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12 September 2026

# NALU

## 122 Marine Parade, Miami Beach

# ACID SULPHATE MANAGEMENT PLAN

Eastview

Job No. GOL2026-0104AC | Version 0



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## Version Control

| Document version information | |
|---|---|
| **Job number** | GOL2026-0104AC |
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## Review and Update History

| Revision | Date | Comments |
|---|---|---|
| 0 | 3/09/2026 | Initial Submission |

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# 1.0 INTRODUCTION

CMW Geosciences (CMW) was engaged by Eastview to carry out a geotechnical investigation of a multi-storey development site located at 122 Marine Parade, Miami Beach.

The scope of work and associated terms and conditions of our engagement were detailed in our services proposal letter referenced GOL2025-0134AA Rev1 dated 23 September 2025.

The purpose of this acid sulphate soil management plan (ASSMP) is to provide recommendations with respect to the geotechnical aspects of the proposed development. Site location is illustrated in Figure 1 below.

## 1.1 Site Description

The site of the proposed development is located at 122 Marine Parade, Miami Beach. The site is bound by residential properties to the north and south, vacant land that forms a steep hill rising to Magic Mountain to the west and Marine Parade to the east.

At the time of our investigation, the site was occupied by an existing double storey unit complex with a concrete driveway and carparking areas. Vegetation comprised of small, grassed areas as well as some trees and shrubs at the road frontage to the site. The existing buildings have subsequently been demolished. The topography of the site is practically flat.




Figure 1: Aerial image showing the existing site and surrounding infrastructure

# 2.0 PROPOSED DEVELOPMENT

It is understood that an approximately 7,284m$^2$ residential development comprising 5 floors, a roof terrace and a single level basement is proposed within the site boundary. An approximate footprint of the proposed site plan is shown in Figure 2.



Figure 2: Plan view of proposed development

# 3.0 FIELD INVESTIGATION

## 3.1 Previous Investigations

The site was previously investigated by Pacific Geotech as reported in the following:

- PG-12869, 2024-12-10, GR VER 4, dated 24 April 2025.

## 3.2 CMW Geotechnical Investigation

Fieldwork was carried out under the full-time supervision of CMW Geosciences in general accordance with AS1726-2017 “Geotechnical Site Investigations”. The scope of fieldwork undertaken included:

- Desktop study to review geological conditions of the site, relevant groundwater data and previous geotechnical investigations;
- Drill six (6) boreholes to a target depth of 15m below ground level or upon recovery of 5m of rock. The boreholes were drilled using a combination of track and truck mounted drilling rigs under the supervision of a CMW Geotechnical Engineer. Drilling in soils was undertaken using augering and conventional rotary wash boring. Standard Penetration Testing (SPT) or U50 undisturbed tubes would be undertaken at

typically 1.5m intervals throughout the soil profile. NMLC diamond coring was undertaken within rock strength materials;

- Installation of two (2) standpipe piezometers for accurate measurement of groundwater levels;
- Samples were collected from the borehole for laboratory testing to inform the durability classification and acid sulfate soil risk for the site.
- Information was collated into a concise geotechnical report outlining the scope of work completed, the ground conditions encountered, site classification, shallow and deep foundation design parameters, groundwater comments and geohazards.

The investigation locations are shown in the site investigation plan presented in Appendix A. Engineering borehole logs describing the subsurface materials encountered are presented in Appendix B.

The investigation locations were recorded using a hand-held GPS to the inherent accuracy of the unit. Table 1 summarises the details for the borehole(s) undertaken.

Table 1: Summary of Investigation Locations

| Test ID | Easting | Northing | Elevation (mAHD) | Termination Depth (mbgl) | Groundwater Level (mbgl) |
|---|---|---|---|---|---|
| CMW-BH01 | 543468.214 | 6895841.499 | 4.27 | 14.00 | 3.80 |
| CMW-BH02 | 543438.420 | 6895867.864 | 4.16 | 12.00 | 3.30 |
| CMW-BH03 | 543384.758 | 6895819.986 | 4.33 | 6.00 | 3.50 |
| CMW-BH04 | 543421.529 | 6895791.491 | 4.20 | 10.40 | 3.30 |
| CMW-BH05 | 543419.011 | 6895814.974 | 4.41 | 10.90 | 3.30 |
| CMW-BH06 | 543427.266 | 6895837.374 | 4.50 | 10.50 | 3.80 |

Freestanding groundwater was encountered during auger drilling at all boreholes. BH01 and BH02 were converted to a standpipe piezometer with a slotted screen. The groundwater well was purged of water introduced during the drilling process was recharging to a standing level of 3.5 metres below ground level after the well was purged.

Table 2: Summary of Groundwater Monitoring Wells

| Location ID | Screen Top Depth (RL m AHD) | Screen Toe Depth (RL m AHD) | Screen Length (m) |
|---|---|---|---|
| CMW-BH01 | 2.272 | -0.728 | 3.0 |
| CMW-BH02 | 1.155 | -1.845 | 3.0 |
| Notes: Boreholes were backfilled with a sand filter around the screen interval with a bentonite plug to a minimum extension cover of 1m past screening depth. The borehole was then grouted to surface. | | | |

# 4.0 GROUND MODEL

## 4.1 Regional Geology

Published geological maps for the area, accessed via QGlobe, depict the area as being underlain by Quaternary aged alluvial units with the Neranleigh-Fernvale rock formation likely underlying the surface alluvial units. Figure 2 presents the surrounding geology of the area, with the approximate site location shown in red. It is likely that the existing site consists of moderately well-sorted, fine to coarse-grained quartzose to shelly sand and some gravel; beach ridges and cheniers as indicative of the $Q_{hcb}$ geological unit.




Figure 3: Extract from QGlobe showing the anticipated geotechnical units at 122 Marine Parade

## 4.2 Subsurface Conditions

The subsurface conditions encountered at each borehole is described in detail on the borehole log presented in Appendix B. The ground conditions encountered and inferred from the investigation were generally consistent with published geology for the area and CMW experience on nearby sites and can be generalised as per the geotechnical units summarised in Table 3.

Table 3: Summary of Encountered Subsurface Conditions

| Unit | Description | Nature | Elevation Range of Layer (mAHD) (Approximate) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | BH01 | BH02 | BH03 | BH04 | BH05 | BH06 |
| 1 | SAND, fine to medium grained, pale brown, loose to medium dense | Dune Sands | 4.2 to -0.7 | 4.2 to 0.1 | - | 4.2 to -1.3 | 4.2 to -1.1 | 4.5 to -1.0 |
| 2 | SAND, fine to coarse grained, pale yellow, some interbedded layers of gravel, dense to very dense | Indurated Sand | -0.7 to -4.7 | 0.1 to -2.8 | | -1.3 to -2.3 | -1.1 to -1.4 | -1.0 to -1.5 |
| 3A | METASILTSTONE, fine grained, very low to low strength | Neranleigh -Fernvale | - | - | 4.0 to 3.3 | - | -4.4 to -5.6 | -1.5 to -6.5 |
| 3B | METASILTSTONE, fine grained, medium strength | | -4.7 to -9.7* | -2.8 to -7.8* | 3.3 to -1.7* | -2.3 to -4.4 | -1.4 to -4.4 | |

| Unit | Description | Nature | Elevation Range of Layer (mAHD) (Approximate) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | BH01 | BH02 | BH03 | BH04 | BH05 | BH06 |
| 3C | METASILTSTONE, fine grained, high to very high strength | | - | - | - | -4.4 to -6.6* | -5.6 to -6.5* | - |
| Notes: * termination depth | | | | | | | | |

## 4.3 Acid Sulfate Soil Risk Mapping

A desktop study of the publicly available Australian National Soil Information System (ANSIS) was conducted across the extent of the site. This dataset depicts a national map of available ASS mapping and ASS qualification inferred from surrogate datasets. ASS mapping is classified with a nationally consistent legend that includes risk assessment criteria and correlations between Australian and International Soil Classification Systems.

From this risk mapping it is understood that the site area is primarily encapsulated into the B3 grouping, details of which are highlighted in Table 4 below. This risk matrix shows a low probability of acid sulfate soils with a low confidence level.

Table 4: Summary Legend of ANSIS Acid Sulfate Soil Map

| Map symbol | ASS Probability | Confidence Level |
|---|---|---|
| **B3** | Low Probability | Low Confidence |

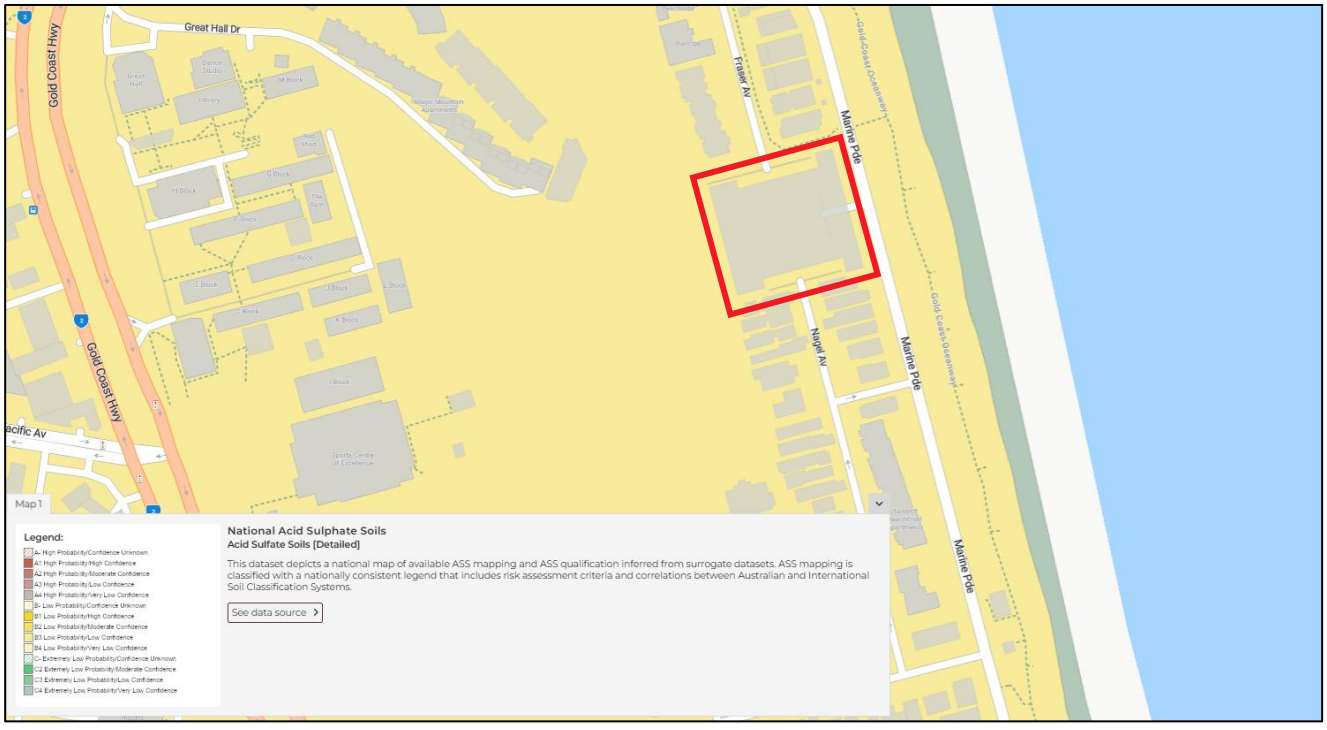



Figure 4: Acid Sulfate Risk Map (source: ANSIS)

# 5.0 ENVIRONMETAL CONSIDERATIONS

This section provides a brief overview of environment considerations related to ASS associated with excavations for the proposed development.

## 5.1 Acid Sulfate Soils

Preliminary field screening and chemical laboratory tests for ASS were carried out with reference to the QASSIT Guidelines, the Soil Management Guidelines and the Laboratory Methods Guidelines 2004. In total 10 samples were selected from the six (6) boreholes at approximately 0.5m intervals for the initial 3.0m depth, increasing to 0.5m intervals until rock was encountered. These samples were screened by measurement of pH after the addition of distilled water ($pH_F$) and hydrogen peroxide ($pH_{FOX}$).

The results of the borehole investigation indicate fine to medium grained sand overlaying extremely to highly weathered greywacke. The recorded field pH values ($pH_F$) indicate that the soil encountered to the exploration depth ranged from slightly acidic to slightly alkaline, with generally low reaction to hydrogen peroxide ($pH_{FOX}$).

The criteria on which the results of screening tests ($pH_F$ & $pH_{FOX}$) were assessed as indicative of actual acid sulfate soils (AASS) or potential acid sulfate soils (PASS) were based on the QASSIT guidelines as follows:

- $pH_F$ <4 indicates oxidation has occurred in the past and that AASS is present.
- $pH_{FOX}$ <3, plus a $pH_{FOX}$ reading at least one pH unit below $pH_F$, plus a strong reaction with peroxide, strongly indicates the presence of PASS.

The above threshold is for greater than 1,000 tonnes of soils to be disturbed by excavation. The actual volume to be excavated is not known, but it is expected to be in excess of 1,000 tonnes.

A summary table of the above testing scope is provided below in addition to the laboratory testing results provided in Appendix A. A summary table of field screening of ASS ($pH_F$ & $pH_{FOX}$) are summarized in Table 5.

Table 5: Acid Sulfate Summary Table

| Depth (m BGL) | Sample Test ID | Sample Description | Field Screening Test | | | |
|---|---|---|---|---|---|---|
| | | | $pH_F$ | $pH_{FOX}$ | ΔpH | Reaction Rating |
| **Borehole 5 – RL 4.41 m** | | | | | | |
| 0.5 | B25-Oc0047649 | SAND | 6.4 | 3.5 | 2.9 | 2.0 |
| 1.0 | B25-Oc0047650 | SAND | 6.5 | 4.0 | 2.5 | 2.0 |
| 2.0 | B25-Oc0047651 | SAND | 6.3 | 3.6 | 2.7 | 4.0 |
| 2.5 | B25-Oc0047652 | SAND | 6.6 | 4.0 | 2.6 | 2.0 |
| 3.0 | B25-Oc0047653 | SAND | 6.7 | 4.1 | 2.6 | 3.0 |
| 3.5 | B25-Oc0047654 | SAND | 6.9 | 4.7 | 2.2 | 3.0 |
| **Borehole 4 – RL 4.20 m** | | | | | | |
| 0.5 | B25-Oc0047655 | SAND | 7.4 | 4.9 | 2.5 | 4.0 |
| 1.0 | B25-Oc0047656 | SAND | 7.4 | 5.5 | 1.9 | 3.0 |
| 2.0 | B25-Oc0047657 | SAND | 7.2 | 5.4 | 1.8 | 3.0 |
| 2.5 | B25-Oc0047658 | SAND | 7.2 | 5.4 | 1.8 | 3.0 |

## 5.2 Chromium Suite Testing

The action criterion from the Chromium Suite of tests which triggers a requirement of ASS disturbance to be managed was derived from the Soil Management Guidelines and the Laboratory Methods Guidelines 2004 as follows:

- Net acidity = ($S_{cr}$ + TAA + NASS – ANC/Fineness Factor) of greater than or equal to 0.03%S for sand and clay soils.
    - Scr = Chromium Reducible Sulfur
    - TAA = Titratable actual acidity
    - NASS = Net Acid Soluble Sulfur
    - ANC = Acid Neutralising Capacity

Based on the results of the screening tests and visual inspection of the samples, no samples from the boreholes were subjected to Chromium Suite analytical testing.

## 5.3 Results Summary

The results from the Acid Sulfate Soils laboratory testing undertaken by CMW suggest the following:

- No samples selected for acid sulfate soil screening returned results of $pH_F$ <4 indicating oxidation has not occurred in the past and that AASS is not present.
- No selected samples provided $pH_{FOX}$ <3, plus a $pH_{FOX}$ reading at least one pH unit below $pH_F$, plus a strong reaction with peroxide.

## 5.4 Potential Environmental Impacts and Management Strategy

Potential environment impacts associated with ASS disturbance during construction of the proposed high-rise tower are summarised in Table 6 below.

Table 6: Summary of Potential Environmental Impacts

| Activities | Issue | Environmental Risk | Management Strategy |
|---|---|---|---|
| Dewatering | Release of acidic or metals impacted groundwater from within the project site to surrounding surface waters | Low Risk | Regular water quality monitoring and treatment (if required) prior to the constant discharge off-site.<br>Refer to dewatering management plan. |
| Excavation of Soils | Acid generation and transport due to excavation | Very low Risk | Not Required |

# 6.0 ACID SULFATE SOIL MANAGEMENT STRATEGIES – SOIL

Specific management procedures to effectively address potential ASS issues associated with the development are not required.

# 7.0 ACID SULFATE SOIL MANAGEMENT STRATEGIES – WATER

Prior to releasing any water from site, very low risk discharges must comply with the release criteria in accordance with the Gold Coast Land Development Guidelines. The verification testing requirements and performance criteria have been outlined in the dewatering management plan.

# 8.0 CLOSURE

This report has been prepared for use by Eastview  in relation to the NALU, 122 Marine Parade, Miami Beach project in accordance with the scope, proposed uses and limitations described in the report. Should you have further questions relating to the use of your report please do not hesitate to contact us.

Where a party other than Eastview  seeks to rely upon or otherwise use this report, the consent of CMW should be sought prior to any such use. CMW can then advise whether the report and its contents are suitable for the intended use by the other party.

## USING YOUR CMW GEOTECHNICAL REPORT

Geotechnical reporting relies on interpretation of facts and collected information using experience, professional judgement, and opinion. As such it generally has a level of uncertainty attached to it, which is often far less exact than other engineering design disciplines. The notes below provide general advice on what can be reasonably expected from your report and the inherent limitations of a geotechnical report.

**Preparation of your report**

Your geotechnical report has been written for your use on your project. The contents of your report may not meet the needs of others who may have different objectives or requirements. The report has been prepared using generally accepted Geotechnical Engineering and Engineering Geology practices and procedures. The opinions and conclusions reached in your report are made in accordance with these accepted principles. Specific items of geotechnical or geological importance are highlighted in the report.

In producing your report, we have relied on the information which is referenced or summarised in the report. If further information becomes available or the nature of your project changes, then the findings in this report may no longer be appropriate. In such cases the report must be reviewed, and any necessary changes must be made by us.

**Your geotechnical report is based on your project's requirements**

Your geotechnical report has been developed based on your specific project requirements and only applies to the site in this report. Project requirements could include the type of works being undertaken; project locality, size and configuration; the location of any structures on or around the site; the presence of underground utilities; proposed design methodology; the duration or design life of the works; and construction method and/or sequencing.

The information or advice in your geotechnical report should not be applied to any other project given the intrinsic differences between different projects and site locations. Similarly geotechnical information, data and conclusions from other sites and projects may not be relevant or appropriate for your project.

**Interpretation of geotechnical data**

Site investigations identify subsurface conditions at discrete locations. Additional geotechnical information (e.g. literature and external data source review, laboratory testing etc) are interpreted by Geologists or Engineers to provide an opinion about a site specific ground models, their likely impact on the proposed development and recommended actions. Actual conditions may differ from those inferred to exist due to the variability of geological environments. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions. Interpretation of factual data can be influenced by design and/or construction methods. Where these methods change review of the interpretation in the report may be required.

**Subsurface conditions can change**

Subsurface conditions are created by natural processes and then can be altered anthropically or over time. For example, groundwater levels can vary with time or activities adjacent to your site, fill may be placed on a site, or the consistency of near surface conditions might be susceptible to seasonal changes. The report is based on conditions which existed at the time of investigation. It is important to confirm whether conditions may have changed, particularly when large periods of time have elapsed since the investigations were performed.

**Interpretation and use by other design professionals**

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical report. To help avoid misinterpretations, it is important to retain the assistance of CMW to work with other project design professionals who are affected by the contents of your report. CMW staff can explain the report implications to design professionals and then review design plans and specifications to see that they have correctly incorporated the findings of this report.

**Your report's recommendations require confirmation during construction**

Your report is based on site conditions as revealed through selective point sampling. Engineering judgement is then applied to assess how indicative of actual conditions throughout an area the point sampling might be. Any assumptions made cannot be substantiated until construction is complete. For this reason, you should retain geotechnical services throughout the construction stage, to identify variances from previous assumption, conduct additional tests if required and recommend solutions to problems encountered on site.

A Geotechnical Engineer, who is fully familiar with the site and the background information, can assess whether the report's recommendations remain valid and whether changes should be considered as the project develops. An unfamiliar party using this report increases the risk that the report will be misinterpreted.

**Environmental matters are not covered**

Unless specifically discussed in your report environmental matters are not covered by a CMW Geotechnical Report. Environmental matters might include the level of contaminants present of the site covered by this report, potential uses or treatment of contaminated materials or the disposal of contaminated materials. These matters can be complex and are often governed by specific legislation.

The personnel, equipment, and techniques used to perform an environmental study can differ significantly from those used in this report. For that reason, our report does not provide environmental recommendations. Unanticipated subsurface environmental problems can have large consequences for your site. If you have not obtained your own environmental information about the project site, ask your CMW contact about how to find environmental risk-management guidance.

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# APPENDIX A
## Site Plan




LEGEND:

- CMW Boreholes
- Pacific Geotech Boreholes

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| | | | | | |
|---|---|---|---|---|---|
| CLIENT: | Eastview | DRAWN: | MA | PROJECT: | GOL2025-0134 |
| PROJECT: | NALU<br>122 Marine Parade, Miami QLD 4220 | CHECKED: | RC | FIGURE: | 1 |
| | | REVISION: | 0 | SCALE: | 1:1000 |
| TITLE: | Site Investigation Plan | DATE: | 11/10/2025 | SHEET: | A4 L |

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# APPENDIX B
## Geotechnical Logs

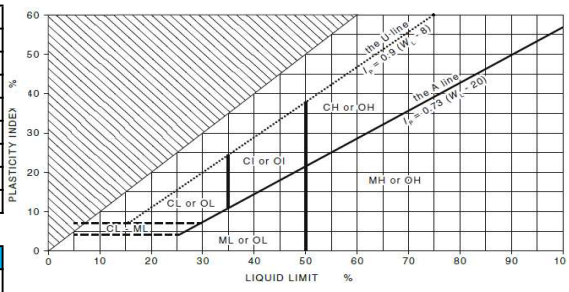
# Explanatory Notes – Soil Description

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| | | | |
|---|---|---|---|
| GRAVEL | Gravelly SAND | Sandy CLAY | FILL |
| SILTY GRAVEL | SILTY SAND | SILT | TOPSOIL |
| CLAYEY GRAVEL | CLAYEY SAND | Gravelly SILT | COBBLES & BOULDERS |
| Sandy GRAVEL | CLAY | Sandy SILT | CONCRETE |
| SAND | Gravelly CLAY | PEAT | NO CORE |

| | | | |
|---|---|---|---|
| GP | Poorly Graded Gravel | ML | Low Plasticity Silt |
| GW | Well Graded Gravel | MH | High Plasticity Silt |
| GM | Silty Gravel | CL | Low Plasticity Clay |
| GC | Clayey Gravel | CI | Medium Plasticity Clay |
| SP | Poorly Graded Sand | CH | High Plasticity Clay |
| SW | Well Graded Sand | OL | Organic Soils (LP) |
| SM | Silty Sand | OH | Organic Soils (HP) |
| SC | Clayey Sand | PT | Peat |
| | Fill | | Cobbles & Boulders |

Soil colours based on BGS Internal report IR/05/123 "A Revised scheme for coding unlithified deposits", 2006.




| WATER | |
|---|---|
| Groundwater (Strike) | Groundwater (rise) |

**CLASSIFICATION AND INFERRED STRATIGRAPHY**

| Particle Size | | |
|---|---|---|
| Major Division | Sub Division | Particle Size |
| Boulders | | > 200 mm |
| Cobbles | | 63 to 200 mm |
| Gravel | Coarse | 19 to 63 mm |
| | Medium | 6.7 to 19 mm |
| | Fine | 2.36 to 6.7 mm |
| Sand | Coarse | 0.6 to 2.36 mm |
| | Medium | 0.21 to 0.6 mm |
| | Fine | 0.075 to 0.21 mm |
| Silt | | 0.002 to 0.075 mm |
| Clay | | < 0.002 mm |

| SECONDARY/MINOR COMPONENTS | |
|---|---|
| **TERMS FOR SANDS/GRAVELS** (Less than 35% Particles < 0.075mm) | **TERMS FOR CLAYS/SILTS** (More than 35% Particles < 0.075mm) |
| **trace...** sand/gravel = <15% clay/silt = <5% | **trace...** sand/gravel = <15% |
| **with...** sand/gravel = >15%, <30% clay/silt = >5%, <12% | **with...** sand/gravel = >15%, <30% |
| **Sandy... / Gravelly...** >30% | **Sandy... / Gravelly...** >30% |
| **Clayey... / Silty ...** >12% | |

**MOISTURE CONDITION** (Cohesionless Soils)

| Symbol | Term | Description |
|---|---|---|
| D | Dry | Looks and feels dry. Cohesionless and free-running. |
| M | Moist | No free water on remoulding. Soil feels cool, darkened in colour. Soil tends to cohere. |
| W | Wet | Free water on remoulding. Soil feels cool, darkened in colour. Soil tends to cohere. |

**MOISTURE CONDITION** (Cohesive Soils)

| Symbol | Term | Description |
|---|---|---|
| <PL | Dry | Looks and feels dry. Hard and friable or powdery, well dry of the plastic limit |
| ≈PL | Moist | Soil feels cool, darkened in colour. Soil can be moulded. Near plastic limit. |
| >PL | Wet | Soils feels cool, darkened in colour. Usually weakened and free water forms when remoulding. Wet of plastic limit. |

**DENSITY** (Cohesionless Soils)

| Sym. | Term | Density Index (%) | SPT 'N' |
|---|---|---|---|
| VL | Very Loose | Less than 15 | 0 to 4 |
| L | Loose | 15 to 35 | 4 to 10 |
| MD | Medium Dense | 35 to 65 | 10 to 30 |
| D | Dense | 65 to 85 | 30 to 50 |
| VD | Very Dense | Above 85 | Above 50 |

**STIFFNESS** (Cohesive Soils)

| Sym. | Term | Undrained Shear Strength |
|---|---|---|
| VS | Very Soft | 0 to 12 kPa |
| S | Soft | 12 to 25 kPa |
| F | Firm | 25 to 50 kPa |
| St | Stiff | 50 to 100 kPa |
| VSt | Very Stiff | 100 to 200 kPa |
| H | Hard | over 200kPa |
| Fr | Friable | - |

**SAMPLING AND LABORATORY / INSITU TESTING RESULTS**

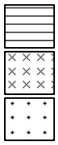
| | | | | | |
|---|---|---|---|---|---|
| B | Bulk Disturbed Sample | U | Undisturbed Push-in Sample | CBR | California Bearing Ratio |
| BLK | Block Sample | W | Water Sample | UCS | Unconfined Compressive Strength |
| C | Core Sample | LL | Liquid Limit | PLI | Point Load Index |
| ES | Environmental Soil Sample | PI | Plasticity Index | N | SPT-N Value |
| P | Piston Sample | LS | Linear Shrinkage | | |

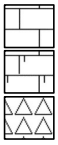
**DRILLING/EXCAVATION METHOD**

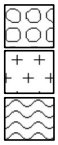
| | | | | | |
|---|---|---|---|---|---|
| AC | Air Core | HA | Hand Auger | RC | Rotary Cored |
| ADH | Hollow Auger Drilling | HQ | Rotary Core 63.5mm | RO | Rotary Open Hole |
| AD/V | Auger with V-Bit | HQ3 | Rotary Core 61.1mm | SPT | Standard Penetration Test |
| AD/T | Auger with TC-Bit | PQ3 | Rotary Drill 83mm | TP | Test Pit |
| DPP | Direct Push Probe | PT | Push Tube | W | Wash Bore |

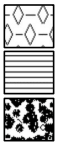
# Explanatory Notes – Rock Description

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MUDSTONE
SILTSTONE
SANDSTONE


LIMESTONE
CHALK
BRECCIA


CONGLOMERATE
IGNEOUS
METAMORPHIC


GYPSUM
SHALE
PYROCLASTIC

| ROCK MATERIAL STRENGTH | | | | |
|---|---|---|---|---|
| Symbol | Term | Uniaxial Compressive Strength - UCS (MPa) | Point Load Index - $I_{s(50)}$ (MPa)* | Field Guide |
| EL | Extremely Low | Less than 0.6 | Less than 0.03 | Easily remoulded by hand to a material with soil properties (logged as soil). |
| VL | Very Low | 0.6 to 2 | 0.03 to 0.1 | Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 3 cm thick can be broken by finger pressure. |
| L | Low | 2 to 6 | 0.1 to 0.3 | Easily scored with a knife; indentations 1 mm to 3 mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150 mm long 50 mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling. |
| M | Medium | 6 to 20 | 0.3 to 1 | Readily scored with a knife; a piece of core 150 mm long by 50 mm diameter can be broken by hand with difficulty. |
| H | High | 20 to 60 | 1 to 3 | A piece of core 150 mm long by 50 mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer. |
| VH | Very High | 60 to 200 | 3 to 10 | Hand specimen breaks with pick after more than one blow; rock rings under hammer. |
| EH | Extremely High | More than 200 | More than 10 | Specimen requires many blows with geological pick to break through intact material; rock rings under hammer. |

* Note that the rock strength should be based on UCS testing where possible. The Point Load Index ($I_{s(50)}$) to UCS correlation used in this table is presented as a guide only, using a value of 20. Rock type specific correlations should be adopted where sufficient data is availiable.

| WEATHERING CLASSIFICATION | | |
|---|---|---|
| Symbol | Term | Definition |
| RS | Residual Soil | Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported. |
| XW | Extremely weathered rock | Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible. |
| HW (or DW) | Highly Weathered | Rock strength usually changed by weathering. The rock may be highly discoloured. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores. |
| MW (or DW) | Moderately Weathered | The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognizable, but shows little or no change of strength from fresh rock. |
| SW | Slightly weathered rock | Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock. |
| FR | Fresh rock | Rock shows no sign of decomposition or staining. |

| CEMENTATION CLASSIFICATION | | |
|---|---|---|
| Symbol | Term | Definition |
| Uc | Un cemented | Clean grains, exhibiting soil properties. |
| VWc | Very weakly cemented | Marginal soil-rock strengths, collapsing feel under light finger pressure, cement seen on some washed grains. |
| Wc | Weakly Cemented | Collapsing feel under light soil pressure, breaks down to individual grains or with some grains cemented together, cement seen on many washed grains. |
| MWk | Moderately Weakly Cemented | Cement on nearly all grains, breaks down to lumps and some individual grains under finger pressure, can crush to individual grains under knife blade. |
| Mo | Moderately Cemented | Cement on most grains, can break fragments off by hand and crush to small lumps under knife blade. |
| We | Well Cemented | Practically all grains cemented together, cannot break fragments off by hand, dull sound under hammer. |
| VWe | Very Well Cemented | Most Primary Pores filled with cement, requires firm blow with hammer to break off fragments, rings when struck |

| ROCK CORE RECOVERY | | |
|---|---|---|
| Symbol | Term | Definition |
| TCR | Total Core Recovery (%) | The ratio of total length of core recovered to length of core run drilled, expressed as a percentage. |
| SCR | Solid Core Recovery (%) | The ratio of the total length of solid cylindrical pieces of core recovered to length of core run drilled, expressed as a percentage. |
| RQD | Rock Quality Designation (%) | The ratio of the total length of solid cylindrical pieces of core over 100mm in length recovered to length of core run drilled, expressed as a percentage. |

# Explanatory Notes – Defect Description

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| Defect Type | | | |
|---|---|---|---|
| ABBREVIATION | TERM | DEFINITION | DIAGRAM |
| PT | Parting | A surface or crack across which the soil has little or no tensile strength. Parallel or sub parallel to layering (eg bedding). May be open or closed. |  |
| JT | Joint | A surface or crack across which the soil has little or no tensile strength but which is not parallel or sub parallel to layering. May be open or closed. |  |
| SS | Sheared Surface | A near planar, curved or undulating surface which is usually smooth, polished or slickensided and which shows evidence of shear displacement. |  |
| SZ | Sheared Zone | Zone of rock material with roughly parallel near planar, curved or undulating boundaries cut by closely spaced joints, sheared surfaces or other defects. Some of the defects are usually curved and intersect to divide the mass into lenticular or wedge-shaped blocks. |  |
| CS | Crushed Zone / Seam | Seam of soil material with roughly parallel almost planar boundaries, composed of disoriented, usually angular fragments of the host rock material which may be more weathered than the host rock. The seam has soil properties. |  |
| SM | Seam | Seam of soil material usually with distinct roughly parallel boundaries formed by the migration of soil into an open cavity or joint, infilled seams less than 1 mm thick may be described as a veneer or coating on a joint surface. |  |

| Surface Roughness | | |
|---|---|---|
| ABBREVIATION | TERM | Description |
| VR | Very Rough | Many large irregularities generally > 1 mm |
| RO | Rough | Many small irregularities generally > 1 mm |
| SM | Smooth | Few or no surface irregularities |
| PO | Polished | Shiny smooth surface |
| Sl | Slickensided/ Striated | Grooved/striated surface, usually polished |

| Orientation | |
|---|---|
| ABBREVIATION | TERM |
| SH | Sub Vertical |
| SV | Sub Horizontal |
| 10° | Angle from horizontal |

| Surface Shape | | |
|---|---|---|
| ABBREVIATION | TERM | Description |
| PL | Planar | Does not vary in orientation |
| CU | Curved | Gradual change in orientation |
| UN | Undulating | Wavy surface |
| ST | Stepped | One or more well defined steps |
| IR | Irregular | Many sharp changes in orientation |

| Aperture | |
|---|---|
| ABBREVIATION | TERM |
| DIS | Discontinuous |
| CL | Closed |
| 5mm | Measured width between joint surfaces |

| Coatings | | |
|---|---|---|
| ABBREVIATION | TERM | Description |
| CN | Clean | No visible coating |
| SN | Stained | No coating but surface discoloured |
| VN | Veneer | Visible coating too thin to measure |
| CT | Coating | Visible coating up to 1mm thick |
| IF | Infilled | Over 1mm thick of soil present |

| Block Shape | |
|---|---|
| Term | Description |
| Blocky | Roughly equidimensional blocks. |
| Tabular | Thickness of blocks much less than length or width. |
| Columnar | Lengths much greater than other dimensions |
| Irregular | Irregular discontinuities without arrangement into distinct sets, |

# BOREHOLE LOG - BH01-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 06/10/2025 End Date: 06/10/2025 1:25 Sheet 1 of 3

CMW Geosciences
Great People | Practical Solutions

Logged by: HM Position: E.543468m N.6895841m Plant: Pioneer P160
Checked by: Mark A Elevation: 4.272 m (mAHD) Contractor: NCD

| Drilling Method | Well | Groundwater | Coring: TCR | Coring: SCR | Coring: RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; 6; 60; UCS (MPa); UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) (<20; 20-40; 40-100; 100-300; 300-1000; >1000) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 4.3 | | | PAVER: | | | | | | |
| | | | | | | 4.2 | | | GC: Clayey GRAVEL: fine to medium grained, sub-angular to angular; brown to yellow, sand; fine to medium grained, well graded, clay is medium plasticity; (FILL) | | D | | | | |
| | | | | | | 4.1 | | | SP: SAND: fine to medium grained, rounded to sub-rounded, poorly graded; yellow to pale brown; trace organics (Dune sand). | L | | | | | |
| AD/V | | | | | | | 1 | | | | | | | | 1.0m:SPT: (5,6,9) N=15 |
| | | | | | | | | | | MD | | | | | |
| | | | | | | | 2 | | | | M | | | | 2.5m:SPT: (3,5,4) N=9 |
| | | | | | | | 3 | | | | | | | | |
| | | | | | | 0.8 | | | SM: SILTY SAND: fine grained; dark brown to grey; low plasticity fines, with organics (roots); (Dune Sand). | | | | | | |
| W | | ▼ | | | | | 4 | | | L | | | | | 4.0m:SPT: (0,1,4) N=5 |
| | | | | | | | | | | | W | | | | |
| | | | | | | -0.7 | 5 | | | | | | | | |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH01-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 06/10/2025 End Date: 06/10/2025 1:25 Sheet 2 of 3

CMW Geosciences
Great People | Practical Solutions

Logged by: HM Position: E.543468m N.6895841m Plant: Pioneer P160
Checked by: Mark A Elevation: 4.272 m (mAHD) Contractor: NCD

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; 6; 60; UCS (MPa); UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) (<20; 20-40; 40-100; 100-300; 300-1000; >1000) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W | | | | | | | 6 | | SP: SAND: fine to medium grained, rounded to sub-rounded, cemented; brown to yellow; trace gravel, fine to medium grained, angular to sub-angular; (Indurated Sand). | D | W | | | | 5.5m:SPT: (12,15,21) N=36 |
| | | | | | | | 7 | | | | | | | | 7.0m:SPT: (13,16,26) N=42 |
| | | | | | | | 8 | | | VD | | | | | 8.5m:SPT: (30/140mm) N=R |
| | | | | | | -4.7 | 9 | | | | | | | | |
| NML C | | | 100 | 100 | 77 | | 10 | | METASILTSTONE: fine to medium grained; pale grey-green with red and yellow; indistinctly gentle foliated; with some iron staining through rockmass | | | | | | 9.00-14.00m:C 1<br>Is50=2.05MPa<br>Is50=4.93MPa<br>9.10m:PT, 5°, PL, SM, (Fe)<br>9.50m:PT, 0°, PL, SM, (Clay)<br>9.60m:PT, 3°, PL, SM, (Fe)<br>9.75m:CRS, 45°, IR, RO, (Fe) |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH01-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 06/10/2025 End Date: 06/10/2025 1:25 Sheet 3 of 3

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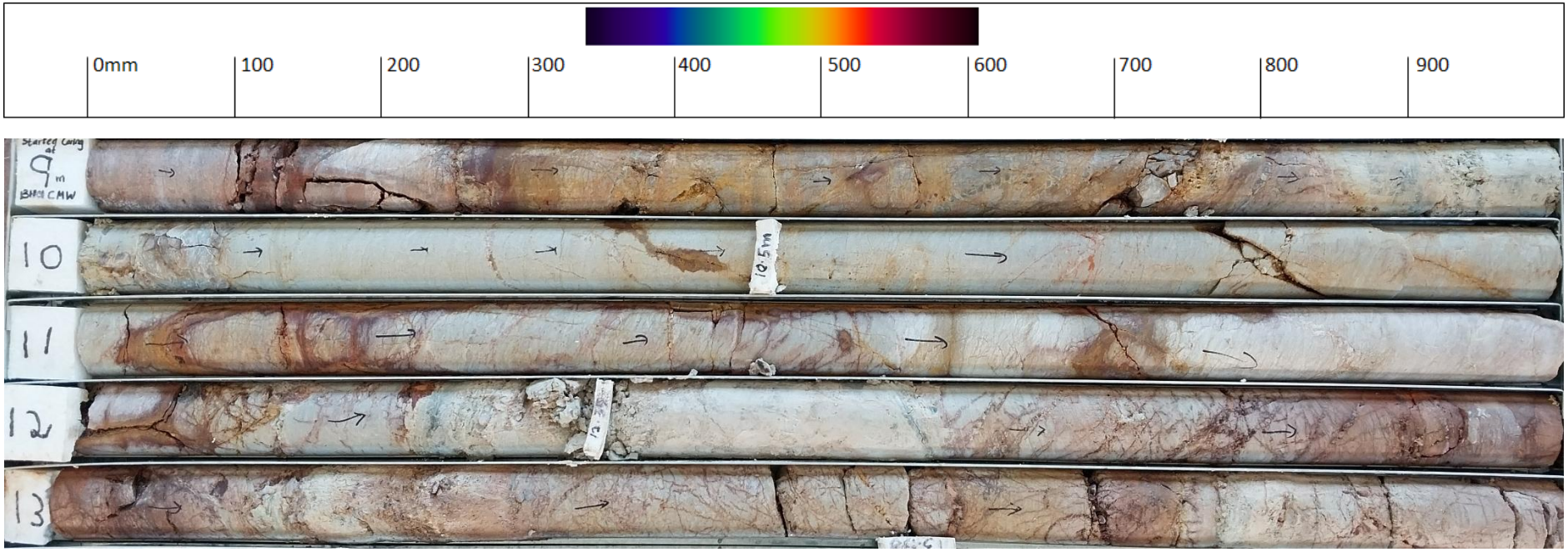
Logged by: HM Position: E.543468m N.6895841m Plant: Pioneer P160
Checked by: Mark A Elevation: 4.272 m (mAHD) Contractor: NCD

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; UCS (MPa) 6 60; UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) <20 20-40 40-100 100-300 300-1000 >1000 | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NML C | | | 100 | 100 | 76 | | 11 | | METASILTSTONE: fine to medium grained; pale grey-green with red and yellow; indistinctly gentle foliated; with some iron staining through rockmass | | | | | | 10.75m:JT, 55°, UN, SM, (Fe) Is50=0.07MPa<br>10.90m:PT, 5°, CU, SM, (Fe)<br>11.05m:PT, 5°, UN, RO, (Fe)<br>11.15m:PT, 5°, UN, RO, (Fe) |
| | | | 100 | 87 | 65 | | 12 | | | | | | | | 11.50m:PT, 5°, UN, RO, (Fe)<br>11.65m:JT, 45°, IR, RO, (Fe)<br>12.10m:JT, 80°, CU, RO, (Fe)<br>12.55m:PT, 35°, PL, SM, (Clay)<br>12.80m:JT, 45°, PL, SM, (Fe) |
| | | | 100 | 100 | 20 | | 13 | | | | | | | | 13.10m:JT, 40°, CU, SM, (Fe)<br>13.35m:JT, 45°, PL, SM, (Clay)<br>13.50m:PT, 5°, PL, RO Is50=0.66MPa<br>13.55m:PT, 5°, PL, SM, (Fe)<br>13.75m:JT, 10°, IR, SM, (Fe, Gravel)<br>13.90m:PT, 5°, PL, SM, (Clay) |
| | | | | | | | 14 | | Borehole terminated at 14.0 m | | | | | | |
| | | | | | | | 15 | | | | | | | | |

Termination reason: Target Material
Remarks:

# CORE PHOTOGRAPHS: BH01-CMW

| | | | |
|---|---|---|---|
| **Client:** | Eastview | **Project:** | Nalu |
| **Location:** | 122 Marine Parade, Miami | **Project No:** | GOL2025-0134 |
| **Position:** | | **Date:** | October 2025 |
| **Angle:** | Horizontal 90° | **Hole Diameter:** | NMLC |
| **Plant:** | P160 | **Contractor:** | NCD |
| **Logged by:** | MR | **Checked by:** | MA |




**BH01-CMW: 9m to 14m**

# BOREHOLE LOG - BH02-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 08/10/2025 End Date: 08/10/2025 1:25 Sheet 1 of 3

CMW Geosciences
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Logged by: MR Position: E.543438m N.6895868m Plant:
Checked by: Mark A Elevation: 4.155 m (mAHD) Angle from horizontal: 0° Contractor: North Coast

| Drilling Method | Well | Groundwater | Coring: TCR | Coring: SCR | Coring: RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; 6; 60; UCS (MPa); UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm): <20; 20-40; 40-100; 100-300; 300-1000; >1000 | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADH | | ▼ | | | | 4.2 | | | ASPHALT : | | | | | | |
| | | | | | | 4.0 | | | GC: Sandy clayey GRAVEL: fine to medium grained, angular; brown; sand, medium grained; clay is medium plasticity (FILL) | | | | | | |
| | | | | | | 3.8 | | | SP: SAND: fine to medium grained, rounded to sub-rounded, poorly graded; yellow to pale brown; trace organics (Dune sand). | | | | | | 0.50m:ES 1 |
| | | | | | | 3.2 | 1 | | SM: Silty SAND: fine to medium grained, rounded to sub-rounded, cemented; brown to yellow; trace gravel, fine to medium grained, angular to sub-angular; (Indurated Sand). | MD | D to M | | | | 1.0m:SPT: (5,5,5) N=10 Rec.=450mm |
| | | | | | | | | | | | | | | | 1.50-1.95m:SPTLS 3 |
| | | | | | | | 2 | | | | | | | | 2.50m:ES 4 |
| | | | | | | | | | | L | | | | | 2.5m:SPT: (1,3,4) N=7 Rec.=450mm |
| | | | | | | | 3 | | | | | | | | |
| | | | | | | | 4 | | | D to VD | M to W | | | | 4.00-4.45m:SPTLS 7 4.00m:ES 6 4.0m:SPT: (17,21,29) N=50 Rec.=400mm |
| | | | | | | | 5 | | | | | | | | |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH02-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 08/10/2025 End Date: 08/10/2025 1:25 Sheet 2 of 3

CMW Geosciences
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Logged by: MR Position: E.543438m N.6895868m Plant:
Checked by: Mark A Elevation: 4.155 m (mAHD) Angle from horizontal: 0° Contractor: North Coast

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (UCS (MPa) / UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADH | | | | | | | 6 | | SM: Silty SAND: fine to medium grained, rounded to sub-rounded, cemented; brown to yellow; trace gravel, fine to medium grained, angular to sub-angular; (Indurated Sand). | D to VD | M to W | | | | 5.50-5.95m:SPTLS 7<br>5.5m:SPT: (12,14,19) N=33<br>Rec.=450mm |
| NML C | | | 100 | 93 | 0 | -2.8 | 7 | | METASILTSTONE: fine to medium grained; plae grey with red, indistinctly gently foliated; with some iron staining through rockmass, intermittent clay and XW zones. | | | | MW | | 7.00-8.35m:C 8<br>7.0m:SPT: (50/12mm) N=R<br>Rec.=0mm<br>Is50=0.50MPa<br>7.10-7.30m:JT, 45°, UN, RO<br>7.10m:JT, 45°, UN, RO<br>7.40-7.50m:SM, (fine sand with traces of seashells and fine rounded gravels)<br>7.40m:JT, 30°, UN, RO<br>7.55m:JT, 25°, UN, RO<br>7.65m:, 45°, UN, RO<br>7.71m:, 45°, UN, RO, SN<br>7.80-7.95m:, 45°, UN, RO, CN, (silty clay)<br>7.98m:JT, 45°, UN, RO, SN<br>8.10m:JT, 25°, UN, RO, CN<br>8.27-8.32m:SS<br>8.40m:C<br>8.60m:JT, 45°, UN, RO, SN<br>8.70m:JT, 38°, CU, RO, CO, silty clay |
| | | | 100 | 100 | 60 | | 9 | | | | | | MW | | 9.10m:JT, 30°, UN, RO<br>9.26m:JT, 5°, UN, RO<br>9.56m:JT, 45°, UN, RO<br>9.57m:JT, 30°, UN, RO, CN<br>9.90m:C |
| | | | | | | | 10 | | | | | | | | |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH02-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 08/10/2025 End Date: 08/10/2025 1:25 Sheet 3 of 3

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Logged by: MR Position: E.543438m N.6895868m Plant:
Checked by: Mark A Elevation: 4.155 m (mAHD) Angle from horizontal: 0° Contractor: North Coast

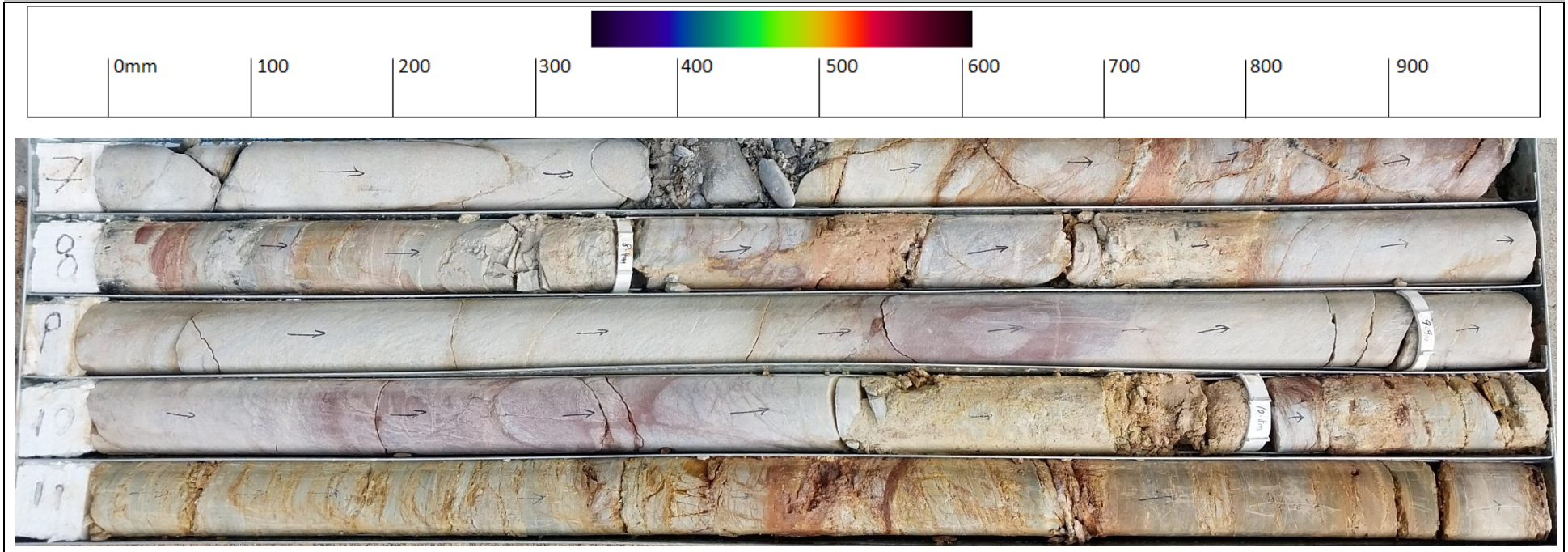
| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; UCS (MPa); UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NML C | | | 100 | 78 | 72 | -6.3 | 11 | | METASILTSTONE: fine to medium grained; plae grey with red, indistinctly gently foliated; with some iron staining through rockmass, intermittent clay and XW zones. | | | | MW | | Is50=12.22MPa<br>10.20m:JT, 30°, UN, RO<br>10.34m:JT, 45°, UN, RO<br>10.37m:JT, 45°, UN, RO<br>10.52m:JT, 30°, UN, RO |
| | | | | | | | | | METAGREYWACKE: fine to medium grained; pale yellow grey; distinctly gently foliated; with some iron staining through rockmass.<br>*... from 10.60m to 10.80m, XW clay zone* | | | | XW | | 10.70-10.80m:CRS, (silty clay)<br>10.80m:C<br>10.84m:JT, 30°, UN, RO<br>10.92m:JT, 15°, UN, RO<br>10.95-11.00m:CRS, (silty clay)<br>Is50=0.01MPa<br>11.10m:JT, 10°, UN, RO, SN |
| | | | 100 | 100 | 75 | | 12 | | | | | | MW | | 11.40m:JT, 0°, PL, RO, SN<br>11.66m:JT, 0°, PL, RO, SN<br>11.88m:JT, 0°, PL, RO, SN<br>11.91m:JT, 0°, UN, RO, SN |
| | | | | | | | | | Borehole terminated at 12.0 m | | | | | | |
| | | | | | | | 13 | | | | | | | | |
| | | | | | | | 14 | | | | | | | | |
| | | | | | | | 15 | | | | | | | | |

Termination reason: Target Material
Remarks:

This report must be read in conjunction with accompanying notes and abbreviations.

# CORE PHOTOGRAPHS: BH02-CMW

| | | | |
|---|---|---|---|
| **Client:** | Eastview | **Project:** | Nalu |
| **Location:** | 122 Marine Parade, Miami | **Project No:** | GOL2025-0134 |
| **Position:** | | **Date:** | October 2025 |
| **Angle:** | Horizontal 90° | **Hole Diameter:** | NMLC |
| **Plant:** | P160 | **Contractor:** | NCD |
| **Logged by:** | MR | **Checked by:** | MA |




**BH02-CMW: 7m to 12m**

# BOREHOLE LOG - BH03-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 07/10/2025 End Date: 08/10/2025 1:25 Sheet 1 of 2

CMW Geosciences
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Logged by: MR Position: E.543384m N.6895820m Plant: NC
Checked by: Mark A Elevation: 4.325 m (mAHD) Contractor: North Coast

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (UCS (MPa) / UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 4.3 | | | ASPHALT: | | | | | | |
| | | | | | | 4.2 | | | GC: Sandy clayey GRAVEL: fine to medium grained, angular; brown; sand, medium grained; clay is medium plasticity (FILL) | | | | | | |
| | | | | | | 4.0 | | | SC: Clayey SAND: fine to medium grained, sub-angular to sub-rounded ; red and brown; clay, low plasticity; (Extremely Weathered Material). | | | | | | |
| AD/V | | | | | | | | | | | D | | | | 0.50m:ES 1 |
| | | | | | | 3.3 | 1 | | METASILTSTONE: fine to medium grained; pale yellow grey; distinctly gently foliated; with some iron staining through rockmass. | | | | | | 1.00-1.45m:SPTLS 2<br>1.00-2.25m:C 3<br>1.0m:SPT: (30/100mm) N=R Rec.=80mm<br>1.05m:JT, 45°, UN, RO, CN Is50=10.66MPa<br>1.27m:JT, 30°, UN, RO, CO, Iron stain on joint surface<br>1.40m:JT, 45°, UN, RO, SN<br>1.50m:JT, 45°, UN, RO, SN<br>1.52m:JT, UN, RO, SN |
| | | | 100 | 100 | 48 | | | | | | | | | | 1.80m:JT, 45°, UN, RO, SN<br>1.90m:JT, 45°, UN, RO, SN |
| | | | | | | | 2 | | | | | | HW | | 2.05m:JT, 45°, UN, RO, SN |
| | | | | | | | | | | | | | | | 2.25m:JT, 45°, UN, RO, SN<br>2.25-3.40m:C 4<br>2.34m:JT, 30°, UN, RO<br>2.40m:JT, 20°, UN, RO, SN Is50=2.11MPa<br>2.55-2.60m:CRS |
| | | | 100 | 100 | 63 | | | | | | | | | | |
| NML C | | | | | | | 3 | | | | D | | | | 2.95m:JT, 25°, UN, RO<br>3.20-3.30m:SZ, (silty clay) |
| | | | | | | | | | | | | | MW | | 3.40-4.70m:C 5<br>3.45-3.55m:JT, 25°, UN, RO |
| | | | 88 | 88 | 77 | | 4 | | | | | | | | 3.93m:JT, 10°, UN, RO, CN<br>4.20m:JT, 5°, UN, RO, CN |
| | | | | | | | | | | | | | MW to SW | | 4.50m:JT, 10°, UN, RO<br>4.70-6.00m:C 6<br>4.75-4.66m:CRS |
| | | | | | | | 5 | | | | | | | | |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH03-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 07/10/2025 End Date: 08/10/2025 1:25 Sheet 2 of 2

CMW Geosciences
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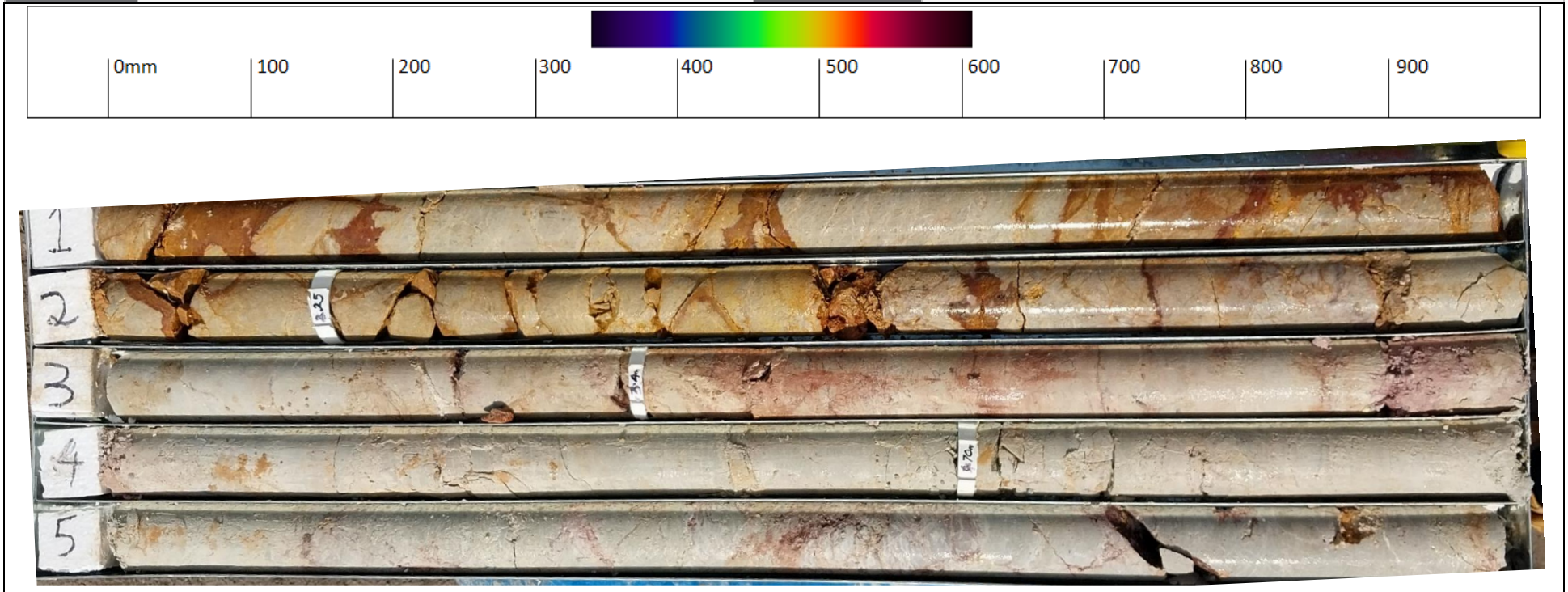
Logged by: MR Position: E.543384m N.6895820m Plant: NC
Checked by: Mark A Elevation: 4.325 m (mAHD) Contractor: North Coast

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; 6; 60; UCS (MPa); UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) (<20; 20-40; 40-100; 100-300; 300-1000; >1000) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NML C | | | 100 | 100 | 85 | | 6 | | METASILTSTONE: fine to medium grained; pale yellow grey; distinctly gently foliated; with some iron staining through rockmass. | | D | | MW to SW | | 5.78-5.82m:JT, 45°, UN, RO, CN Is50=0.70MPa |
| | | | | | | | | | Borehole terminated at 6.0 m | | | | | | |
| | | | | | | | 7 | | | | | | | | |
| | | | | | | | 8 | | | | | | | | |
| | | | | | | | 9 | | | | | | | | |
| | | | | | | | 10 | | | | | | | | |

Termination reason: Target Material
Remarks:

# CORE PHOTOGRAPHS: BH03-CMW

| | | | |
|---|---|---|---|
| **Client:** | Eastview | **Project:** | Nalu |
| **Location:** | 122 Marine Parade, Miami | **Project No:** | GOL2025-0134 |
| **Position:** | | **Date:** | October 2025 |
| **Angle:** | Horizontal 90° | **Hole Diameter:** | NMLC |
| **Plant:** | Boart Longyear LX6 | **Contractor:** | Qest |
| **Logged by:** | MR | **Checked by:** | MA |




**BH03-CMW: 1m to 6m**

# BOREHOLE LOG - BH04-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 07/10/2025 End Date: 07/10/2025 1:25 Sheet 1 of 3

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Logged by: MR Position: E.543421m N.6895791m Plant: Boart Longyear LX6
Checked by: Mark A Elevation: 4.202 m (mAHD) Contractor: Quest

| Drilling Method | Well | Groundwater | Coring: TCR | Coring: SCR | Coring: RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; 6; 60; UCS (MPa); UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) (<20; 20-40; 40-100; 100-300; 300-1000; >1000) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADH | | ▼ | | | | 4.2 | | | ASPHALT: | | | | | | |
| | | | | | | 4.1 | | | GC: Sandy clayey GRAVEL: fine to medium grained, angular; brown; sand, medium grained; clay is medium plasticity (FILL) | | D to M | | | | |
| | | | | | | 4.0 | | | SP: SAND: fine to medium grained, rounded to sub-rounded, poorly graded; yellow to pale brown; trace organics (Dune sand). | | | | | | 0.50m:ES 1 |
| | | | | | | | 1 | | | | | | | | 1.00-1.45m:SPTLS 5<br>1.00m:ES 2<br>1.0m:SPT: (2,4,4) N=8<br>Rec.=300mm |
| | | | | | | | | | | L | | | | | 1.50m:ES 3 |
| | | | | | | | 2 | | | | M | | | | 2.00m:ES 4 |
| | | | | | | | | | | | | | | | 2.50-2.95m:SPTLS 9<br>2.50m:ES 6<br>2.5m:SPT: (1,1,1) N=2<br>Rec.=450mm |
| | | | | | | | 3 | | | VL | | | | | 3.00m:ES 7 |
| | | | | | | | | | | | | | | | 3.50m:ES 8 |
| | | | | | | | 4 | | | | W | | | | 4.00-4.45m:SPTLS 10<br>4.0m:SPT: (1,3,10) N=13<br>Rec.=300mm |
| | | | | | | | | | | MD | | | | | |
| | | | | | | | 5 | | | | | | | | |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH04-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 07/10/2025 End Date: 07/10/2025 1:25 Sheet 2 of 3

CMW Geosciences
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Logged by: MR Position: E.543421m N.6895791m Plant: Boart Longyear LX6
Checked by: Mark A Elevation: 4.202 m (mAHD) Contractor: Quest

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; 6 60; UCS (MPa) UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) (<20 20-40 40-100 100-300 300-1000 >1000) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADH | | | | | | | | | SP: SAND: fine to medium grained, rounded to sub-rounded, poorly graded; yellow to pale brown; trace organics (Dune sand). | MD | W | | | | |
| | | | | | | -1.3 | | | GW: Sandy Cobbly GRAVEL : course grained, rounded to sub-rounded; red-grey to yellow-orange; sand, fine to coarse grained, cobbles up to 60mm, trace fines, low plasticity; (Alluvium? Colluvium?). | | | | | | 5.50-6.50m: Core loss<br>5.50-5.60m:SPTLS 11<br>5.50-7.00m:C 12<br>5.5m:SPT: (30/105mm) N=R Rec.=125mm |
| | | | 17 | 0 | 0 | | 6 | | | VD | | | | | |
| | | | | | | -2.7 | 7 | | METASILTSTONE: fine to medium grained; paLe grey with red, indistinctly gently foliated; with some iron staining through joints. | | | | | | 7.00m:JT, 30°, UN, RO<br>7.00-7.50m:C 13 |
| | | | 100 | 80 | 20 | | | | | | | | | | 7.15m:JT, 30°, UN, RO<br>7.18m:JT, 25°, UN, RO<br>7.22m:JT, 30°, UN, RO<br>7.28m:JT, 35°, UN, RO<br>7.35m:JT, 30°, UN, RO<br>Is50=1.44MPa |
| NML C | | | | | | | | | | | | | | | 7.50m:JT, 0°, UN, RO<br>7.50-8.50m:C 14<br>7.53m:JT, 10°, UN, RO<br>7.60m:JT, 15°, UN, RO<br>7.65m:JT, 15°, UN, RO<br>7.70m:JT, 15°, UN, RO<br>7.77m:JT, 25°, UN, RO<br>7.92m:JT, 25°, UN, RO |
| | | | 100 | 100 | 44 | | 8 | | | | | | | | 8.10m:JT, 25°, UN, RO<br>8.20-8.35m:JT, 70°, UN, RO |
| | | | | | | | | | | | | | MW | | 8.45m:JT, 30°, UN, RO<br>8.50-10.20m:C 16<br>8.60m:JT, 15°, CU, RO<br>8.65-8.70m:JT, 40°, UN, RO |
| | | | 100 | 100 | 88 | | 9 | | | | | | | | 8.90m:JT, 25°, UN, RO<br>9.00-9.15m:JT, 30°, UN, RO<br>9.28m:JT, 10°, UN, RO<br>9.45-9.50m:JT, 5°, UN, RO<br>9.70m:JT, 0°, UN, RO<br>9.80-9.90m:, 15°, UN, RO<br>Is50=1.35MPa |
| | | | | | | | 10 | | | | | | | | |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH04-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 07/10/2025 End Date: 07/10/2025 1:25 Sheet 3 of 3

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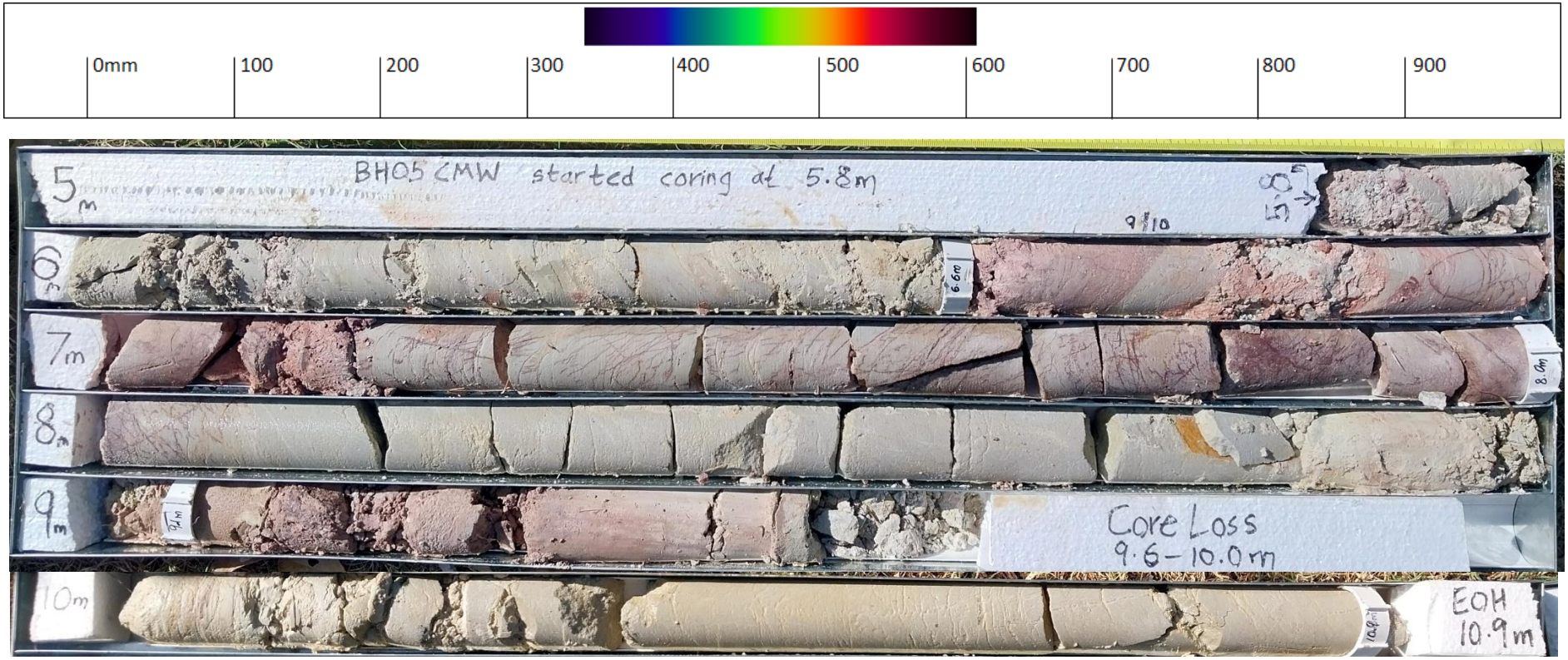
Logged by: MR Position: E.543421m N.6895791m Plant: Boart Longyear LX6
Checked by: Mark A Elevation: 4.202 m (mAHD) Contractor: Quest

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; 6; 60; UCS (MPa); UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) (<20; 20-40; 40-100; 100-300; 300-1000; >1000) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NML C | | | 100 | 100 | 0 | | | | METASILTSTONE: fine to medium grained; paLe grey with red, indistinctly gently foliated; with some iron staining through joints. | | | | MW | | 10.05m:, 25°, UN, RO, (silty sand)<br>10.15m:JT, 5°, UN, RO, VN<br>10.18m:JT, 5°, UN, RO<br>10.20-10.80m:C 17 |
| | | | | | | | | | Borehole terminated at 10.5 m | | | | | | 10.60-1.75m:IFS, (clay) |
| | | | | | | | 11 | | | | | | | | |
| | | | | | | | 12 | | | | | | | | |
| | | | | | | | 13 | | | | | | | | |
| | | | | | | | 14 | | | | | | | | |
| | | | | | | | 15 | | | | | | | | |

Termination reason: Target Material
Remarks:

# CORE PHOTOGRAPHS: BH05-CMW

| | | | |
|---|---|---|---|
| **Client:** | Eastview | **Project:** | Nalu |
| **Location:** | 122 Marine Parade, Miami | **Project No:** | GOL2025-0134 |
| **Position:** | | **Date:** | October 2025 |
| **Angle:** | Horizontal 90° | **Hole Diameter:** | NMLC |
| **Plant:** | Geo205 | **Contractor:** | MGS |
| **Logged by:** | MR | **Checked by:** | MA |




**BH05-CMW: 5m to 11m**

# BOREHOLE LOG - BH05-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 09/10/2025 End Date: 09/10/2025 1:25 Sheet 1 of 3

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Logged by: MR Position: E.543419m N.6895815m Plant: GEO205
Checked by: Mark A Elevation: 4.406 m (mAHD) Contractor: Mapstone

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; UCS (MPa) 6 60; UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) <20 20-40 40-100 100-300 300-1000 >1000 | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AD/V | | ▼ | | | | 4.4<br>4.3 | 0<br>1<br>2<br>3<br>4<br>5 | | SM: Silty SAND: fine grained, rounded to sub-rounded; pale grey to yellow; low plasticity fines, with organics (Topsoil).<br>SP: SAND: fine to medium grained, rounded to sub-rounded, poorly graded; yellow to pale brown; trace organics (Dune sand). | D<br>MD<br>L<br>MD | D<br>D to M<br>M | | | | 0.50m:ES 1<br>1.00-1.45m:SPTLS 3<br>1.00m:ES 2<br>1.0m:SPT: (3,6,7) N=13<br>Rec.=150mm<br>1.50m:ES 10<br>2.50-2.95m:SPTLS 6<br>2.50m:ES 4<br>2.5m:SPT: (7,3,3) N=6<br>Rec.=450mm<br>3.00m:ES 5<br>3.50m:ES 7<br>4.00-4.45m:SPTLS 8<br>4.0m:SPT: (1,3,8) N=11<br>Rec.=450mm |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH05-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 09/10/2025 End Date: 09/10/2025 1:25 Sheet 2 of 3

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Logged by: MR Position: E.543419m N.6895815m Plant: GEO205
Checked by: Mark A Elevation: 4.406 m (mAHD) Contractor: Mapstone

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (UCS (MPa) / UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AD/V | | | | | | | | | SP: SAND: fine to medium grained, rounded to sub-rounded, poorly graded; yellow to pale brown; trace organics (Dune sand). | MD | M | | | | 5.50-5.80m:SPTLS 9<br>5.5m:SPT: (27,30/85mm) N=R<br>Rec.=300mm |
| | | | | | | | | | | VD | | | | | |
| | | | | | | -1.4 | | | METASILTSTONE: fine to medium grained; pale grey with red; distinctly gently foliated; with some iron staining through joints, intermittent XW zones and clay seams. | | | | | | 5.80-6.60m:C 11 |
| | | | 100 | 100 | 0 | | 6 | | | | | | | | 5.90-6.10m:JT, 45°, UN, RO, CO, silty clay<br>5.90m:JT, 45°, UN, RO, CO, silty clay<br>6.10m:JT, 30°, UN, RO, CO, silty clay<br>6.24m:JT, 20°, UN, RO, CO, silty clay<br>6.40m:JT, 30°, UN, RO, CO<br>6.50m:JT, 30°, UN, RO, CO<br>6.60m:JT, 45°, UN, RO, SN<br>Is50=0.84MPa<br>Is50=5.55MPa |
| | | | 100 | 100 | 56 | | 7 | | | | | | MW | | 6.80-6.90m:EWS, SN<br>6.90m:JT, UN, RO, SN<br>Is50=1.93MPa<br>7.10m:JT, 45°, UN, RO, SN<br>7.30m:JT, 15°, UN, RO, SN<br>7.45m:JT, 10°, UN, RO, SN<br>7.55-7.66m:JT, 45°, UN, RO, SN |
| NML C | | | 100 | 100 | 29 | | 8 | | | | M | | | | 7.80-7.90m:JT, 45°, UN, RO, SN<br>7.95m:JT, 30°, UN, RO, SN<br>8.20m:JT, 30°, UN, RO, CO<br>8.30m:JT, 15°, UN, RO, CO<br>8.42m:JT, 15°, UN, RO, CO<br>8.50m:JT, 15°, UN, RO, CN<br>Is50=2.94MPa<br>8.60m:JT, 10°, UN, RO, CN<br>8.70m:JT, 10°, UN, RO, CN<br>8.80-8.85m:JT, 45°, UN, RO, SN |
| | | | 89 | 11 | 0 | -5.2 | 9 | | CORE LOSS: | | | | HW | | 8.90-9.15m:EWS, grey mottled red brown silty sand with medium sub-angular to sub-rounded gravels<br>9.15-9.30m:EWS, HW greywacke with fine to medium sub-angular to sub-rounded sand<br>9.30-9.60m:EWS, grey mottled red brown silty sand traces medium sub-angular to sub-rounded gravels |
| | | | | | | -5.6 | 10 | | | | | | | | Is50=0.20MPa |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH05-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 09/10/2025 End Date: 09/10/2025 1:25 Sheet 3 of 3

CMW Geosciences
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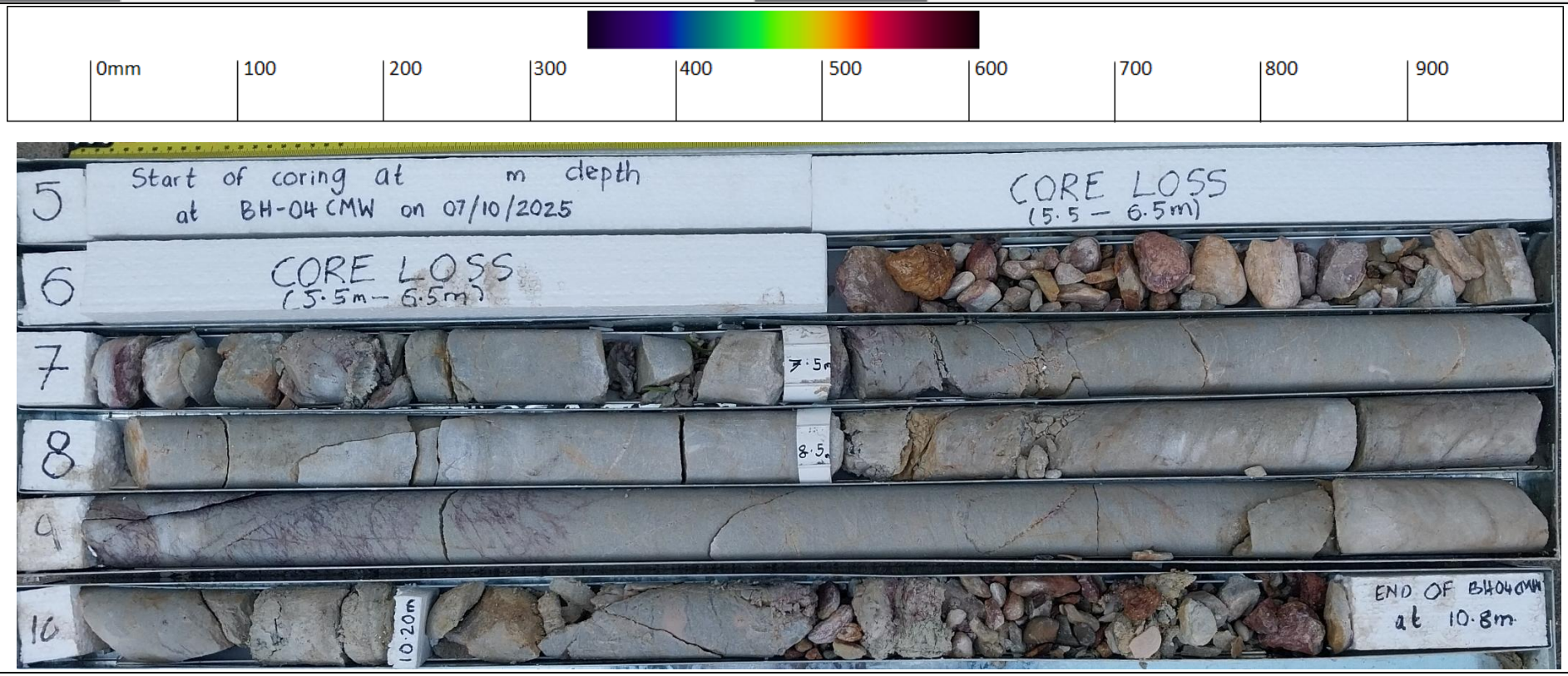
Logged by: MR Position: E.543419m N.6895815m Plant: GEO205
Checked by: Mark A Elevation: 4.406 m (mAHD) Contractor: Mapstone

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; UCS (MPa) 6 60; UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) <20 20-40 40-100 100-300 300-1000 >1000 | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NMLC | | | 100 | 100 | 42 | | | | METASILTSTONE: fine to medium grained , grey mottled brown to grey , wet | | M | | MW | | 10.10-10.30m:CRS<br>10.35m:JT, 30°, UN, RO, CO<br>10.55-10.60m:JT, 45°, UN, RO, SN |
| | | | | | | | | | Borehole terminated at 10.9 m | | | | | | |
| | | | | | | | 11 | | | | | | | | |
| | | | | | | | 12 | | | | | | | | |
| | | | | | | | 13 | | | | | | | | |
| | | | | | | | 14 | | | | | | | | |
| | | | | | | | 15 | | | | | | | | |

Termination reason: Target Material
Remarks:

# CORE PHOTOGRAPHS: BH04-CMW

| | | | |
|---|---|---|---|
| **Client:** | Eastview | **Project:** | Nalu |
| **Location:** | 122 Marine Parade, Miami | **Project No:** | GOL2025-0134 |
| **Position:** | | **Date:** | October 2025 |
| **Angle:** | Horizontal 90° | **Hole Diameter:** | NMLC |
| **Plant:** | P160 | **Contractor:** | NCD |
| **Logged by:** | MR | **Checked by:** | MA |




**BH04-CMW: 5m to 11m**

# BOREHOLE LOG - BH06-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 09/10/2025 End Date: 10/10/2025 1:25 Sheet 1 of 3

CMW Geosciences
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Logged by: MR Position: E.543427m N.6895837m Plant: Geo 205
Checked by: Mark A Elevation: 4.499 m (mAHD) Contractor: Mapstone

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; 6; 60; UCS (MPa); UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) (<20; 20-40; 40-100; 100-300; 300-1000; >1000) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 4.5 | | | SM: Silty SAND: fine grained, rounded to sub-rounded; pale grey to yellow; low plasticity fines, with organics (Topsoil). | | D | | | | |
| | | | | | | 4.4 | | | SP: SAND: fine to medium grained, rounded to sub-rounded, poorly graded; yellow to pale brown; trace organics (Dune sand). | | | | | | |
| | | | | | | | 1 | | | | | | | | 1.00m:SPTLS 1<br>1.0m:SPT: (4,5,6) N=11<br>Rec.=450mm |
| | | | | | | | | | | | M | | | | |
| | | | | | | | 2 | | | MD | | | | | |
| ADH | | | | | | | | | | | | | | | 2.50m:SPTLS 2<br>2.5m:SPT: (4,5,8) N=13<br>Rec.=450mm |
| | | ▼ | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | 4 | | | | W | | | | 4.00m:SPTLS 3<br>4.0m:SPT: (1,2,2) N=4<br>Rec.=450mm |
| | | | | | | | | | | L | | | | | |
| | | | | | | | 5 | | | | | | | | |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH06-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 09/10/2025 End Date: 10/10/2025 1:25 Sheet 2 of 3

CMW Geosciences
Great People | Practical Solutions

Logged by: MR Position: E.543427m N.6895837m Plant: Geo 205
Checked by: Mark A Elevation: 4.499 m (mAHD) Contractor: Mapstone

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (UCS (MPa) / UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADH | | | | | | | | | SP: SAND: fine to medium grained, rounded to sub-rounded, poorly graded; yellow to pale brown; trace organics (Dune sand). | L | W | | | | 5.50m:SPTLS 4<br>5.5m:SPT: (8/110mm) N=R Rec.=0mm |
| | | | | | | | | | | VD | | | | | |
| | | | 90 | 80 | 12 | -1.5 | 6 | | METAGREYWACKE: fine to medium grained; red; distinctly gently foliated; with some iron staining through rockmass; breacciated | | | | MW | | 6.00-7.00m:C 5<br>6.12-6.16m:JT, 45°, UN, RO, SN<br>Is50=2.86MPa<br>Is50=5.98MPa<br>6.30m:JT, 15°, UN, RO, SN |
| | | | | | | -2.2 | | | CORE LOSS: | | | | XW | | 6.60-6.70m:CRS, (medium to coarse, angular to sub-angular, red mottled brown,grey sand with traces of fine to medium, angular to sub-angular, red mottled brown, gravels) |
| | | | 100 | 45 | 15 | -2.5 | 7 | | METASILTSTONE: fine grained, dark grey mottled pale grey, extremely weathered throughout with intermittent rock fabric observed; brecciated throughout; | | | | XW | | 6.75-7.20m:EWS<br>6.75m:JT, UN, RO, SN<br>7.00-8.30m:C 6<br>7.90-8.00m:EWS |
| | | | 80 | 55 | 0 | | 8 | | ... at 8.30m, colour become pale grey | | | | | | 8.00-8.20m:EWS<br>8.00m:C<br>8.30m:JT, UN, RO, CO, silty clay with sand<br>8.35m:JT, 30°, UN, RO, CO, silty clay with sand<br>8.40-8.50m:JT, 45°, UN, RO, CO, silty clay with sand<br>8.55m:JT, 45°, UN, RO, CO, silty clay with sand<br>8.77m:JT, 15°, UN, RO, CO, silty clay with sand |
| | | | | | | -4.3 | | | CORE LOSS: | | | | | | |
| | | | 100 | 100 | 90 | -4.5 | 9 | | METAGREYWACKE: fine to medium grained; dark grey with pale grey-red streaks, distinctly gently foliated; with some iron staining through rockmass; intermittent clay seams. | | | | HW | | 9.00m:C<br>9.50m:JT, 45°, UN, RO, SN |
| | | | | | | -5.5 | 10 | | | | | | | | 10.00m:C |

Termination reason: Target Material
Remarks:

# BOREHOLE LOG - BH06-CMW

Client: Eastview
Project: NALU
Location: 122 Marine Parade, Miami QLD 4220 Sub Location:
Project ID: GOL2025-0134
Start Date: 09/10/2025 End Date: 10/10/2025 1:25 Sheet 3 of 3

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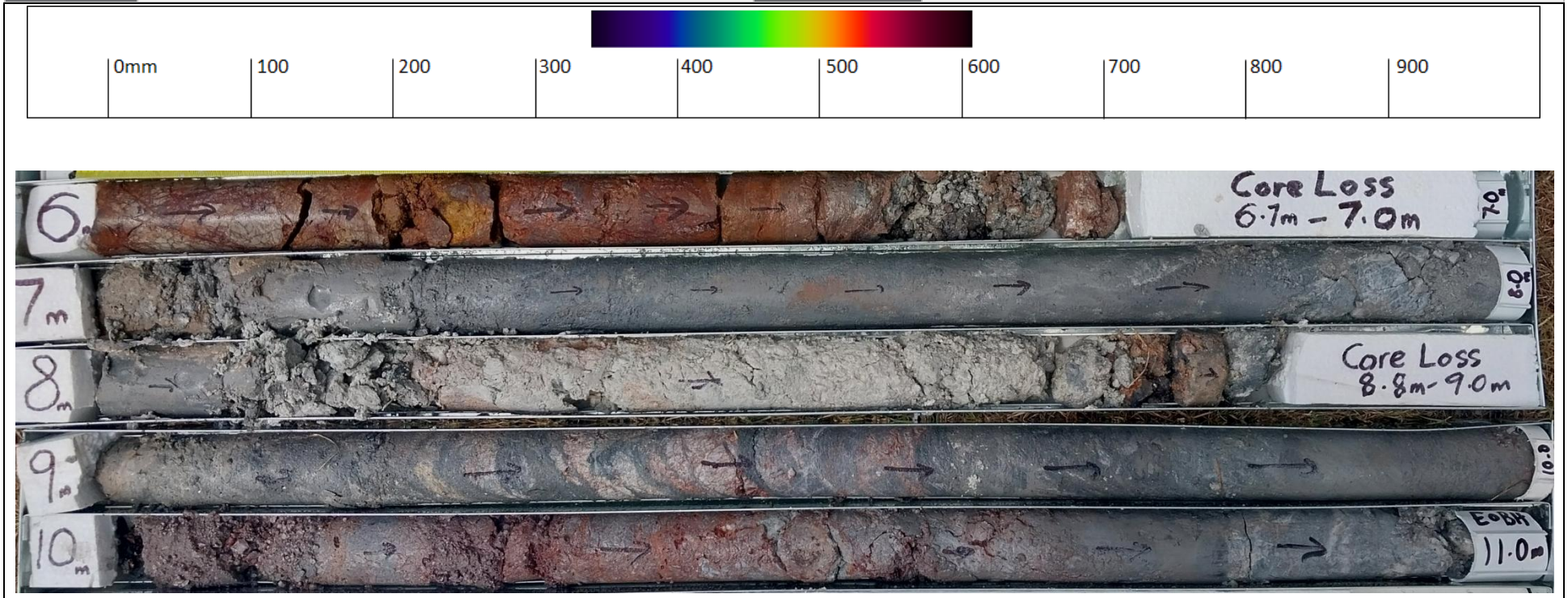
Logged by: MR Position: E.543427m N.6895837m Plant: Geo 205
Checked by: Mark A Elevation: 4.499 m (mAHD) Contractor: Mapstone

| Drilling Method | Well | Groundwater | Coring TCR | Coring SCR | Coring RQD | RL (m) | Depth (m) | Graphic Log | Rock/Soil Description | Consistency | Moisture Condition | Rock Strength (VL L M H VH EH; 6; 60; UCS (MPa); UCS (from Is50)) | Cementation/ Weathering | Defect Spacing (mm) (<20; 20-40; 40-100; 100-300; 300-1000; >1000) | Samples, test results and additional Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NML C | | | 100 | 90 | 45 | | 11 | | METAGREYWACKE : fine grained, dark grey mottled pale grey, extremely weathered throughout with intermittent rock fabric observed; brecciated throughout;<br>*... at 10.00m, colour becoming dark red*<br>Borehole terminated at 11.0 m | | | | HW<br>MW | | Is50=0.12MPa<br>Is50=0.17MPa<br>10.40-10.50m:CRS<br>10.70-10.80m:JT, UN, RO, SN<br>10.80-11.00m:JT, 45°, UN, RO, SN<br>Is50=0.82MPa |

Termination reason: Target Material
Remarks:

# CORE PHOTOGRAPHS: BH06-CMW

| | | | |
|---|---|---|---|
| **Client:** | Eastview | **Project:** | Nalu |
| **Location:** | 122 Marine Parade, Miami | **Project No:** | GOL2025-0134 |
| **Position:** | | **Date:** | October 2025 |
| **Angle:** | Horizontal 90° | **Hole Diameter:** | NMLC |
| **Plant:** | Geo205 | **Contractor:** | MGS |
| **Logged by:** | MR | **Checked by:** | MA |




**BH06-CMW: 6m to 11m**

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# APPENDIX C
## Lab Results

Construction Sciences
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Brisbane South Laboratory
57 Mudgee Street, Kingston, QLD, 4114
Phone: 07 3320 8500
Email/Fax: Brisbane@constructionsciences.net

**Report for**
**Determination of Uniaxial Compressive Strength -**
**Rock Strength Less Than 50 Mpa**

| | | | |
|---|---|---|---|
| Client: | 13385 - Construction Sciences Gold Coast Lab | Report No: | 1979/ER/2964-1 |
| Address: | 21 Activity Cres Molendinar Qld 4214 | Project No: | 1979/P/777 |
| | | Request No: | 1979/T/25-17675 |
| Project: | Laboratory Testing | Sample No: | 1979/S/25-97359 |
| | | Client Request Ref: | 13385/CC/2263 |
| Client Reference: | 13385/S/25-64020 | Area / Location: | Nalu, 122 Marine Parade, Miami Beach |
| Component: | | Bore Hole/Test Pit | CMW-BH03 |
| Sample Source: | On-Site | Depth below ESL | 1.50-1.70 |
| Sample Description: | Rock Core | | - - |
| Sampling Method: | Tested As Received | | - - |
| Sampled By: | Client Supplied | Date Sampled: | 13/10/25 |
| Tested By: | TR | Date Tested: | 14/10/25 |

**Test Method: AS 4133.4.2.2**

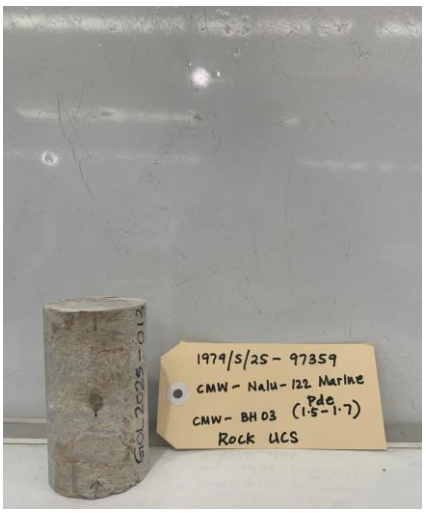
| | | | |
|---|---|---|---|
| Condition at Test: | 'As Received' Moisture Content | Storage Curing/Environment: | |
| Storage Period: (Days) | | | Tested As Received |
| Moisture Content: (%) | 0.5 | (AS 4133.1.1.1) | |
| Average Diameter: (mm) | 51.6 | Height: (mm) | 100.9 |
| Rate of Displacement: (mm/min) | 0.010 | Test Duration: (hh:mm:ss) | 00:10:02 |

**Uniaxial Compressive Strength (MPa): 14**

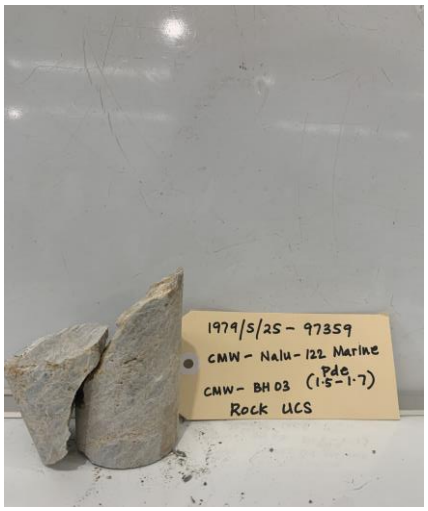
Description of Failure: Single Shear Plane

**Photographs:**

**Before Test**




**After Test**




Remarks: Results Apply to the Sample(s) as Received
The length to diameter ratio falls outside the test method limits of 2:1 to 3:1

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**ACCREDITATION**

**Corporate Site Number: 1979**
**Accreditation Number: 1986**

Accredited for Compliance with ISO/IEC 17025 - Testing.

RRathnayake

Name: Theja Rathnayake
Function: Authorised Signatory
Date: 16-Oct-25

Construction Sciences
a kiwa company

**Construction Sciences Pty Ltd**
ABN: 74 128 806 735

**Address:**
21 Activity Crescent,
Molendinar QLD 4214

**Laboratory:** Gold Coast Laboratory
**Phone:** 07 5597 2720
**Fax:**
**Email:** GoldCoast@constructionsciences.net

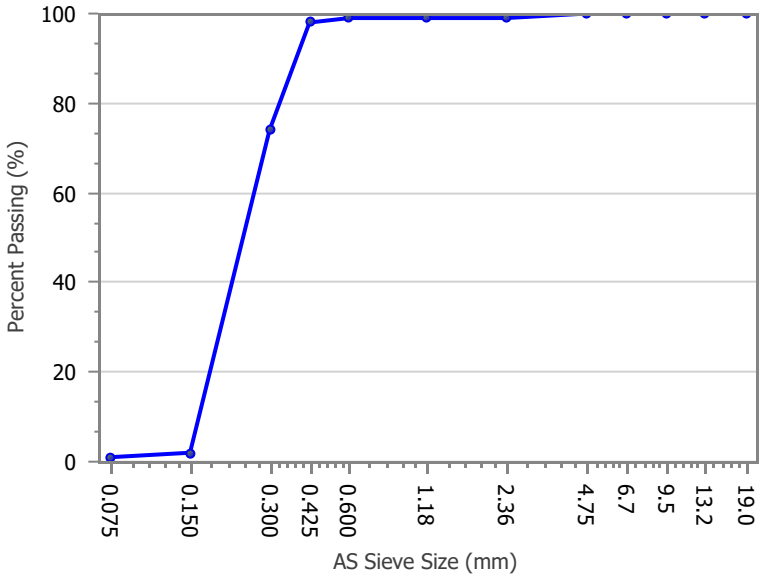
# QUALITY OF MATERIALS REPORT

| | | | |
|---|---|---|---|
| Client: | CMW Geosciences | Report Number: | 13385/R/25-25079-1 |
| Client Address: | Level 3, 1 Breakfast Creek Rd, NEWSTEAD | Project Number: | 13385/P/1525 |
| Project: | Nalu, 122 Marine Parade, Miami Beach | Lot Number: | - |
| Location: | (various) | Internal Test Request: | 13385/T/25-13892 |
| Component: | Bore Hole Testing | Client Reference/s: | GOL2025-0134 |
| Area Description: | On-Site | Report Date / Page: | 15/10/2025 Page 1 of 2 |

| | | | | |
|---|---|---|---|---|
| Test Procedures | AS1289.3.6.1, AS1289.1.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.3.1 | | | |
| Sample Number | 13385/S/25-64018 | Location | | CMW-BH02 |
| Client Reference | GOL2025-0134 | | | |
| Sampling Method | Tested As Received | | | |
| Sampled By | Client Supplied | Depth | m | 1.00 - 1.45 |
| Date Sampled/Tested | 13/10/2025 / 15/10/2025 | Material Source | Insitu | |
| PSD Preparation | Unwashed / Oven | Material Type | Insitu | |
| Atterberg Preparation | - / Oven Dried | Prep Material > 53.0mm (%) | | |
| Material Description | SP SAND | | | |

| AS Sieve (mm) | Specification Minimum (%) | Percent Passing (%) | Specification Maximum (%) |
|---|---|---|---|
| 19.0 | | **100** | |
| 13.2 | | **100** | |
| 9.5 | | **100** | |
| 6.7 | | **100** | |
| 4.75 | | **100** | |
| 2.36 | | **99** | |
| 1.18 | | **99** | |
| 0.600 | | **99** | |
| 0.425 | | **98** | |
| 0.300 | | **74** | |
| 0.150 | | **2** | |
| 0.075 | | **1** | |

PARTICLE SIZE DISTRIBUTION GRAPH




| Test Result | Specification Minimum (%) | Result | Specification Maximum (%) | Test Result | Specification Minimum (%) | Result | Specification Maximum (%) |
|---|---|---|---|---|---|---|---|
| Liquid Limit (%) | | **Can't be determined** | | 0.075/0.425 Fines Ratio | | **0.01** | |
| Plastic Limit (%) | | **Can't be determined** | | PI x 0.425 Ratio (%) | | **-** | |
| Plastic Index (%) | | **Non Plastic** | | LS x 0.425 Ratio (%) | | **-** | |
| Linear Shrinkage (%) | | | | Shrinkage Observations | | | |

| | |
|---|---|
| Remarks | Results apply to the sample/s as received., |

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NATA

Accreditation Number: 1986
Corporate Site Number: 13385

Approved Signatory: Steven Whatley
Form ID: W85Rep Rev 3

Construction Sciences
a kiwa company

**Construction Sciences Pty Ltd**
ABN: 74 128 806 735

**Address:**
21 Activity Crescent,
Molendinar QLD 4214

**Laboratory:** Gold Coast Laboratory
**Phone:** 07 5597 2720
**Fax:**
**Email:** GoldCoast@constructionsciences.net

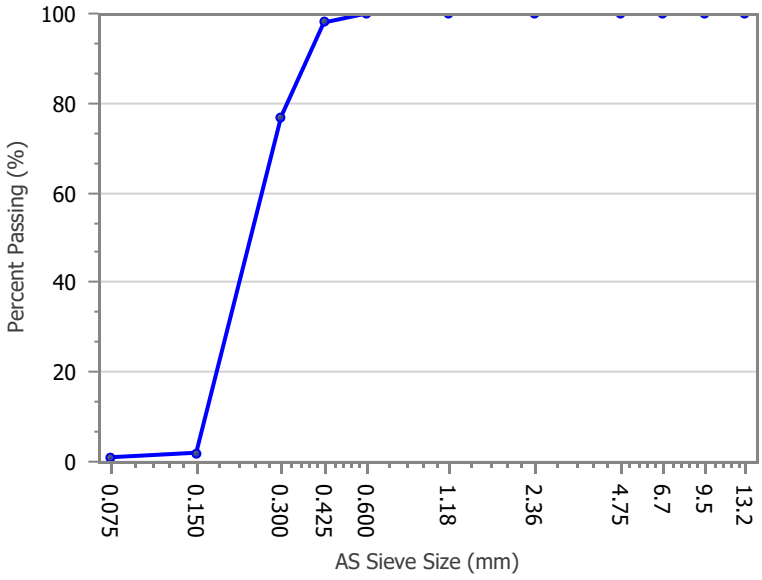
# QUALITY OF MATERIALS REPORT

| | | | |
|---|---|---|---|
| Client: | CMW Geosciences | Report Number: | 13385/R/25-25079-1 |
| Client Address: | Level 3, 1 Breakfast Creek Rd, NEWSTEAD | Project Number: | 13385/P/1525 |
| Project: | Nalu, 122 Marine Parade, Miami Beach | Lot Number: | - |
| Location: | (various) | Internal Test Request: | 13385/T/25-13892 |
| Component: | Bore Hole Testing | Client Reference/s: | GOL2025-0134 |
| Area Description: | On-Site | Report Date / Page: | 15/10/2025 Page 2 of 2 |

| | | | | |
|---|---|---|---|---|
| Test Procedures | AS1289.3.6.1, AS1289.1.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.3.1 | | | |
| Sample Number | 13385/S/25-64019 | Location | | CMW-BH05 |
| Client Reference | GOL2025-0134 | | | |
| Sampling Method | Tested As Received | | | |
| Sampled By | Client Supplied | Depth | m | 1.00 - 1.45 |
| Date Sampled/Tested | 13/10/2025 / 15/10/2025 | Material Source | Insitu | |
| PSD Preparation | Unwashed / Oven | Material Type | Insitu | |
| Atterberg Preparation | - / Oven Dried | Prep Material > 53.0mm (%) | | |
| Material Description | SP SAND | | | |

| AS Sieve (mm) | Specification Minimum (%) | Percent Passing (%) | Specification Maximum (%) |
|---|---|---|---|
| 13.2 | | **100** | |
| 9.5 | | **100** | |
| 6.7 | | **100** | |
| 4.75 | | **100** | |
| 2.36 | | **100** | |
| 1.18 | | **100** | |
| 0.600 | | **100** | |
| 0.425 | | **98** | |
| 0.300 | | **77** | |
| 0.150 | | **2** | |
| 0.075 | | **1** | |

PARTICLE SIZE DISTRIBUTION GRAPH




| Test Result | Specification Minimum (%) | Result | Specification Maximum (%) | Test Result | Specification Minimum (%) | Result | Specification Maximum (%) |
|---|---|---|---|---|---|---|---|
| Liquid Limit (%) | | **Can't be determined** | | 0.075/0.425 Fines Ratio | | **0.01** | |
| Plastic Limit (%) | | **Can't be determined** | | PI x 0.425 Ratio (%) | | **-** | |
| Plastic Index (%) | | **Non Plastic** | | LS x 0.425 Ratio (%) | | **-** | |
| Linear Shrinkage (%) | | | | Shrinkage Observations | | | |

| | |
|---|---|
| Remarks | Results apply to the sample/s as received., |

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NATA

Accreditation Number: 1986
Corporate Site Number: 13385

Approved Signatory: Steven Whatley
Form ID: W85Rep Rev 3

Construction Sciences
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**Construction Sciences Pty Ltd**
ABN: 74 128 806 735

**Address:**
21 Activity Crescent,
Molendinar QLD 4214

**Laboratory:** **Gold Coast Laboratory**
**Phone:** 07 5597 2720
**Fax:**
**Email:** GoldCoast@constructionsciences.net

# MOISTURE CONTENT REPORT

| | | | |
|---|---|---|---|
| Client: | CMW Geosciences | Report Number: | 13385/R/25-25080-1 |
| Client Address: | Level 3, 1 Breakfast Creek Rd, NEWSTEAD | Project Number: | 13385/P/1525 |
| Project: | Nalu, 122 Marine Parade, Miami Beach | Lot Number: | - |
| Location: | (various) | Internal Test Request: | 13385/T/25-13892 |
| Component: | Bore Hole Testing | Client Reference/s: | GOL2025-0134 |
| Area Description: | On-Site | Report Date / Page: | 15/10/2025 Page 1 of 1 |

| Test Procedures: | AS1289.2.1.1, AS1289.1.1 |
|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Sample Number | | 13385/S/25-64018 | 13385/S/25-64019 | | |
| ID / Client ID | | GOL2025-0134 | GOL2025-0134 | | |
| Lot Number | | - | - | | |
| Date / Time Sampled | | 13/10/2025 | 13/10/2025 | | |
| Sampling Method | | Tested As Received | Tested As Received | | |
| Sampled By | | Client Supplied | Client Supplied | | |
| Tested By | | Deanne Towie | Deanne Towie | | |
| Date Tested | | 14/10/2025 | 14/10/2025 | | |
| Material Source | | Insitu | Insitu | | |
| Material Type | | Insitu | Insitu | | |
| Location | | CMW-BH02 | CMW-BH05 | | |
| Depth | m | 1.00 - 1.45 | 1.00 - 1.45 | | |
| **Moisture Content (%)** | | **3.0** | **2.3** | | |

| | | | | | |
|---|---|---|---|---|---|
| Sample Number | | | | | |
| ID / Client ID | | | | | |
| Lot Number | | | | | |
| Date / Time Sampled | | | | | |
| Sampling Method | | | | | |
| Sampled By | | | | | |
| Tested By | | | | | |
| Date Tested | | | | | |
| Material Source | | | | | |
| Material Type | | | | | |
| Location | | | | | |
| Depth | m | | | | |
| **Moisture Content (%)** | | | | | |

| Remarks | Results apply to the sample/s as received., |
|---|---|

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Accreditation Number: 1986
Corporate Site Number: 13385

Approved Signatory: Steven Whatley
Form ID: W20Rep Rev 3

**CMW Geosciences (East Coast)**
**21 Activity Crescent**
**Molendinar**
**QLD 4214**

**NATA Accredited**
**Accreditation Number 1261**
**Site Number 20794 & 2780**

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

**Attention:** **Mark argent**

**Report** **1280696-S**
Project name NALU 122 MARINE PARADE MIAMI BEACH
Project ID GOI2025-0134
Received Date Oct 15, 2025

| **Client Sample ID** | | | **CMW-BH05 0.5** | **CMW-BH05 1.0** | **CMW-BH05 2.0** | **CMW-BH05 2.5** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **B25-Oc0047649** | **B25-Oc0047650** | **B25-Oc0047651** | **B25-Oc0047652** |
| **Date Sampled** | | | **Not Provided**[I12] | **Not Provided**[I12] | **Oct 09, 2025** | **Not Provided**[I12] |
| Test/Reference | LOR | Unit | | | | |
| **Acid Sulfate Soils Field pH Test** | | | | | | |
| pH-F (Field pH test)* | 0.1 | pH Units | 6.4 | 6.5 | 6.3 | 6.6 |
| pH-FOX (Field pH Peroxide test)* | 0.1 | pH Units | 3.5 | 4.0 | 3.6 | 4.0 |
| Reaction Ratings*[S05] | 0 | - | 2.0 | 2.0 | 4.0 | 2.0 |
| | | | | | | |
| Chloride | 5 | mg/kg | - | - | 64 | - |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | 10 | uS/cm | - | - | 13 | - |
| pH (1:5 Aqueous extract at 25 °C as rec.) | 0.1 | pH Units | - | - | 6.6 | - |
| Resistivity* | 0.5 | ohm.m | - | - | 630 | - |
| Sulphate (as SO4) | 30 | mg/kg | - | - | < 30 | - |
| **Sample Properties** | | | | | | |
| % Moisture | 1 | % | - | - | 1.9 | - |

| **Client Sample ID** | | | **CMW-BH05 3.0** | **CMW-BH05 3.5** | **CMW-BH04 0.5** | **CMW-BH04 1.0** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **B25-Oc0047653** | **B25-Oc0047654** | **B25-Oc0047655** | **B25-Oc0047656** |
| **Date Sampled** | | | **Not Provided**[I12] | **Not Provided**[I12] | **Not Provided**[I12] | **Not Provided**[I12] |
| Test/Reference | LOR | Unit | | | | |
| **Acid Sulfate Soils Field pH Test** | | | | | | |
| pH-F (Field pH test)* | 0.1 | pH Units | 6.7 | 6.9 | 7.4 | 7.4 |
| pH-FOX (Field pH Peroxide test)* | 0.1 | pH Units | 4.1 | 4.7 | 4.9 | 5.5 |
| Reaction Ratings*[S05] | 0 | - | 3.0 | 3.0 | 4.0 | 3.0 |
| | | | | | | |
| Chloride | 5 | mg/kg | < 5 | - | - | 78 |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | 10 | uS/cm | < 10 | - | - | < 10 |
| pH (1:5 Aqueous extract at 25 °C as rec.) | 0.1 | pH Units | 7.1 | - | - | 7.5 |
| Resistivity* | 0.5 | ohm.m | 1300 | - | - | 1100 |
| Sulphate (as SO4) | 30 | mg/kg | < 30 | - | - | 34 |
| **Sample Properties** | | | | | | |
| % Moisture | 1 | % | 19 | - | - | 20 |

| Client Sample ID | | | CMW-BH04 2.0 | CMW-BH04 2.5 |
|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil |
| Eurofins Sample No. | | | B25-Oc0047657 | B25-Oc0047658 |
| Date Sampled | | | Not Provided[I12] | Not Provided[I12] |
| Test/Reference | LOR | Unit | | |
| **Acid Sulfate Soils Field pH Test** | | | | |
| pH-F (Field pH test)* | 0.1 | pH Units | 7.2 | 7.2 |
| pH-FOX (Field pH Peroxide test)* | 0.1 | pH Units | 5.4 | 5.4 |
| Reaction Ratings*[S05] | 0 | - | 3.0 | 3.0 |
| | | | | |
| Chloride | 5 | mg/kg | < 5 | - |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | 10 | uS/cm | 29 | - |
| pH (1:5 Aqueous extract at 25 °C as rec.) | 0.1 | pH Units | 7.1 | - |
| Resistivity* | 0.5 | ohm.m | 1700 | - |
| Sulphate (as SO4) | 30 | mg/kg | < 30 | - |
| **Sample Properties** | | | | |
| % Moisture | 1 | % | 23 | - |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Acid Sulfate Soils Field pH Test | Brisbane | Oct 20, 2025 | 7 Days |
| - Method: LTM-GEN-7060 Determination of field pH (pHF) and field pH peroxide (pHFOX) tests | | | |
| Chloride | Melbourne | Oct 17, 2025 | 28 Days |
| - Method: LTM-INO-4090 Chloride by Discrete Analyser | | | |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | Brisbane | Oct 20, 2025 | 7 Days |
| - Method: LTM-INO-4030 Conductivity | | | |
| pH (1:5 Aqueous extract at 25 °C as rec.) | Brisbane | Oct 20, 2025 | 7 Days |
| - Method: LTM-GEN-7090 pH in water by ISE | | | |
| Sulphate (as SO4) | Melbourne | Oct 17, 2025 | 28 Days |
| - Method: LTM-INO-4110 Sulfate by Discrete Analyser | | | |
| % Moisture | Brisbane | Oct 16, 2025 | 14 Days |
| - Method: LTM-GEN-7080 Moisture | | | |

eurofins

**Eurofins Environment Testing Australia Pty Ltd**
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Site# 20794 & 2780

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NATA# 1261
Site# 25079

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

**Perth**
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

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

**Company Name:** CMW Geosciences (East Coast)
**Address:** 21 Activity Crescent
Molendinar
QLD 4214

**Project Name:** NALU 122 MARINE PARADE MIAMI BEACH
**Project ID:** GOI2025-0134

**Order No.:**
**Report #:** 1280696
**Phone:**
**Fax:**

**Received:** Oct 15, 2025 5:32 PM
**Due:** Oct 23, 2025
**Priority:** 5 Day
**Contact Name:** Mark argent

**Eurofins Analytical Services Manager : Zoe Flynn**

| Sample Detail | | | | | | HOLD* | Acid Sulfate Soils Field pH Test | Aggressivity Soil Set | Moisture Set | Eurofins Suite B1 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | X | | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780** | | | | | | X | X | X | X | X |
| **External Laboratory** | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | |
| 1 | CMW-BH05 0.5 | Not Provided | | Soil | B25-Oc0047649 | | X | | | |
| 2 | CMW-BH05 1.0 | Not Provided | | Soil | B25-Oc0047650 | | X | | | |
| 3 | CMW-BH05 2.0 | Oct 09, 2025 | | Soil | B25-Oc0047651 | | X | X | X | |
| 4 | CMW-BH05 2.5 | Not Provided | | Soil | B25-Oc0047652 | | X | | | |
| 5 | CMW-BH05 3.0 | Not Provided | | Soil | B25-Oc0047653 | | X | X | X | |
| 6 | CMW-BH05 3.5 | Not Provided | | Soil | B25-Oc0047654 | | X | | | |
| 7 | CMW-BH04 0.5 | Not Provided | | Soil | B25-Oc0047655 | | X | | | |
| 8 | CMW-BH04 1.0 | Not Provided | | Soil | B25-Oc0047656 | | X | X | X | |

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Site# 1254

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**Company Name:** CMW Geosciences (East Coast)
**Address:** 21 Activity Crescent
Molendinar
QLD 4214

**Project Name:** NALU 122 MARINE PARADE MIAMI BEACH
**Project ID:** GOI2025-0134

**Order No.:**
**Report #:** 1280696
**Phone:**
**Fax:**

**Received:** Oct 15, 2025 5:32 PM
**Due:** Oct 23, 2025
**Priority:** 5 Day
**Contact Name:** Mark argent

**Eurofins Analytical Services Manager : Zoe Flynn**

| Sample Detail | | | | | | HOLD* | Acid Sulfate Soils Field pH Test | Aggressivity Soil Set | Moisture Set | Eurofins Suite B1 |
|---|---|---|---|---|---|---|---|---|---|---|
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| **Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780** | | | | | | X | X | X | X | X |
| 9 | CMW-BH04 2.0 | Not Provided | | Soil | B25-Oc0047657 | | X | X | X | |
| 10 | CMW-BH04 2.5 | Not Provided | | Soil | B25-Oc0047658 | | X | | | |
| 11 | CMW-BH05 1.5 | Not Provided | | Soil | B25-Oc0047659 | X | | | | |
| 12 | CMW-BH05 4.0 | Not Provided | | Soil | B25-Oc0047660 | X | | | | |
| 13 | CMW-BH02 0.5 | Not Provided | | Soil | B25-Oc0047661 | X | | | | |
| 14 | CMW-BH02 1.5 | Not Provided | | Soil | B25-Oc0047662 | X | | | | |
| 15 | CMW-BH02 2.5 | Oct 08, 2025 | | Soil | B25-Oc0047663 | X | | | | |
| 16 | CMW-BH02 4.0 | Not Provided | | Soil | B25-Oc0047664 | X | | | | |
| 17 | CMW-BH03 0.5 | Oct 07, 2025 | | Soil | B25-Oc0047665 | X | | | | |
| 18 | CMW-BH01 | Oct 07, 2025 | | Water | B25-Oc0054445 | | | | | X |

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|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | X | | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780** | X | X | X | X | X |
| **Test Counts** | 7 | 10 | 4 | 4 | 1 |

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## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

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

### Units

| | | |
|---|---|---|
| **mg/kg:** milligrams per kilogram | **mg/L:** milligrams per litre | **ppm:** parts per million |
| **µg/L:** micrograms per litre | **ppb:** parts per billion | **%:** Percentage |
| **org/100 mL:** Organisms per 100 millilitres | **NTU:** Nephelometric Turbidity Units | **MPN/100 mL:** Most Probable Number of organisms per 100 millilitres |
| **CFU:** Colony Forming Unit | **Colour:** Pt-Co Units (CU) | |

### Terms

| | |
|---|---|
| **APHA** | American Public Health Association |
| **CEC** | Cation Exchange Capacity |
| **COC** | Chain of Custody |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **CRM** | Certified Reference Material (ISO17034) - reported as percent recovery. |
| **Dry** | Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **LOR** | Limit of Reporting. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **Method Blank** | In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water. |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **SRA** | Sample Receipt Advice |
| **Surr - Surrogate** | The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria. |
| **TBTO** | Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits. |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **TEQ** | Toxic Equivalency Quotient or Total Equivalence |
| **QSM** | US Department of Defense Quality Systems Manual Version 6.0 |
| **US EPA** | United States Environmental Protection Agency |
| **WA DWER** | Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA |

### QC - Acceptance Criteria

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

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

| | |
|---|---|
| Results <10 times the LOR: | No Limit |
| Results between 10-20 times the LOR: | RPD must lie between 0-50% |
| Results >20 times the LOR: | RPD must lie between 0-30% |

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

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

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

### QC Data General Comments

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

**Quality Control Results**

| Test | | | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | | | |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | | | uS/cm | < 10 | | | 10 | Pass | |
| Sulphate (as SO4) | | | mg/kg | < 30 | | | 30 | Pass | |
| **Method Blank** | | | | | | | | | |
| Chloride | | | mg/kg | < 5 | | | 5 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| Chloride | | | % | 100 | | | 70-130 | Pass | |
| Sulphate (as SO4) | | | % | 86 | | | 70-130 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| | | | | Result 1 | | | | | |
| Chloride | B25-Oc0048088 | NCP | % | 99 | | | 70-130 | Pass | |
| Sulphate (as SO4) | B25-Oc0048088 | NCP | % | 84 | | | 70-130 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Acid Sulfate Soils Field pH Test** | | | | Result 1 | Result 2 | RPD | | | |
| pH-F (Field pH test)* | B25-Oc0047651 | CP | pH Units | 6.3 | 6.2 | pass | 20% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Chloride | B25-Oc0048089 | NCP | mg/kg | 44 | 50 | 13 | 30% | Pass | |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | R25-Oc0045546 | NCP | uS/cm | 62 | 61 | 1.0 | 30% | Pass | |
| pH (1:5 Aqueous extract at 25 °C as rec.) | B25-Oc0047651 | CP | pH Units | 6.6 | 6.4 | 1.7 | 30% | Pass | |
| Resistivity* | M25-Oc0051972 | NCP | ohm.m | 110 | 92 | 20 | 30% | Pass | |
| Sulphate (as SO4) | B25-Oc0048089 | NCP | mg/kg | 41 | 31 | 27 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Sample Properties** | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | B25-Oc0047656 | CP | % | 20 | 19 | 5.0 | 30% | Pass | |

## Comments

### Sample Integrity

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

### Qualifier Codes/Comments

| Code | Description |
|---|---|
| I12 | Where sampling date has not been provided, Eurofins \| Environment Testing is not able to determine whether analysis has been performed within recommended holding times. |
| S05 | Field Screen uses the following fizz rating to classify the rate the samples reacted to the peroxide: 1.0; No reaction to slight. 2.0; Moderate reaction. 3.0; Strong reaction with persistent froth. 4.0; Extreme reaction. |

### Authorised by:

| | |
|---|---|
| Jacinta Baker | Analytical Services Manager |
| Jonathon Angell | Senior Analyst-Inorganic |
| Jonathon Angell | Senior Analyst-Sample Properties |
| Jonathon Angell | Senior Analyst-SPOCAS |
| Luke Holt | Senior Analyst-Inorganic |
| Mary Makarios | Senior Analyst-Inorganic |

**Glenn Jackson**
**Managing Director**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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**CMW Geosciences (East Coast)**
**21 Activity Crescent**
**Molendinar**
**QLD 4214**

**NATA Accredited**
**Accreditation Number 1261**
**Site Number 20794 & 2780**

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

**Attention:** **Mark argent**

**Report** **1280696-W**
Project name NALU 122 MARINE PARADE MIAMI BEACH
Project ID GOI2025-0134
Received Date Oct 15, 2025

| **Client Sample ID** | | | **CMW-BH01** |
|---|---|---|---|
| **Sample Matrix** | | | **Water** |
| **Eurofins Sample No.** | | | **B25-Oc0054445** |
| **Date Sampled** | | | **Oct 07, 2025** |
| Test/Reference | LOR | Unit | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | |
| TRH C6-C9 | 0.02 | mg/L | 0.72 |
| TRH C10-C14 | 0.05 | mg/L | 0.43 |
| TRH C15-C28 | 0.1 | mg/L | 0.8 |
| TRH C29-C36 | 0.1 | mg/L | < 0.1 |
| TRH C10-C36 (Total) | 0.1 | mg/L | 1.23 |
| **BTEX** | | | |
| Benzene | 0.001 | mg/L | 0.049 |
| Toluene | 0.001 | mg/L | 0.33 |
| Ethylbenzene | 0.001 | mg/L | 0.016 |
| m&p-Xylenes | 0.002 | mg/L | 0.062 |
| o-Xylene | 0.001 | mg/L | 0.058 |
| Xylenes - Total* | 0.003 | mg/L | 0.12 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 96 |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | |
| Naphthalene[N02] | 0.01 | mg/L | < 0.01 |
| TRH >C10-C16 less Naphthalene (F2)*[N01] | 0.05 | mg/L | 0.5 |
| TRH C6-C10 | 0.02 | mg/L | 0.81 |
| TRH C6-C10 less BTEX (F1)[N04] | 0.02 | mg/L | 0.30 |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | |
| TRH >C10-C16 | 0.05 | mg/L | 0.50 |
| TRH >C16-C34 | 0.1 | mg/L | 0.6 |
| TRH >C34-C40 | 0.1 | mg/L | < 0.1 |
| TRH >C10-C40 (total)* | 0.1 | mg/L | 1.1 |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Brisbane | Oct 22, 2025 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Brisbane | Oct 22, 2025 | 14 Days |
| - Method: USEPA SW846 8260 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Brisbane | Oct 22, 2025 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Brisbane | Oct 22, 2025 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |

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| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | X | | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780** | | | | | | X | X | X | X | X |
| 9 | CMW-BH04 2.0 | Not Provided | | Soil | B25-Oc0047657 | | X | X | X | |
| 10 | CMW-BH04 2.5 | Not Provided | | Soil | B25-Oc0047658 | | X | | | |
| 11 | CMW-BH05 1.5 | Not Provided | | Soil | B25-Oc0047659 | X | | | | |
| 12 | CMW-BH05 4.0 | Not Provided | | Soil | B25-Oc0047660 | X | | | | |
| 13 | CMW-BH02 0.5 | Not Provided | | Soil | B25-Oc0047661 | X | | | | |
| 14 | CMW-BH02 1.5 | Not Provided | | Soil | B25-Oc0047662 | X | | | | |
| 15 | CMW-BH02 2.5 | Oct 08, 2025 | | Soil | B25-Oc0047663 | X | | | | |
| 16 | CMW-BH02 4.0 | Not Provided | | Soil | B25-Oc0047664 | X | | | | |
| 17 | CMW-BH03 0.5 | Oct 07, 2025 | | Soil | B25-Oc0047665 | X | | | | |
| 18 | CMW-BH01 | Oct 07, 2025 | | Water | B25-Oc0054445 | | | | | X |

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**Company Name:** CMW Geosciences (East Coast)
**Address:** 21 Activity Crescent
Molendinar
QLD 4214

**Project Name:** NALU 122 MARINE PARADE MIAMI BEACH
**Project ID:** GOI2025-0134

**Order No.:**
**Report #:** 1280696
**Phone:**
**Fax:**

**Received:** Oct 15, 2025 5:32 PM
**Due:** Oct 23, 2025
**Priority:** 5 Day
**Contact Name:** Mark argent

**Eurofins Analytical Services Manager : Zoe Flynn**

| Sample Detail | HOLD* | Acid Sulfate Soils Field pH Test | Aggressivity Soil Set | Moisture Set | Eurofins Suite B1 |
|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | X | | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780** | X | X | X | X | X |
| **Test Counts** | 7 | 10 | 4 | 4 | 1 |

## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

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

### Units

| | | |
|---|---|---|
| **mg/kg:** milligrams per kilogram | **mg/L:** milligrams per litre | **ppm:** parts per million |
| **µg/L:** micrograms per litre | **ppb:** parts per billion | **%:** Percentage |
| **org/100 mL:** Organisms per 100 millilitres | **NTU:** Nephelometric Turbidity Units | **MPN/100 mL:** Most Probable Number of organisms per 100 millilitres |
| **CFU:** Colony Forming Unit | **Colour:** Pt-Co Units (CU) | |

### Terms

| | |
|---|---|
| **APHA** | American Public Health Association |
| **CEC** | Cation Exchange Capacity |
| **COC** | Chain of Custody |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **CRM** | Certified Reference Material (ISO17034) - reported as percent recovery. |
| **Dry** | Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **LOR** | Limit of Reporting. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **Method Blank** | In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water. |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **SRA** | Sample Receipt Advice |
| **Surr - Surrogate** | The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria. |
| **TBTO** | Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits. |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **TEQ** | Toxic Equivalency Quotient or Total Equivalence |
| **QSM** | US Department of Defense Quality Systems Manual Version 6.0 |
| **US EPA** | United States Environmental Protection Agency |
| **WA DWER** | Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA |

### QC - Acceptance Criteria

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

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

| | |
|---|---|
| Results <10 times the LOR: | No Limit |
| Results between 10-20 times the LOR: | RPD must lie between 0-50% |
| Results >20 times the LOR: | RPD must lie between 0-30% |

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

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

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

### QC Data General Comments

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

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | | |
| TRH C6-C9 | mg/L | < 0.02 | | | 0.02 | Pass | |
| TRH C10-C14 | mg/L | < 0.05 | | | 0.05 | Pass | |
| TRH C15-C28 | mg/L | < 0.1 | | | 0.1 | Pass | |
| TRH C29-C36 | mg/L | < 0.1 | | | 0.1 | Pass | |
| **Method Blank** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Toluene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Ethylbenzene | mg/L | < 0.001 | | | 0.001 | Pass | |
| m&p-Xylenes | mg/L | < 0.002 | | | 0.002 | Pass | |
| o-Xylene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Xylenes - Total* | mg/L | < 0.003 | | | 0.003 | Pass | |
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | mg/L | < 0.01 | | | 0.01 | Pass | |
| TRH C6-C10 | mg/L | < 0.02 | | | 0.02 | Pass | |
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| TRH >C10-C16 | mg/L | < 0.05 | | | 0.05 | Pass | |
| TRH >C16-C34 | mg/L | < 0.1 | | | 0.1 | Pass | |
| TRH >C34-C40 | mg/L | < 0.1 | | | 0.1 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | | |
| TRH C6-C9 | % | 101 | | | 70-130 | Pass | |
| TRH C10-C14 | % | 104 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 97 | | | 70-130 | Pass | |
| Toluene | % | 96 | | | 70-130 | Pass | |
| Ethylbenzene | % | 96 | | | 70-130 | Pass | |
| m&p-Xylenes | % | 95 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 95 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| TRH C6-C10 | % | 103 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| TRH >C10-C16 | % | 93 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | Result 1 | | | | | |
| TRH C6-C9 | B25-Oc0055163 | NCP | % | 105 | | | 70-130 | Pass | |
| TRH C10-C14 | B25-Oc0059692 | NCP | % | 105 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |
| Benzene | B25-Oc0055163 | NCP | % | 99 | | | 70-130 | Pass | |
| Toluene | B25-Oc0055163 | NCP | % | 99 | | | 70-130 | Pass | |
| Ethylbenzene | B25-Oc0055163 | NCP | % | 101 | | | 70-130 | Pass | |
| m&p-Xylenes | B25-Oc0055163 | NCP | % | 100 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| o-Xylene | B25-Oc0055163 | NCP | % | 98 | | | 70-130 | Pass | |
| Xylenes - Total* | B25-Oc0055163 | NCP | % | 99 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | | | | | |
| TRH C6-C10 | B25-Oc0055163 | NCP | % | 107 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | | | | | |
| TRH >C10-C16 | B25-Oc0059692 | NCP | % | 94 | | | 70-130 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | B25-Oc0052688 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| TRH C10-C14 | B25-Oc0059691 | NCP | mg/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| TRH C15-C28 | B25-Oc0059691 | NCP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| TRH C29-C36 | B25-Oc0059691 | NCP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | B25-Oc0052688 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Toluene | B25-Oc0052688 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Ethylbenzene | B25-Oc0052688 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| m&p-Xylenes | B25-Oc0052688 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| o-Xylene | B25-Oc0052688 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Xylenes - Total* | B25-Oc0052688 | NCP | mg/L | < 0.003 | < 0.003 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| Naphthalene | B25-Oc0052688 | NCP | mg/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| TRH C6-C10 | B25-Oc0052688 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| TRH >C10-C16 | B25-Oc0059691 | NCP | mg/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| TRH >C16-C34 | B25-Oc0059691 | NCP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| TRH >C34-C40 | B25-Oc0059691 | NCP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |

## Comments

### Sample Integrity

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

### Qualifier Codes/Comments

| Code | Description |
|---|---|
| N01 | F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis). |
| N02 | Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid. |
| N04 | F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. |

### Authorised by:

| | |
|---|---|
| Jacinta Baker | Analytical Services Manager |
| Jonathon Angell | Senior Analyst-Organic |
| Jonathon Angell | Senior Analyst-Volatile |



**Glenn Jackson**
**Managing Director**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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