m)	0.07
Length of Standpipe below Ground Level (m)	15.13
Height of Water above Ground Level (m)	0.00
Length of Standpipe above Ground Level (m)	0.00
Water level at start of test (mBGL)	4.61
Top of Response Zone (mBGL)	4.61
Bottom of Response Zone (mBGL)	15.13

Time (t1) (s)	76.8
Time (t2) (s)	1788.8
Initial Head (H1) at (t1)	5.08
Final Head (H2) at (t2)	5.03
Length of Response Zone *(L)*	10.52
Cross Sectional Area *(A)*	0.0038

Stratigraphy Description: Fill and residual soil over sandstone bedrock



Intake Factor (F) Case D $\dfrac{2\pi L}{\log_e[(L/D)+\sqrt{(1+(L/D)^2)}]}$ = $\dfrac{66.10}{5.71}$ = 11.58

Permeability (k) $\dfrac{A}{F\,(t2-t1)}\log_e\dfrac{H1}{H2}$ = 1.92E-09 m/s

Rising Head Test Method 1 (after Hvorslev)

Formulae for borehole permeability tests(21.4.6) BS5930 : 1981

Calculation by:	AB	Checked by:	AM	Date:	25/02/2026

Rising Head Permeability Results

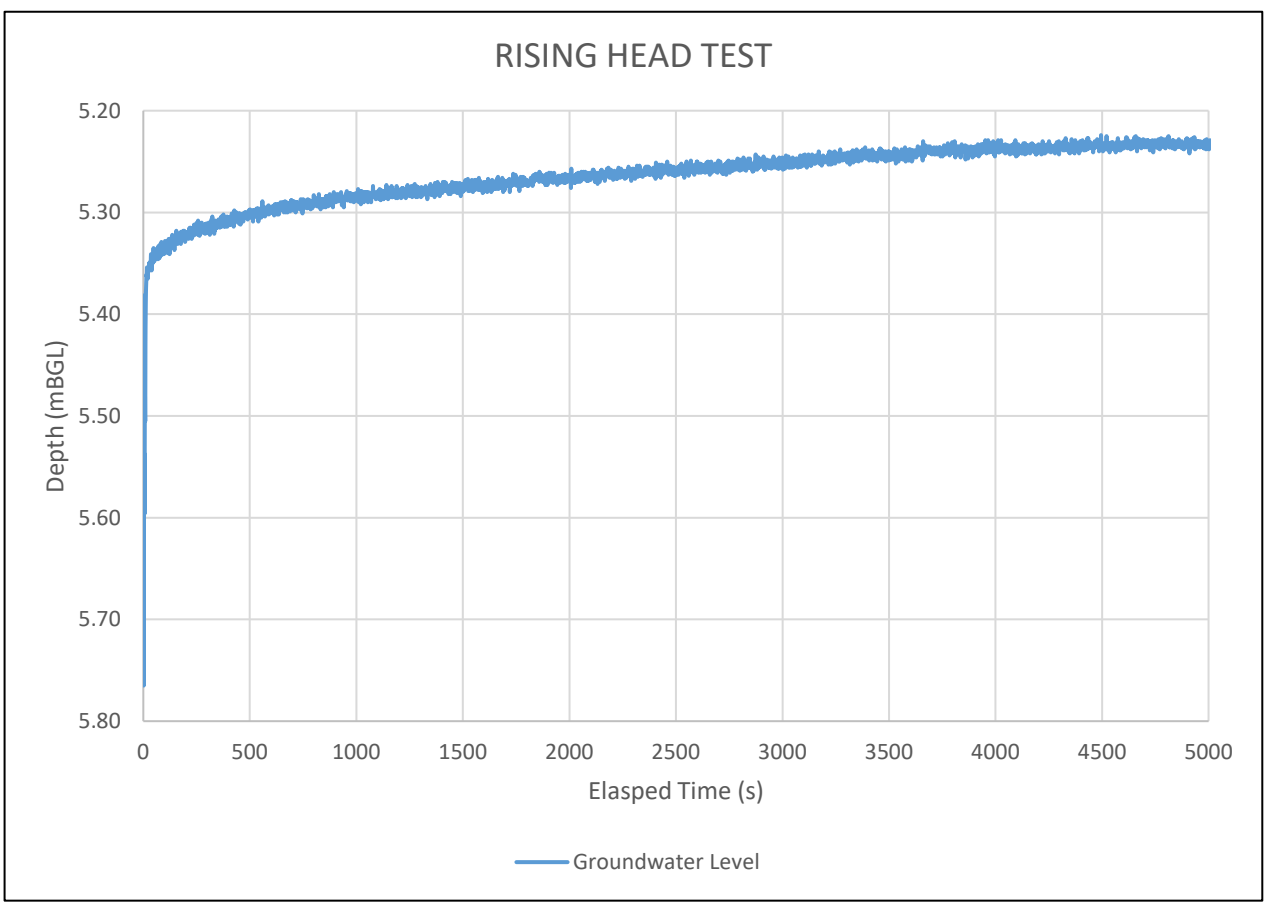
79/6 Bellambi Lane, Bellambi NSW 2518
P: 0405 843 933 | E: info@morrowgeo.com.au

Project Number	P3569 - Paddington
Address	142-160 Oxford St & 6 Shadeforth St
Borehole	BH204 Test 4
Monitoring Date	30/01/2026

Static water level (mBGL)	4.61
Internal Diameter (D) (m)	0.07
Length of Standpipe below Ground Level (m)	15.13
Height of Water above Ground Level (m)	0.00
Length of Standpipe above Ground Level (m)	0.00
Water level at start of test (mBGL)	4.61
Top of Response Zone (mBGL)	4.61
Bottom of Response Zone (mBGL)	15.13

Time (t1) (s)	166
Time (t2) (s)	4936
Initial Head (H1) at (t1)	5.33
Final Head (H2) at (t2)	5.24
Length of Response Zone *(L)*	10.52
Cross Sectional Area *(A)*	0.0038

Stratigraphy Description: Fill and residual soil over sandstone bedrock



Intake Factor (F) Case D $\dfrac{2\pi L}{\log_e[(L/D)+\sqrt{(1+(L/D)^2)}]}$ = $\dfrac{66.10}{5.71}$ = 11.58

Permeability (k) $\dfrac{A}{F\,(t2-t1)}\log_e\dfrac{H1}{H2}$ = 1.21E-09 m/s

Rising Head Test Method 1 (after Hvorslev)

Formulae for borehole permeability tests(21.4.6) BS5930 : 1981

Calculation by: AB Checked by: AM Date: 25/02/2026

APPENDIX D

IMPORTANT INFORMATION

This Document has been provided by Morrow Geotechnics Pty Ltd subject to the following limitations:

This Document has been prepared for the particular purpose outlined in Morrow Geotechnics' proposal and no responsibility is accepted for the use of this Document, in whole or in part, in other contexts or for any other purpose.

The scope and the period of Morrow Geotechnics' Services are as described in Morrow Geotechnics' proposal and are subject to restrictions and limitations. Morrow Geotechnics did not perform a complete assessment of all possible conditions or circumstances that may exist at the site referenced in the Document. The scope of services may have been limited by such factors as time, budget, site access or other site conditions. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Morrow Geotechnics in regards to it. Any advice given within this document is limited to geotechnical considerations only. Other constraints particular to the project, including but not limited to architectural, environment, heritage and planning matters may apply and should be assessed independently of this advice.

Conditions may exist which were undetectable given the limited nature of the enquiry Morrow Geotechnics was retained to undertake with respect to the site. Variations in conditions may occur between investigatory locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account in the Document. Accordingly, additional studies and actions may be required. No geotechnical investigation can provide a full understanding of all possible subsurface details and anomalies at a site.

In addition, it is recognised that the passage of time affects the information and assessment provided in this Document. Morrow Geotechnics' opinions are based upon information that existed at the time of the production of the Document. It is understood that the Services provided allowed Morrow Geotechnics to form no more than an opinion of the actual conditions of the site at the time the site was visited and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.

Any assessments made in this Document are based on the conditions indicated from published sources and the investigation described. No warranty is included, either express or implied, that the actual conditions will conform exactly to the assessments contained in this Document.

Where data supplied by the client or other external sources, including previous site investigation data, have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Morrow Geotechnics for incomplete or inaccurate data supplied by others.

Where ground conditions encountered at the site differ significantly from those anticipated in the report, either due to natural variability of subsurface conditions or construction activities, it is a condition of the report that Morrow Geotechnics be notified of any variations and be provided with an opportunity to review the recommendations of this report.

This Document is provided for sole use by the Client and is confidential to it and its professional advisers. No responsibility whatsoever for the contents of this Document will be accepted to any person other than the Client. Any use which a third party makes of this Document, or any reliance on or decisions to be made based on it, is the responsibility of such third parties. Morrow Geotechnics accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this Document.