Department of Planning, Housing and Infrastructure

Reference: SSI-9687-PA-492

Christina McInally
Senior Environmental Advisor
Snowy Hydro Limited

13/08/2026

Sent via the Major Projects Portal only

Subject: Snowy 2.0 - Main Works - Talbingo Rock Platform Trial Validation Report

Dear Mrs McInally,

I refer to the Talbingo Rock Platform Trial Validation Report (Trial Validation Report), submitted to the NSW Department of Planning, Housing and Infrastructure (the Department). I also acknowledge your response to the Department's review comments and request for additional information.

The Department approved the amended methodology detailed in the Talbingo Rock Platform Management Plan on the 1 May 2026 (Revision I dated 8 April 2026) to conduct the Stage 1 trial emplacement of tunnel boring machine (TBM) material. This covered the trial placement of 5,000 m³ of rockfill material below full supply level in the Talbingo Reservoir.

As a condition of the Stage 1 Talbingo Rock Platform Management Plan approval, a Trial Validation Report outlining outcomes from the trial was required to be submitted to the Department for review and approval prior to commencing Stage 2 full-scale emplacement works.

The Department has carefully reviewed the Trial Validation Report and is satisfied that it contains sufficient details including test results, ecological advice and proposed refinements to the methodology for Stage 2. I note the document has also been prepared to the satisfaction of the NSW EPA.

Accordingly, the Planning Secretary approves the Talbingo Rock Platform Trial Validation Report. Please ensure the Talbingo Rock Platform Management Plan is revised and submitted to the Department for review and approval prior to the commencement of Stage 2 works.

Please ensure you make the document publicly available on the project website at the earliest convenience.

Should you wish to discuss the matter further, please contact Katie Weekes on 4927 3223.

Yours sincerely,

Nicole Brewer
Director
Energy Assessments

As nominee of the Planning Secretary

future generation

webuild | clough | lane

REPORT

SNOWY 2.0 MAIN WORKS – TALBINGO ROCK PLATFORM TRIAL VALIDATION REPORT

S2-ENV-AP-GEN-REP-FGJV0152

REV C

JULY 2026

ABSTRACT

The key objective of this document is to validate the Talbingo Rock Platform Trial by presenting evidence that the proposed in-reservoir rock placement methodology and associated environmental controls can be implemented in accordance with relevant approvals and ensuring environmental impacts are effectively managed.

Revision Record

Rev.	Date	Reason for Issue	Responsible	Accountable	Endorsed
C	22.07.2026	Updated to address DPHI comments	C. Pedraza	E. Porter	D. Drummond

Document Verification

RACIE Record

R esponsible:	Name: Carolina Pedraza Job Title: Environmental Approvals Coordinator Signed: Signed by: Carolina 30352BF52C9B441... Date: 31 July 2026
A ccountable:	Name: Ellen Porter Job Title: Environmental Manager Signed: Signed by: E Porter 4EDE3A8C971F416... Date: 31 July 2026
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I nformed:	See distribution list on Page 3.
E ndorsed:	Name: David Drummond Job Title: QHSE Director Signed: Signed by: Drummond 5374F7DA03A54C2... Date: 31 July 2026

RACIE Terms

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A	**Accountable** The person who has the answer for success or failure of the quality and timeliness of the document.
C	**Consulted** Those who must be consulted before the document is published.
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Revision Tracking

Rev.	Date	Description of Revision
A	22.05.2026	Issued for review
B	18.06.2026	Updated to address SHL comments
C	22.07.2026	Updated to address DPHI comments

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1. INTRODUCTION

1.1. CONTEXT

The installation of micropiles for slope stabilisation form one of the critical components underpinning the Talbingo Intake and Approach Channel construction works. The micropiling activities require the construction of two temporary rockfill platforms (situated immediately north and south of the approach channel) within the Talbingo Reservoir footprint. The two rockfill platforms are designed to facilitate safe, dry-condition access for drilling and micropiles installation operations.

The works will constitute approximately 50,000 m^3 of rockfill material being placed within the Talbingo Reservoir work zone (including below the Full Supply Level (FSL)) for the duration of the works. The platforms will comprise processed site won excavated material, including material generated by Tunnel Boring Machines (TBM) and Drill and Blast (D&B).

The works are governed by the Talbingo Rock Platform Management Plan (S2-FGJV-ENV-PLN-0392) which received conditional approval (the Approval) from the Department of Planning, Housing and Infrastructure (DPHI) on the 10 February 2026 (Revision G of the Management Plan dated 14 January 2026). The Approval covered the trial placement of 5,000 m^3 of rockfill material in Talbingo Reservoir as part of the Stage 1 works prior to the commencement of the full-scale emplacement works (Stage 2 Works). Subsequently, DPHI approved on the 1 May 2026 the revised Management Plan rev I dated 8 April 2026.

The works have been planned and approved in two stages:

- Stage 1 (Trial Phase): An initial emplacement of up to 5,000m^3 of rockfill material. Trial Phase was completed on the 3 May 2026.
- Stage 2 (Full-Scale Emplacement): Implementation of remaining scope.

Prior to commencing Stage 2 full-scale emplacement works, the following will be submitted:

- A site-wide water balance incorporating spoil rinsing activities (see report no S2-FGJV-TEC-PLN-0006 Dewatering Arrangement).
- A Trial Validation Report outlining outcomes from the Trial and subsequent commitments (this report).

This document and the details contained within represent the Trial Validation Report.

Table 1-1 outlines the key operational milestones and methodology adjustments that governed the trial's timeline.

Table 1-1 Key Milestone Summary

Phase / Event	Date	Operational Status
Pre-Commencement	01/02/2026	Spoil emplacement not yet active. Initial/Baseline Water Sampling.
Spoil emplacements commence	12/02/2026	Active spoil emplacement using long-reach excavator. Standard frequency water sampling commences (twice a week).
Trial Suspension	30/03/2026	Emplacement paused; FGJV variation request submitted to DPHI. Reduced Frequency: Water sampling scaled down to minimal maintenance levels during the pause.

Phase / Event	Date	Operational Status
Regulatory Approval	01/05/2026	DPHI approval granted for dozer methodology.
Spoil emplacement Restart	02/05/2026	Active spoil emplacement resumes via dozer method. Normal Frequency: Water sampling instantly restored to full operational compliance frequency (twice a week).
Trial Conclusion	03/05/2026	Spoil emplacement trial phase completed. Final Sampling: Final water monitoring capture to close out the validation data set on 04/05/2026.

1.2. OBJECTIVE

The objectives of this document are to validate the suitability of the proposed methodologies and management systems for minimising unacceptable risk to aquatic environmental receptors and facilitate full scale placement Approval.

1.3. SCOPE

This Validation Report will address the commitments made as part of the Trial Placement works as outlined in Table 1-2.

Table 1-2 Trial Commitments

Item	Details	Section
Process Description	Details of the screening and rinsing methods used for the spoil material	Section 2.1
Testing results	Full geotechnical and geochemical analysis of the material, plus water quality data from both inside and outside the silt curtain.	Section 3
Ecological Advice	A statement from an aquatic ecologist confirming that full-scale placement is unlikely to cause toxic nitrogen levels or algal blooms, accounting for cumulative project impacts.	Section 3.4
Continuous Improvement	Lessons learned and proposed refinements to the methodology to ensure all environmental thresholds are met during full-scale work.	Section 4

2. SPOIL PROCESSING AND PLACEMENT

2.1. SPOIL PROCESS DESCRIPTION

This section describes how screening and rinsing methods were implemented to manage spoil material prior to placement as part of the trial.

2.1.1. SPOIL SCREENING PROCESS

Material was processed at the Ravine Bay Permanent Spoil Emplacement (PSE) as detailed in Section 5.3 of the approved Management Plan. Figure 2-1 below shows the setup within the PSE.

Figure 2-1 Rockfill Processing Area

To remove the undersized material as far as practicable, a screen was used which is illustrated in Figure 2-2.

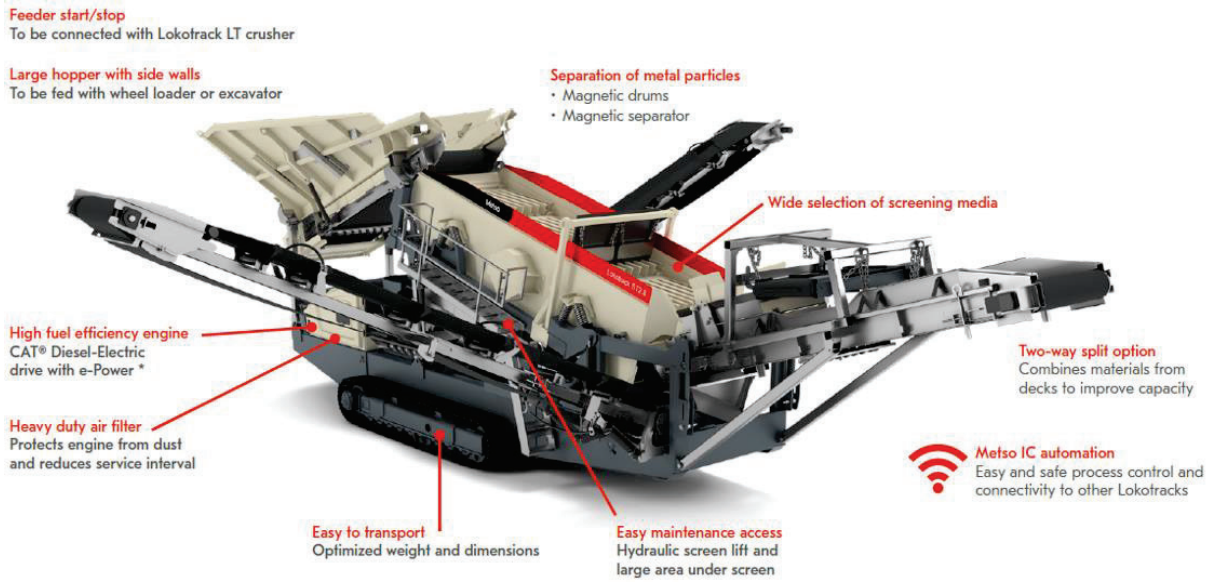

Figure 2-2 Rockfill Screening Plant

Figure 2-3 Screen and Crusher Setup Showing Removal of Undersized Material

Undersized material which passed through the screen was stockpiled separately and discarded as per Figure 2-3 and Figure 2-4, leaving a workable product as the final as per Figure 2-5. This material was stockpiled separately to spoil within the Ravine Bay PSE pending use as part of the Talbingo rock platform.

Figure 2-4 Discarded Undersized Material

Figure 2-5 Rockfill Material for in Reservoir Placement

2.1.2. SPOIL RINSING

Following material processing the rockfill material was rinsed to remove so far as practicable remaining fines which were not separated during the screening process and this fine material was placed in the PSE. The material was sprayed with a watercart in the lined Ravine Bay PSE using a water cart with all rinsate collected within the PSE area and leachate basin.

Minimal rinsing water was used during this process and there were no additional water management capacity issues as a result of the trial. The average volume of rinsing water was less than 20,000 litres ($20m^3$) per day, consistent with the Water Balance – Spoil Rinsing Report (S2-ENV-GN-GEN-REP-FGJV0135). When extracted, this presents less than 2% of any individual basin capacity, and when applied over the stockpile, is anticipated to report volumes less than those extracted due to evaporation influences and reduction in fluid migration.

2.1.3. SPOIL SAMPLE COLLECTION

The rockfill material was sampled prior to use as part of the Trial works with further detail on the specifics of the sampling provided.

- Geochemical samples were collected using a systematic grid pattern with randomised offset. Samples were collected from a range of grainsizes which are representative of the rockfill material.
- Geotechnical samples were collected from the rockfill material which was separated into representative samples for Particle Size Distribution (PSD) analysis.

Analytical results of rockfill material used as part of Trial works are provided in Section 3.

2.1.4. SPOIL TRANSPORTATION AND PLACEMENT

Following material screening, rinsing and the receipt of acceptable analytical results and reservoir impact assessment, a material permit was issued authorising the transport of material from Ravine Bay to the Talbingo intake where it was temporarily stockpiled on hardstand in a bunded area adjacent to the rockfill platform as shown in Figure 2-6.

The rockfill material was subsequently placed as part of the northern Talbingo rock platform using an excavator from 12 February 2026 to 30 March 2026 as per Talbingo Rock Platform Management Plan Revision G.

Figure 2-6 Trial Spoil Emplacement Work Area

On 1 May 2026 approval was received from DPHI with a minor amendment to the previously approved methodology, which allowed use of a dozer for rockfill placement. This methodology was used between the 2 May 2026 and the 3 May 2026 to complete the Trial phase.

The updated placement method was beneficial to trial the proposed method for the Stage 2 full scale emplacement works.

Figure 2-7 Northern Talbingo Rock Platform Work Area

3. ANALYTICAL RESULTS

The following analysis evaluates the effectiveness of the geochemical data and the geotechnical processes implemented during the trial. By examining these results, this section validates the effectiveness of spoil processing in managing material suitability for placement.

3.1. GEOCHEMICAL ANALYSIS OF RESULTS

The following were assessed to determine the suitability of the rockfill material for Trial works:

- Australian Standard Leaching Procedure (ASLP) and Leaching Environmental Testing Framework (LEAF) for analytes listed in the Management Plan including:
    - Total Nitrogen
    - Total Kjeldahl Nitrogen (TKN)
    - Nitrate
    - Nitrite
    - Ammonia
- ASLP and LEAF Dissolved aluminium as requested by DPHI.
    - Aluminium

The assessment involved the submission of thirty (30) samples to a National Association of Testing Authorities (NATA) accredited laboratory with one (1) sample damaged during transport. The resulting sampling density was 1 sample per 172 m^3 which exceeds that stipulated in the Management Plan of 1 sample per 250 m^3. The samples were taken from a range of particle sizes, representative of the rockfill material. The laboratory results are summarised in Table 3-1.

The rockfill material returned results below the adopted assessment criteria provided in the Management Plan and were deemed suitable for use as part of the Trial works. The assessment criteria for Total Nitrogen (leachable) is 1.5 mg/L, all samples returned a result below this limit.

It should be noted that the Potential Acid Forming (PAF) characteristics of the rockfill material were assessed at the site of excavation, prior to transport to the Ravine Bay PSE, with all material considered to be Non-Acid Forming (NAF). Naturally Occurring Asbestos (NOA) is not considered as a Contaminant of Potential Concern (CoPC) for the rockfill material as it does not originate from a known NOA lithology. This is allowed for in the Management Plan.

Table 3-1 Geochemical Results Summary

		Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		Practical Quantification Limit (PQL)	0.1	0.1	0.005	0.005	0.005	0.1 / 0.005
		Analyte	Total Nitrogen	TKN	Nitrate	Nitrite	Ammonia	Aluminium
Sample ID	**Laboratory Report**	**Test Method**						
RRN-PSE_SP01_POW_90mm_43061_S01	400821	ASLP	0.3	0.2	0.02	<0.005	0.16	2.1
RRN-PSE_SP01_POW_10mm_43061_S02	400821	ASLP	0.2	0.2	0.02	<0.005	0.068	1.5
RRN-PSE_SP01_POW_30mm_43061_S03	400821	ASLP	0.3	0.3	0.02	<0.005	0.15	1.6
RRN-PSE_SP01_POW_100mm_43061_S04	400821	LEAF	<0.1	<0.1	0.02	<0.005	0.03	
RRN-PSE_SP01_POW_90mm_43061_S05	400821	ASLP	<0.1	<0.1	0.008	<0.005	0.05	0.8
RRN-PSE_SP01_POW_70mm_43061_S06	400821	ASLP	0.2	0.2	0.01	<0.005	0.076	1.8
RRN-PSE_SP01_POW_50mm_43061_S07	400821	ASLP	0.3	0.3	0.02	<0.005	0.072	1.8
RRN-PSE_SP01_POW_30mm_43061_S08	400821	ASLP	0.3	0.3	0.052	<0.005	<0.005	1.2
RRN-PSE_SP01_POW_40mm_43061_S09	400821	ASLP	0.4	0.4	0.02	<0.005	0.19	1.6
RRN-PSE_SP01_POW_130mm_43061_S10	400821	LEAF	<0.1	<0.1	0.009	<0.005	0.03	
RRN-PSE_SP01_POW_70mm_43061_S11	400821	ASLP	0.2	0.2	0.02	<0.005	0.052	1.5
RRN-PSE_SP01_POW_60mm_43061_S12	400821	ASLP	0.2	0.2	0.01	<0.005	0.10	1.4
RRN-PSE_SP01_POW_10mm_43061_S13	400821	ASLP	<0.1	<0.1	0.01	<0.005	0.006	1.6
RRN-PSE_SP01_POW_40mm_43061_S14	400821	ASLP	<0.1	<0.1	0.02	<0.005	0.077	1.4
RRN-PSE_SP01_POW_70mm_43061_S15	400821	ASLP	0.3	0.3	0.01	<0.005	0.22	2.0
RRN-PSE_SP01_POW_20mm_43061_S16[1]	400821	ASLP						
RRN-PSE_SP01_POW_60mm_43061_S17	400821	ASLP	0.1	0.1	0.02	<0.005	0.073	1.9
RRN-PSE_SP01_POW_40mm_43061_S18	400821	ASLP	0.3	0.3	0.01	<0.005	0.18	1.8
RRN-PSE_SP01_POW_50mm_43061_S19	400821	ASLP	0.2	0.2	0.01	<0.005	0.18	1.6
RRN-PSE_SP01_POW_30mm_43061_S20	400821	ASLP	<0.1	<0.1	0.01	<0.005	0.066	1.8
RRN-PSE_SP01_POW_150mm_44986_S21	404170	LEAF						0.056

		Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		Practical Quantification Limit (PQL)	**0.1**	**0.1**	**0.005**	**0.005**	**0.005**	**0.1 / 0.005**
		Analyte	**Total Nitrogen**	**TKN**	**Nitrate**	**Nitrite**	**Ammonia**	**Aluminium**
Sample ID	**Laboratory Report**	**Test Method**						
RRN-PSE_SP01_POW_250mm_44986_S22	404170	LEAF						0.110
RRN-PSE_SP01_POW_50mm_44986_S23	404170	LEAF						0.057
RRN-PSE_SP01_POW_70mm_44986_S24	404170	LEAF						0.077
RRN-PSE_SP01_POW_100mm_44986_S25	404170	LEAF						0.039
RRN-PSE_SP01A_40mm_46563_S01	406983	LEAF	<0.1	<0.1	0.02	<0.005	0.008	<0.01
RRN-PSE_SP01A_100mm_44563_S02	406983	LEAF	<0.1	<0.1	<0.005	<0.005	0.01	<0.01
RRN-PSE_SP01A_44563_S03	406983	ASLP	<0.1	<0.1	0.01	<0.005	0.005	1.1
RRN-PSE_SP01A_44563_S04	406983	ASLP	<0.1	<0.1	0.053	<0.005	0.04	1.1
RRN-PSE_SP01A_44563_S05	406983	ASLP	<0.1	<0.1	<0.005	<0.005	0.007	1.2
RRN-PSE_SP01A_44563_S06	406983	ASLP	<0.1	<0.1	<0.005	<0.005	0.02	1.1
RRN-PSE_SP01A_44563_S07	406983	ASLP	<0.1	<0.1	<0.005	<0.005	0.009	1.1
RRN-PSE_SP01A_44563_S08	406983	ASLP	<0.1	<0.1	0.009	<0.005	0.005	1.2
RRN-PSE_SP01A_44563_S09	406983	ASLP	<0.1	<0.1	<0.005	<0.005	<0.005	1.1
RRN-PSE_SP01A_44563_S10	406983	ASLP	<0.1	<0.1	<0.005	<0.005	<0.005	1.2
Count			**29**	**29**	**29**	**29**	**29**	**32**
Minimum			**<0.1**	**<0.1**	**<0.005**	**<0.005**	**<0.005**	**<0.01**
Maximum			**0.4**	**0.4**	**0.053**	**<0.005**	**0.22**	**2.1**
Average			**0.14**	**0.14**	**0.01**	**<0.005**	**0.07**	**1.15**
Median			**0.05**	**0.05**	**0.01**	**<0.005**	**0.05**	**1.2**

Notes to Table: 1 – Sample damage during transport

3.2. GEOTECHNICAL ANALYTICAL RESULTS

A desktop review and risk assessment of the works found that fine material (< 2mm) presented a greater risk than coarse material as stated in the Management Plan.

To validate that fine material had been removed as far as practicable the rockfill material was assessed for PSD with the results summarised in Figure 3-1. The results suggest that the fine material (< 2mm) has been removed as far as practicable from the Rockfill material and that the material processing methodology provided in Section 2 is effective and compliant with the Management Plan.

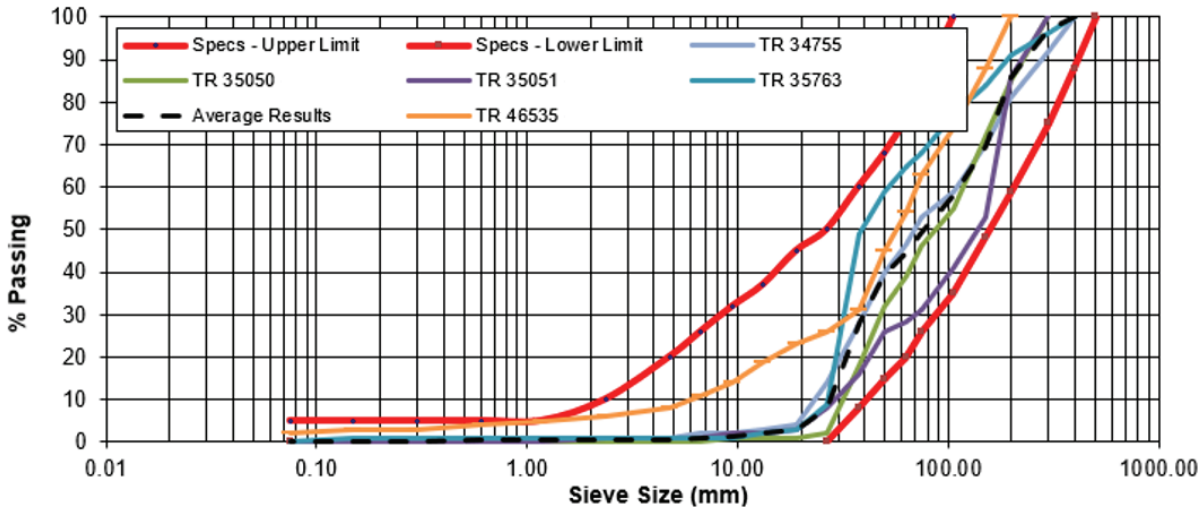

Figure 3-1 Talbingo Rockfill Trial PSD Results

3.3. WATER QUALITY ANALYTICAL RESULTS

3.3.1. WATER QUALITY OVERVIEW

The water quality monitoring program was designed to maximise the opportunity for data driven management measures both for the Trial and the Full-Scale works. To achieve this, routine comprehensive samples supplemented by continuous monitoring systems and visual inspections were employed throughout the reporting period. This monitoring regime comprised hourly data captures, daily visual inspections and biweekly (twice a week) comprehensive grab sampling of the two distinct water bodies. The water bodies are generally defined as the following:

- Talbingo Reservoir ambient waterbody; and
- The Work Zone or Disturbance Area.

The two monitoring buoys were calibrated to record data every hour for the duration of the works.

Table 3-2 Water Quality Monitoring Locations

Sample location	Sample ID	Monitoring Type	GPS coordinates
Upgradient of works	MB_US	Real-time data logging via a monitoring buoy. Comprehensive sampling and visual inspection.	-35.7730026 148.378890
Within Work Zone – inside the innermost silt curtain	Work Zone	Comprehensive sampling and visual inspection.	-35.7688269 148.3749421
50m downgradient from the outermost silt curtain.	MB_DS	Real-time data logging via a monitoring buoy. Comprehensive sampling and visual inspection.	-35.7691802 148.3735504
Downgradient from the outermost silt curtain.	EPL107	Comprehensive sampling and visual inspection.	-35.760429 148.365751

Note: Comprehensive grab samples were collected from the above-mentioned coordinates, including those collected from the monitoring buoy locations.

Table 3-3 Analytical Suite

Sample ID	Type	Frequency	Analytes		
MB_US MB_DS	Real time (Buoys)	Hourly	Temperature; Turbidity pH Electrical conductivity (EC)	Dissolved Oxygen (DO) Redox Potential Nitrate	
EPL10 MB_US MB_DS EPL107 Work Zone	Comprehensive (Grab sampling)	Bi-Weekly when placement occurring	Aluminium (Dissolved) Ammonia Arsenic (Dissolved) Calcium Chromium (Dissolved) Copper (Dissolved) Cyanide (Total) Iron (Dissolved) Lead (Dissolved)	Manganese (Dissolved) Nickel (Dissolved) Nitrate Nitrite Nitrogen (Total) Nitrite + Nitrate as N (NOx) Oil and Grease Phosphorus (Total) Reactive Phosphorus	Total Iron Total Kjeldahl Nitrogen Total Manganese Total Suspended Solids Turbidity Zinc (Dissolved) Chlorophyll a

Figure 3-2 Water Quality Monitoring Locations (Trial stage)

Table 3-4 Comprehensive Monitoring Schedule

Month	February 2026						March 2026										April 2026			May 2026	
Day	1st	12th	15th	18th	22nd	25th	1st	4th	8th	11th	15th	18th	22nd	25th	29th	31st	6th	15th	22nd	3rd	4th
Work Zone	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	Y	Y	N/A	Y
MB_US	N/A	N/A	N/A	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y
MB_DS	N/A	N/A	N/A	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y
EPL107	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	Y	Y	Y	Y
EPL10	Y	Y	Y	Y	N/A	N/A	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	N/A	Y	N/A
EPL11	Y	Y	Y	Y	N/A	N/A	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

During the initial stages of the monitoring program, it was identified that EPL11 no longer represented the optimal down gradient monitoring point for the works due to the potential for sample collection to occur slightly upstream of the coordinates listed in Table 3-2. Following identification of this circumstance, the labelling of downgradient samples was amended from EPL11 to MB_DS.

3.3.2. SAMPLE COLLECTION

Surface water sampling was executed in accordance with the current Water Monitoring and Sampling Procedure, utilising analyte-specific containers and preservation media supplied by an external NATA accredited laboratory. The primary collection method was via a swing sampler or direct surface inundation to a depth of 0.15 m below surface via non-preservative containers.

Physiochemical characteristics were also recorded during the collection of the comprehensive results and uploaded to the online GIS platform Survey123.

To ensure compliance with relevant Australian standards and preserve sample integrity, all samples were logged through ALS's Compass app which generates electronic Chain of Custody (CoC) documentation during sampling. All collected samples were immediately placed in sealed, chilled coolers prior to timely transportation to the External Laboratory whereby the CoC was surrendered to the laboratory. Duplicate and Triplicate samples were collected at monitoring buoy downstream MB_DS location throughout the monitoring program.

3.4. ANALYSIS OF RESULTS

The following section will discuss key CoPC's based on chemical grouping and their inherent risk. It is noted that overall analytical observations did not indicate any material change in water quality or conditions during or after the change in placement methodologies from long reach excavator to dozer. Analytical results generated during the comprehensive sampling regime are provided in Appendix A.

3.4.1. CONTINUOUS MONITORING DATA ANALYSIS OF RESULTS

Figurer 3-3 reflects the entire physiochemical record captured via monitoring buoys MB_US and MB_DS which commenced on 28 January and concluded on the 15 May (for this trial validation report). The commencement of logging prior to placement established an understanding of the baseline ambient conditions prior to any works occurring.

Temperature records reflect the seasonally influenced conditions typically experienced within Talbingo Reservoir during the final stages of Summer and into Autumn. These were characterised by water temperatures steadily decreasing from a peak of 28° C in February before dropping below 20° C in early April. These temperatures are often attributed to the promotion of organic matter as the warmer temperatures provide more favourable growth conditions.

Turbidity readings remained within the adopted WQO's (Table 7-2 of the Talbingo Rock Platform Management Plan) across the Trial, noting the occurrences of anomalous spikes were largely unrepresentative of ambient conditions. The spikes are largely attributed to the growth of algal matter or fouling on the sensors, and the presence of suspended algal matter in the water body, which when cleaned would return turbidity readings to within the WQO's. Further details on the lessons learnt are outlined in Section 4.

Electrical Conductivity was greater than the adopted WQO's for the duration of the recorded timeline. This is considered to reflect ambient conditions due to the consistency between both locations (Upstream and Downstream) for the time series (including prior to placement activities commenced). Any indication of Trial related impacts are unlikely considering the above gradient location recorded higher EC concentrations than the downgradient.

Overall, the physiochemical parameters remained within the WQO's across the reporting period with strong correlations between the above and below gradient immediately corrected within next hours data.

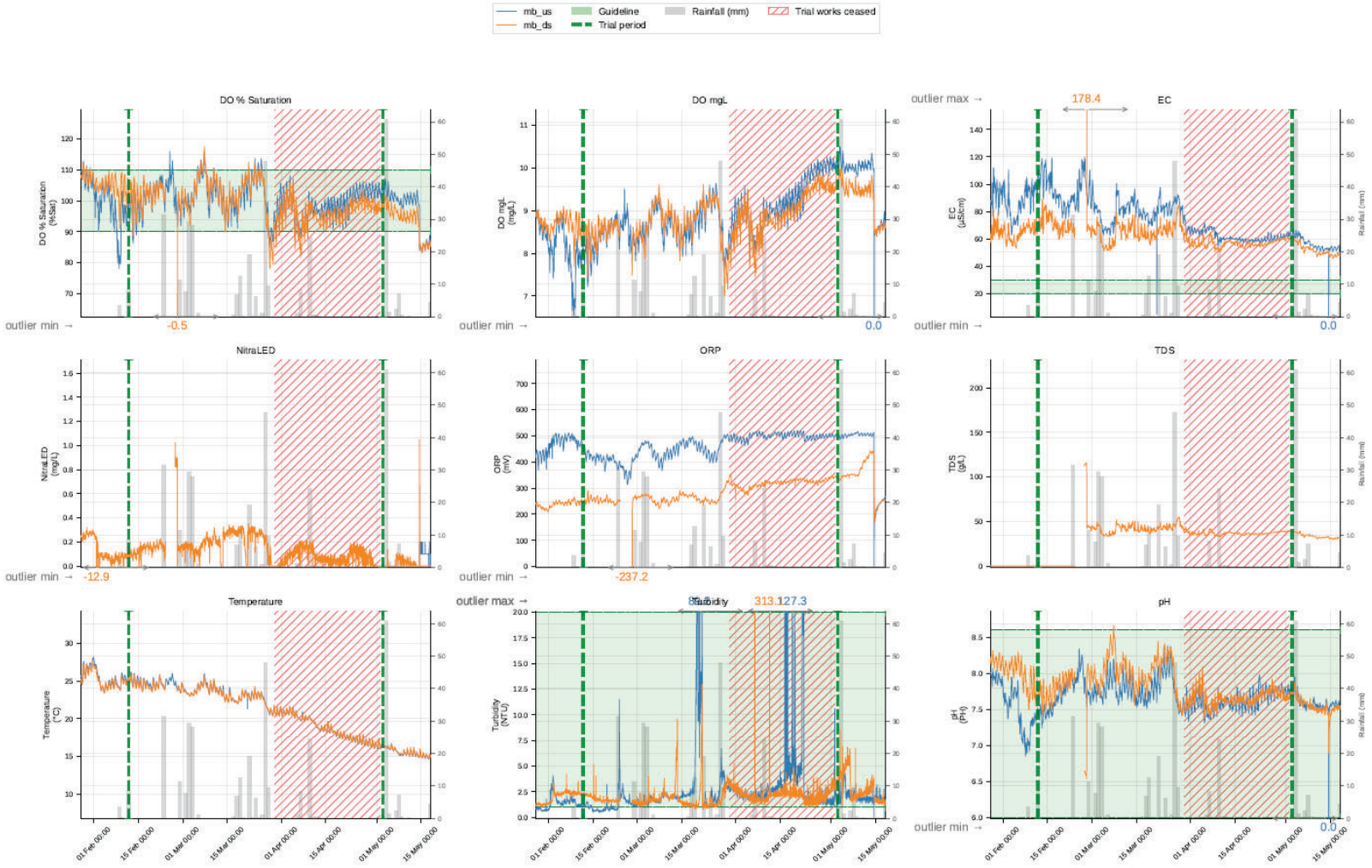

Figure 3-3 Water Quality Full Set-Data (Monitoring Buoys) vs. Rainfall events

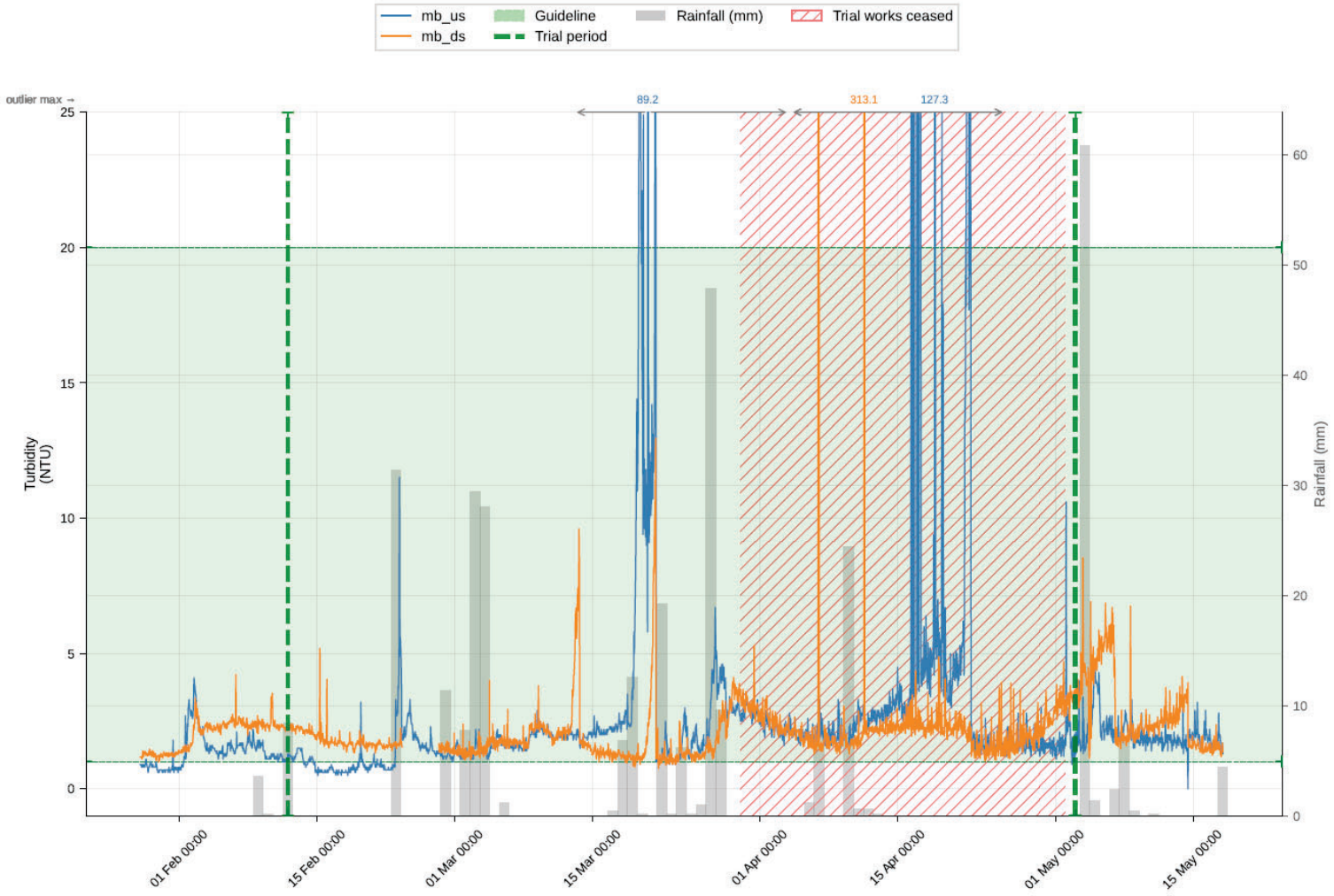

Figure 3-4 Turbidity vs. Rainfall event

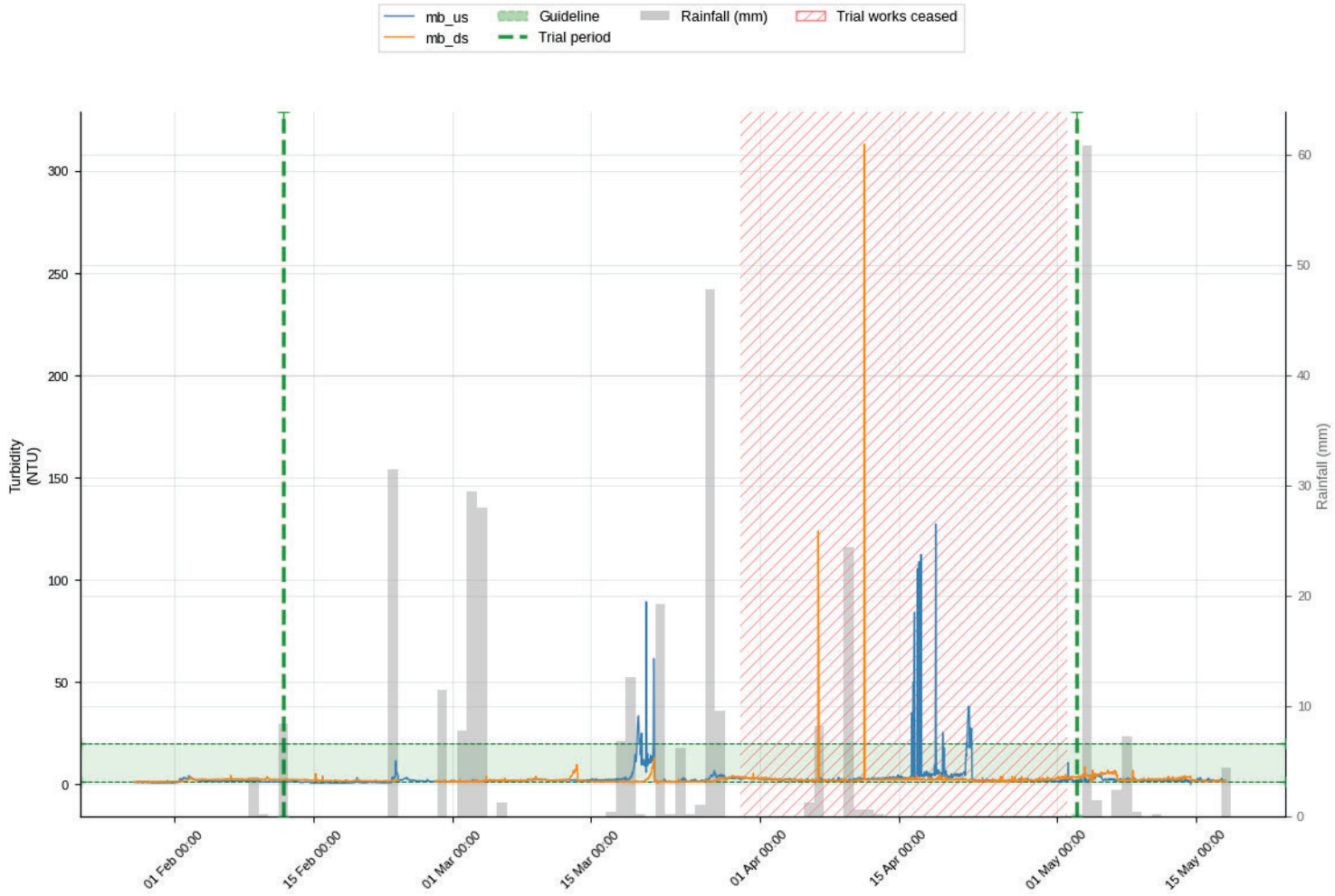

Figure 3-5 Turbidity vs. Rainfall event (bigger scale)

3.4.2. ASSESSMENT OF RESULTS VS BACKGROUND

Analytical results reported during the Trial indicate that the downgradient monitoring locations were generally comparable to the nominated background sites. Nutrient concentrations, particularly ammonia and total nitrogen remained variable across all locations with occasional exceedances of adopted WQO's within both background and downgradient locations. It is noted some of the most elevated ammonia and total nitrogen concentrations were recorded within the background sites, including EPL107 and MB_US, indicating that elevated nutrient concentrations are characteristic of natural catchment conditions rather than project derived influences. Periods of elevated nutrients and thermotolerant coliforms broadly corresponded with rainfall events and reports of green discolouration and suspended algal particles. These inclusions suggest inputs from the wider catchment rather than site specific impacts. Total phosphorus concentrations remained low across all monitoring locations.

Dissolved iron exhibited the greatest variability however, the most elevated concentrations were recorded at EPL10 (0.148 mg/L). Other metals, including arsenic, copper, nickel, silver and zinc, were consistently below adopted WQO's. Despite several significant rainfall events during the monitoring period, there was no corresponding increase in suspended solids indicating controls were effective and that project activities were not causing measurable sediment mobilisation.

The assessed analytes of Primary Concern (including Nutrients, biological indicators and select heavy metals) indicate close correlation to natural background variability rather than a measurable project influence. Thermotolerant coliform concentrations were highly variable across the monitoring period, with the highest counts recorded at the background sites EPL10 (10,000 CFU/100 mL) and EPL107 (8,600 CFU/100 mL). Elevated counts at downgradient locations occurred intermittently following rainfall events but remained in line with the background results. Comparison of MB_DS with the upstream background site MB_US also showed no consistent downstream increases in nutrients, metals or biological indicators throughout the Trial.

3.4.3. CONTINUOUS MONITORING DATA ANALYSIS OF RESULTS VS. RAINFALL

The rainfall record indicates that the most significant hydrological influences on water quality occurred during storm events which occurred on 23 February (31.4 mm), 3&4 March (57.4 mm cumulative), 22 through to 28 March (96.6 mm cumulative), 10 April (24.4 mm), and 4 May (60.8 mm).

The rainfall events show some correlation to fluctuations in monitored physiochemical parameters recorded, with turbidity notably the most responsive to storm influences. The reactivity observed following the two March rainfall events included minor yet sustained elevations of NTU within both the ambient and downgradient locations, noting MB_DS (downgradient) remained within adopted WQO's during this time.

While the turbidity dataset shows several pronounced spikes associated with rainfall-driven sediment mobilisation, the elevated baseline turbidity observed through parts of March was influenced by suspended algal cells contributing to light scattering within the water column. The combination of nutrient availability, warm ambient water temperatures (approximately 18-22°C) and relatively stable conditions between rainfall events provided favourable conditions for algal growth.

Concurrently, EC and TDS exhibited a gradual decline following the major rainfall periods, suggesting dilution of dissolved salts and minerals by inflowing stormwater. Minor reductions in pH were also evident following larger rainfall events, likely reflecting the introduction of fresher runoff and organic matter into the system.

While rainfall had a clear influence on parameters associated with runoff and dilution, its effect on broader water chemistry appeared relatively limited. Dissolved oxygen (DO) saturation showed

increased short-term variability during wetter periods, particularly throughout March and early April, however values remained within adopted WQO's.

Overall, the data indicates that rainfall events were the primary driver of short-term changes in some physiochemical parameters however the seasonal decline in temperature from approximately 24°C in February to 15°C in May appears to be the dominant influence on water quality during the Trial.

3.4.4. COMPREHENSIVE ANALYTICAL RESULTS – AMMONIA

Ammonia concentrations were observed slightly elevated with a mean concentration of 0.02 mg/ L commencing the 12 of February prior to largely reducing around the 15 of April.

The consistency of the concentrations present in above and below gradient locations coincides with preexisting algal activity within the Reservoir persisting across the works timeline. The observed organic matter was noted prior to the works through commentary provided during sampling events. The consistent green water discolouration, elevated waterbody temperatures and reduced reservoir water levels are typically associated with algal growth and decay cycles, whereby ammonia consumption by organic matter rapidly increases algal presence in the waterbody, which then consume nutrients further before eventually decaying and releasing ammonia back into the medium.

The frequent analytical correlations between the concentrations recorded in above and below gradient locations is another indicator of ambient nutrient cycling. This is further supported when considering the decreased DO saturation levels present on numerous sampling occasions, recorded via Survey 123. Algal activity stemming from elevated ambient temperatures, low water level and green discolouration present within the Talbingo Reservoir is displayed in Figure 3-6 below.

Figure 3-6 Green discolouration and algal particles during sampling on 22 February

3.4.5. COMPREHENSIVE ANALYTICAL RESULTS – TOTAL NITROGEN

Total nitrogen (TN) concentrations reported elevations on five occasions throughout the reporting period, as shown in Appendix A.

An assessment of these occurrences identified Total Kjeldahl Nitrogen analytical results equal to the concentrations reported for TN on all five occasions. These correlations allow for the conclusion that the reported TN elevations were either entirely of or substantially composed of organic nitrogen species occurring from ambient water processes.

3.4.6. COMPREHENSIVE ANALYTICAL RESULTS – OXIDISED NITROGEN (NOX)

A review of NOX analytical results identified elevated concentrations occurring within the ambient locations during the works. This is observed to first occur on the 1 February prior to the works commencing whereby concentrations of 0.02 mg/L were noted at EPL10 and EPL11. The minor elevations are noted to comprise of nitrate concentrations and are noted to rarely correlate concentrations recorded within the Work Zone.

The frequency of the minor elevations was noted to increase from the 22 April until the conclusion of the works however the analytical consistency of both above and below gradient locations indicate likely ambient conditions.

3.4.7. VISUAL INSPECTIONS

Visual inspections conducted during the spoil emplacement trial focused on monitoring water colour and odour. On 8 March, a localized colour change within the silt curtains was reported to the Environmental Site Coordinator (refer to Figure 3-7). The team immediately reviewed the real-time monitoring buoy data and analysed laboratory sample results; however, the water quality data indicated no chemical anomalies or indicators of an algal bloom presence or elevated toxicity levels.

Following this event, the team maintained continuous inspection, near the silt curtains, to ensure an immediate response if sediment migrated beyond the outermost silt curtain. The silt curtains successfully contained the material (as shown in Figure 3-7)and activation of the Trigger Action Response Plan (TARP) was not required.

Figure 3-7 Visual inspection evidence

3.5. ECOLOGICAL ASSESSMENT

GHD was engaged by FGJV to provide the following regulators request to FGJV: “Advice from an aquatic ecologist confirming that the trial results indicate that the full-scale rockfill placement works are unlikely to unacceptably increase the risk of nitrogen constituent toxicity and/or generation of algal blooms in the reservoir, including from other cumulative project sources.”

In response, GHD conducted a comprehensive analysis and study utilizing the environmental data and project information provided by FGJV. Appendix B summarizes the key findings and conclusions aligned with the scope of this request.

4. CONTINUOUS IMPROVEMENT

During the Trial works, opportunities for process improvement were identified and are summarised in this section. Also, the Talbingo Rock Platform Management Plan has been updated to account for completion of the trial and include the relevant lessons learned.

As per the approved Talbingo Rock Platform Management Plan, the trial was carried out during day shifts, under environmental supervision and consisted of the following steps with key notes and lessons learned:

a) Processed material during the screening trial was analysed and provided with a material permit before the material was transported to the intake and placed in the reservoir.

- Key notes: Process went as planned
- Lessons learned: N/A – maintain the current process for processing, testing and material permit regime.

b) Environmental controls, including a double-layered silt curtain and monitoring buoys were confirmed as properly installed around the area of the trial.

- Key notes: All controls were in place prior to the trial works. Performance of the silt curtains was as expected, and no TARPS have been triggered.
- Lessons learned: N/A – maintain the current process.

c) The work area was cleared of any obstructions.

- Key notes: Process went as planned
- Lessons learned: N/A – maintain the current process

d) Pre-clearance ecological surveys were undertaken, and the aquatic disturbance permit was issued

- Key notes: Process went as planned and the works did not start until the permit was signed by all parties
- Lessons learned: N/A – maintain the current process

e) The work area was surveyed, clearly marked, and fenced if required.

- Key notes: Process went as planned
- Lessons learned: N/A – maintain the current process and continue the coordination with other ongoing activities at the intake

f) Removal of vegetation in the dry zone where the trial was conducted.

- Key notes: Process went as planned
- Lessons learned: N/A – maintain the current process

g) There was no requirement for tree extraction within the reservoir.

- Key notes: Trees extraction from the shore presented operational constraints as the trees were not within the reach from the trial area
- Lessons learned: The trial demonstrated that laydown of trees for future removal during dredging operations is the safer and more practical methodology

h) Topsoil, organic and unsuitable materials (muddy or loose soil) in the dry zone at the trial location was removed as required.

- Key notes: Process went as planned

- Lessons learned: N/A – maintain the current process

i) Processed material with appropriate material permit was hauled from Ravine Bay to Talbingo Intake at the location of the trial.

- Key notes: Process went as planned. Prior to material placement in the reservoir, some foreign materials (electrical cables, reo bar, shotcrete) have been spotted at the nearshore unloading area and removed prior placement.
- Lessons learned: Dedicated personnel used for material inspection and cleaning of foreign materials at both loading (Ravine Bay) and unloading area (nearshore). Environmental and Spoil teams carried out regular assurance checks. Spot checks will continue to be carried out during Stage 2 works, as deemed necessary.

j) Material was tipped at the foreshore near the emplacement area

- Key notes: Process went as planned
- Lessons learned: N/A – maintain the current process

k) Material was placed in the reservoir using long reach excavator, standard excavator, dozer or loader, as close as possible to the natural ground.

- Key notes: Process went as planned
- Lessons learned: The placement methodology with long reach excavator was deemed suitable in reasonably proximity of the shore. Using a dozer as part of the trial to simulate the full scale emplacement was proven suitable.

l) Water quality was monitored for the duration of the trial.

Key notes: Process went as planned with monitoring buoys experiencing some faults.

- Lessons learned – monitoring buoys: The technical faults experienced during the resulted in the following improvement opportunities:
    - Replacement of Trial Buoys for factory tested and certified units including installation of nitrate and chlorophyll a sensors in all units. Complete as of 13 May.
    - Allow for more consistent technical support from the supplier through updated agreements. Complete as of 13 May.
    - Replace all mobile 4G data units with satellite short burst systems. Scheduled for completion 31 May 2026.
    - Amend the frequency of data captured from hourly to every 3 hours. Commenced 21 May.
    - Total Dissolved Solids (TDS) within the upstream location was not reported due to sensor connection difficulties between the unit and the remote platform which resulted in downtime. Sensors replaced and operational as of 15 May 2026.
    - Employ monitoring buoy maintenance program following development implementation
- Lessons learned – Sample Collection Frequency: The large volume of data generated via the trial works was an effective mechanism to facilitate the transition into Full Scale works, however, is not required at such intensive frequencies moving forward. Although the data generated has been successful in validating the works, the considerable volume of resources required to manage the works do not justify the minor data utilization employed throughout this scope.

FGJV concluded that the trial spoil emplacement was successful, the proposed controls implemented were effective, and we can continue with the construction of the full platforms.

APPENDIX A - COMPREHENSIVE WATER QUALITY RESULTS SUMMARY

APPENDIX A - COMPREHENSIVE WATER QUALITY RESULTS SUMMARY

			LAB ANALYSIS	NUTRIENTS								INORGANICS	HYDROCARBONS	HEAVY METALS												BIOLOGICAL		
			TSS	Ammonia as N	Nitrite + Nitrate as N (NOx)	Kjeldahl Nitrogen Total	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)	Reactive Phosphorus (filtered)	Phosphorus (Total)	Cyanide Total	Oil and Grease	Aluminium (filtered)	Arsenic (filtered)	Chromium (hexavalent) (filtered)	Chromium (III+VI) (filtered)	Chromium (Trivalent)	Copper (filtered)	Iron (filtered)	Lead (filtered)	Manganese (filtered)	Nickel (filtered)	Silver (filtered)	Zinc (filtered)	Biochemical Oxygen Demand	Chlorophyll a	Thermotolerant Coliforms
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100mL
EQL			5	0.005	0.01	0.1	0.01	0.01	0.1	0.001	0.005	0.004	1	0.005	0.0002	0.001	0.0002	0.001	0.0005	0.002	0.0001	0.0005	0.0005	0.00001	0.001	2	0.001	1
Snowy 2.0 - Reservoir Water Guidelines - 1225				0.01	0.01				0.35	0.005	0.01	0.007	5	0.055	0.013		0.00001		0.0014	0.3	0.0034	1.9	0.011	0.00005	0.008			
Date	**Location Code**	**Lab Report Number**																										
01 Feb 2026	EPL10	ES2603121	<5	0.01	0.02	0.3	0.02	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0006	<0.001	<0.0002	<0.001	<0.0005	0.026	<0.0001	<0.0005	<0.0005	<0.00001	<0.001	2		10,000
01 Feb 2026	EPL11	ES2603121	<5	0.01	0.02	0.3	0.02	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.014	<0.0001	<0.0005	<0.0005	<0.00001	<0.001	4		7,800
01 Feb 2026	EPL107	ES2603121	<5	<0.01	<0.01	0.3	<0.01	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.004	<0.0001	<0.0005	<0.0005	<0.00001	<0.001			
12 Feb 2026	EPL10	ES2604617	<5	0.05	0.02	0.2	0.02	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0006	<0.001	<0.0002	<0.001	<0.0005	0.060	<0.0001	0.0267	<0.0005	<0.00001	<0.001	2		2,300
12 Feb 2026	EPL11	ES2604617	<5	0.07	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.024	<0.0001	<0.0005	<0.0005	<0.00001	<0.001	<2		3,200
12 Feb 2026	EPL107	ES2604617	<5	0.04	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.010	<0.0001	<0.0005	<0.0005	<0.00001	<0.001	<2		3,600
12 Feb 2026	WORKZONE	ES2604617	<5	0.04	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.029	<0.0001	<0.0005	<0.0005	<0.00001	<0.001	<2		2,500
15 Feb 2026	EPL10	ES2604792	<5	0.04	<0.01	0.3	<0.01	<0.01	0.3	<0.01	0.04	<0.004	<1.0	<0.005	0.0006	<0.001	<0.0002	<0.001	<0.0005	0.148	<0.0001	0.0423	<0.0005	<0.00001	<0.001	<2	<0.001	53
15 Feb 2026	EPL11	ES2604792	<5	0.05	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.069	<0.0001	0.0008	<0.0005	<0.00001	<0.001	2	<0.001	260
15 Feb 2026	EPL107	ES2604792	<5	0.02	<0.01	0.2	<0.01	<0.01	0.2	<0.01	0.02	<0.004	<1.0	<0.005	0.0002	<0.001	<0.0002	<0.001	<0.0005	0.011	<0.0001	<0.0005	<0.0005	<0.00001	<0.001	<2	0.002	1,800
15 Feb 2026	WORKZONE	ES2604792	<5	0.01	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.016	<0.0001	<0.0005	<0.0005	<0.00001	<0.001	2	0.002	190
18 Feb 2026	EPL10	ES2605184	<5	0.04	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.092	<0.0001	0.0290	<0.0005	<0.0001	<0.001	<2	0.001	63
18 Feb 2026	EPL11	ES2605184	<5	0.11	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.063	<0.0001	0.0080	<0.0005	<0.0001	<0.001	<2	0.002	100
18 Feb 2026	EPL107	ES2605184	<5	<0.01	0.01	0.1	0.01	<0.01	0.1	<0.01	<0.01	<0.004	<1.0	<0.005	0.0002	<0.001	<0.0002	<0.001	<0.0005	0.009	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	1,200
18 Feb 2026	WORKZONE	ES2605184	<5	0.08	0.01	0.2	0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.020	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	130
22 Feb 2026	EPL107	ES2605621	<5	0.05	<0.01	0.2	<0.01	<0.01	0.2	<0.01	0.01	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.012	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	2	0.001	530
22 Feb 2026	MB_DS	ES2605621	<5	0.06	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.029	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	<0.001	210
22 Feb 2026	MB_US	ES2605621	<5	0.02	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.037	<0.0001	0.0056	<0.0005	<0.0001	<0.001	<2	0.001	250
22 Feb 2026	WORKZONE	ES2605621	<5	0.02	<0.01	0.1	<0.01	<0.01	0.1	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.016	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	<0.001	330
25 Feb 2026	EPL107	ES2605923	<5	0.09	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.013	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	<0.001	1,000
25 Feb 2026	MB_DS	ES2605923	<5	0.04	<0.01	<0.1	<0.01	<0.01	<0.1	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.033	<0.0001	0.0007	<0.0005	<0.0001	<0.001	<2	<0.001	1,300
25 Feb 2026	MB_US	ES2605923	<5	0.04	<0.01	0.1	<0.01	<0.01	0.1	<0.01	0.01	<0.004	<1.0	<0.005	0.0006	<0.001	<0.0002	<0.001	<0.0005	0.037	<0.0001	0.0044	<0.0005	<0.0001	<0.001	2	0.002	1,300
25 Feb 2026	WORKZONE	ES2605923	<5	0.02	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0006	<0.001	<0.0002	<0.001	<0.0005	0.021	<0.0001	0.0007	<0.0005	<0.0001	<0.001	2	<0.001	390
01 Mar 2026	EPL10	ES2606421	<5	0.03	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0006	<0.001	<0.0002	<0.001	<0.0005	0.032	<0.0001	<0.0005	<0.0005	<0.00001	<0.001	2		300
01 Mar 2026	EPL107	ES2606421	<5	0.02	<0.01	0.1	<0.01	<0.01	0.1	<0.01	0.01	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.010	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.001	700
01 Mar 2026	MB_DS	ES2606421	<5	0.02	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.023	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	460
01 Mar 2026	MB_US	ES2606421	<5	0.18	<0.01	0.3	<0.01	<0.01	0.3	<0.01	0.02	<0.004	<1.0	<0.005	0.0006	<0.001	<0.0002	<0.001	<0.0005	0.032	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	340
01 Mar 2026	WORKZONE	ES2606421	<5	0.04	<0.01	0.3	<0.01	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.021	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	100
04 Mar 2026	EPL107	ES2606850	<5	0.13	<0.01	0.3	<0.01	<0.01	0.3	<0.01	0.01	<0.004	<1.0	<0.005	0.0002	<0.001	<0.0002	<0.001	<0.0005	0.008	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	900
04 Mar 2026	MB_DS	ES2606850	<5	<0.01	<0.01	0.2	<0.01	<0.01	0.2	<0.01	0.02	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.009	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	3,400
04 Mar 2026	MB_US	ES2606850	<5	0.02	<0.01	0.3	<0.01	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.011	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	5,300
04 Mar 2026	WORKZONE	ES2606850	<5	0.03	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.013	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	7,800
08 Mar 2026	EPL107	ES2607285	<5	0.19	<0.01	0.5	<0.01	<0.01	0.5	<0.01	0.05	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.011	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.001	610
08 Mar 2026	MB_DS	ES2607285	<5	0.01	0.02	0.2	0.02	<0.01	0.2	<0.01	0.03	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.019	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	94
08 Mar 2026	MB_US	ES2607285	<5	<0.01	<0.01	0.2	<0.01	<0.01	0.2	<0.01	0.04	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.033	<0.0001	0.0009	<0.0005	<0.0001	<0.001	<2	0.002	290
08 Mar 2026	WORKZONE	ES2607285	6	0.12	<0.01	0.6	<0.01	<0.01	0.6	<0.01	0.03	<0.004	<1.0	0.006	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.024	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	250
11 Mar 2026	EPL107	ES2607694	<5	0.03	<0.01	0.2	<0.01	<0.01	0.2	<0.01	0.01	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.009	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	4,000
11 Mar 2026	MB_DS	ES2607694	<5	<0.01	<0.01	0.2	<0.01	<0.01	0.2	<0.01	0.01	<0.004	<1.0	0.006	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.028	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	930
11 Mar 2026	MB_US	ES2607694	<5	0.04	0.02	0.2	0.02	<0.01	0.2	<0.01	0.02	<0.004	<1.0	0.007	0.0005	<0.001	<0.0002	<0.001	0.0005	0.045	<0.0001	0.0005	<0.0005	<0.0001	<0.001	<2	0.002	340
11 Mar 2026	WORKZONE	ES2607694	<5	0.04	<0.01	0.3	<0.01	<0.01	0.3	<0.01	0.01	<0.004	<1.0	0.008	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.023	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	73
15 Mar 2026	EPL107	ES2608226	<5	<0.01	<0.01	0.1	<0.01	<0.01	0.1	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.008	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	5,300
15 Mar 2026	MB_DS	ES2608226	<5	<0.01	0.01	0.2	0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.024	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	1,800
15 Mar 2026	MB_US	ES2608226	<5	0.15	0.02	0.3	0.02	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.041	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	3	0.002	1,900
15 Mar 2026	WORKZONE	ES2608226	<5	<0.01	0.02	0.2	0.02	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	0.008	0.0005	<0.001	<0.0002	<0.001	0.0006	0.029	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	4	0.002	540
18 Mar 2026	EPL107	ES2608640	<5	0.08	<0.01	0.2	<0.01	<0.01	0.2	<0.01	0.01	<0.004	<1.0	<0.005	0.0002	<0.001	0.0002	<0.001	<0.0005	0.009	<0.0001	<0.0005	<0.0005	<0.00001	<0.001	<2	0.003	8,600
18 Mar 2026	MB_DS	ES2608640	<5	0.07	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003	<0.001	0.0002	<0.001	<0.0005	0.024	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.005	1,600
18 Mar 2026	MB_US	ES2608640	<5	0.02	<0.01	0.1	<0.01	<0.01	0.1	<0.01	0.02	<0.004	<1.0	<0.005	0.0004	<0.001	0.0003	<0.001	<0.0005	0.037	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	4	0.006	3,500
18 Mar 2026	WORKZONE	ES2608640	<5	0.02	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	0.008	0.0004	<0.001	0.0003	<0.001	<0.0005	0.031	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	4	0.004	760
22 Mar 2026	EPL107	ES2609160	<5	0.02	<0.01	0.1	<0.01	<0.01	0.1	<0.01	0.03	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.010	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.001	8,200
22 Mar 2026	MB_DS	ES2609160	<5	0.03	<0.01	0.2	<0.01	<0.01	0.2	<0.01	0.03	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.022	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.003	1,700
22 Mar 2026	MB_US	ES2609160	<5	0.02	<0.01	0.1	<0.01	<0.01	0.1	<0.01	0.02	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.031	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	2	0.003	2,900
22 Mar 2026	WORKZONE	ES2609160	<5	0.04	<0.01	0.1	<0.01	<0.01	0.1	<0.01	0.03	<0.004	<1.0	0.007	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.019	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	2	0.003	240
25 Mar 2026	EPL107	ES2609521	<5	0.05	<0.01	0.3	<0.01	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.011	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	3,700
25 Mar 2026	MB_DS	ES2609521	<5	0.05	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.017	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	370
25 Mar 2026	MB_US	ES2609521	<5	<0.01	0.01	<0.1	0.01	<0.01	<0.1	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.023	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.003	560
25 Mar 2026	WORKZONE	ES2609521	<5	<0.01	<0.01	0.3	<0.01	<0.01	0.3	<0.01	0.01	<0.004	<1.0	0.005	0.0006	<0.001	<0.0002	<0.001	0.0005	0.015	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	39
29 Mar 2026	EPL107	ES2610049	<5	0.08	<0.01	0.2	<0.01	<0.01	0.2	<0.01	0.01	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.006	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	1,900
29 Mar 2026	MB_DS	ES2610049	<5	0.04	0.01	0.2	0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.019	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	440
29 Mar 2026	MB_US	ES2610049	<5	0.12	0.03	0.3	0.03	<0.01	0.3	<0.01	0.03	<0.004	<1.0	<0.005	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.023	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	350
29 Mar 2026	WORKZONE	ES2610049	<5	0.11	0.03	0.3	0.03	<0.01	0.3	<0.01	0.01	<0.004	<1.0	0.006	0.0006	<0.001	<0.0002	<0.001	<0.0005	0.024	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.003	69
31 Mar 2026	EPL107	ES2610346	<5	0.05	<0.01	0.4	<0.01	<0.01	0.4	<0.01	<0.01	<0.004	<1.0	<0.005	0.0002	<0.001	<0.0002	<0.001	<0.0005	0.007	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	750
31 Mar 2026	MB_DS	ES2610346	<5	0.08	<0.01	0.4	<0.01	<0.01	0.4	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.013	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.003	400
31 Mar 2026	MB_US	ES2610346	<5	0.03	0.02	0.3	0.02	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.016	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.003	100
31 Mar 2026	WORKZONE	ES2610346	<5	<0.01	0.03	0.3	0.03	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0006	<0.001	<0.0002	<0.001	<0.0005	0.022	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.002	130
06 Apr 2026	EPL10	ES2610662	<5	0.08	0.01	0.3	0.01	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.015	<0.0001	0.0011	<0.0005	<0.00001	<0.001	<2	0.001	35
06 Apr 2026	EPL107	ES2610662	<5	0.01	<0.01	0.2	<0.01	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.005	<0.0001	<0.0005	<0.0005	<0.00001	<0.001		<0.001	
15 Apr 2026	EPL10	ES2611818	<5	<0.01	0.01	0.3	0.01	<0.01	0.3	<0.01	0.02	<0.004	<1.0	0.005	0.0004		<0.0002		<0.0005	0.021	<0.0001	0.0012	<0.0005		<0.001	<2	0.003	21
15 Apr 2026	EPL107	ES2611818	<5	0.01	0.02	0.2	0.02	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003		<0.0002		<0.0005	0.015	<0.0001	0.0005	<0.0005		<0.001	<2	<0.001	18
15 Apr 2026	MB_DS	ES2611818	<5	0.01	0.01	0.5	0.01	<0.01	0.5	<0.01	<0.01	<0.004	<1.0	0.006	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.019	<0.0001	0.0005	<0.0005	<0.0001	<0.001	<2	<0.001	11
15 Apr 2026	MB_US	ES2611818	<5	<0.01	0.01	0.3	0.01	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	0.006	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.021	<0.0001	0.0011	<0.0005	<0.0001	<0.001	<2	0.003	16
15 Apr 2026	WORKZONE	ES2611818	<5	0.03	0.03	0.4	0.03	<0.01	0.4	<0.01	0.02	<0.004	<1.0	0.006	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.023	<0.0001	0.0006	<0.0005	<0.0001	<0.001	<2	0.002	14
22 Apr 2026	EPL107	ES2612779	<5	<0.01	0.02	0.1	0.02	<0.01	0.1	<0.01	<0.01	<0.004	<1.0	0.005	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.016	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.001	1
22 Apr 2026	MB_DS	ES2612779	<5	<0.01	0.02	0.9	0.02	<0.01	0.9	<0.01	0.02	<0.004	<1.0	0.006	0.0003	<0.001	<0.0002	<0.001	<0.0005	0.019	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.003	<1
22 Apr 2026	MB_US	ES2612779	<5	0.01	0.03	0.2	0.03	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	0.007	0.0004	<0.001	<0.0002	<0.001	<0.0005	0.021	<0.0001	0.0008	<0.0005	<0.0001	<0.001	<2	0.004	2
22 Apr 2026	WORKZONE	ES2612779	<5	<0.01	0.03	0.1	0.03	<0.01	0.1	<0.01	0.01	<0.004	<1.0	0.008	0.0005	<0.001	<0.0002	<0.001	<0.0005	0.024	<0.0001	<0.0005	<0.0005	<0.0001	<0.001	<2	0.004	5
03 May 2026	EPL107	ES2613887	<5	<0.01	0.04	0.1	0.04	<0.01	0.1	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003		<0.0002		<0.0005	0.014	<0.0001	<0.0005	<0.0005		<0.001	<2	0.003	5
03 May 2026	MB_DS	ES2613887	<5	0.02	<0.01	0.3	<0.01	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003		<0.0002		<0.0005	0.018	<0.0001	<0.0005	<0.0005		<0.001	2	0.003	14
03 May 2026	MB_US	ES2613887	<5	0.01	0.04	0.2	0.04	<0.01	0.2	<0.01	0.03	<0.004	<1.0	<0.005	0.0003		0.0005		<0.0005	0.019	<0.0001	<0.0005	<0.0005		<0.001	2	0.006	5
03 May 2026	WORKZONE	ES2613887	<5	0.06	0.01	0.1	0.01	<0.01	0.1	<0.01	0.03	<0.004	<1.0	0.005	0.0004		<0.0002		<0.0005	0.020	<0.0001	<0.0005	<0.0005		<0.001	3	0.007	4
04 May 2026	EPL107	ES2613934	<5	<0.01	0.02	0.2	0.02	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0002		<0.0002		<0.0005	0.011	<0.0001	<0.0005	<0.0005		<0.001	<2	0.002	6
04 May 2026	MB_DS	ES2613934	<5	0.01	0.02	0.2	0.02	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	0.005	0.0003		<0.0002		<0.0005	0.015	<0.0001	<0.0005	<0.0005		<0.001	<2	0.003	3
04 May 2026	MB_US	ES2613934	<5	<0.01	0.04	0.2	0.04	<0.01	0.2	<0.01	<0.01	<0.004	<1.0	<0.005	0.0003		0.0003		<0.0005	0.016	<0.0001	<0.0005	<0.0005		<0.001	2	0.005	29
04 May 2026	WORKZONE	ES2613934	<5	0.01	0.01	0.3	0.01	<0.01	0.3	<0.01	<0.01	<0.004	<1.0	0.006	0.0004		<0.0002		<0.0005	0.016	<0.0001	<0.0005	<0.0005		<0.001	<2	0.006	3

APPENDIX B - ECOLOGICAL ASSESSMENT

Level 15, 133 Castlereagh Street,
Sydney, 2000, NSW
Australia
ghd.com

Your ref:
Our ref: 12530552 - S2-CML-GN-GEN-LET-GHD0064[B]

22 May 2026

Scott Lang
Future Generation JV
Cooma

Snowy 2.0: Summary letter - assessment of surface water quality – spoil placement trial at Talbingo Reservoir

Dear Scott

1. Introduction

As part of the Snowy 2.0 Pumped Hydro Project, blast and tunnel boring machine (TBM) spoil is proposed to be placed within Talbingo Reservoir to construct temporary rock platforms for infrastructure works. The purpose of this document is to present a summary of the ecological and reservoir water quality assessment of the trial spoil placement. Approximately 5,000 m³ of spoil material was placed in the reservoir between 12 February and 3 May 2026, to provide a dataset to support an application for final approval to proceed with the full-scale rockfill placement works.

Mitigation measures implemented during the trial included rinsing of spoil prior to placement and the use of inner and outer silt curtains to contain potential impacts within a defined disturbance zone, as per FGJV Management Plan S2-FGJV-ENV-PLN-0392 Rev I.

This report addresses the following requirement from Department of Planning Housing and Infrastructure (DPHI):

> *Advice from an aquatic ecologist confirming that the trial results indicate that the full-scale rockfill placement works are unlikely to unacceptably increase the risk of nitrogen constituent toxicity and/or generation of algal blooms in the reservoir, including from other cumulative project sources.*

The technical detail from which the conclusions were derived, and the associated assumptions and limitations are documented in the report titled *Assessment of surface water quality- spoil placement trial at Talbingo Reservoir (document S2-ENV-WA-SFW-MEM-GHD0003 Rev D)*, GHD, 22 May 2026. This summary letter is subject to, and must be read in conjunction with, the assumptions and limitations contained in that report.

2. Basis of the assessment

The assessment of toxicity was straightforward as there are suitable toxicity thresholds available for ammonia and nitrate (ANZG, 2018), which were used as the basis of the assessment.

The assessment of potential algal blooms could not be based on water quality objectives for nutrients or other parameters, as the conditions that lead to the generation of algal blooms are complex and associated with a range of environmental factors.

Multiple lines of evidence were used to assess the potential risk of toxicity or algal blooms, as described below.

1. Mass balance modelling

Mass balance modelling was used to estimate expected concentrations of nitrogen species during both trial and full-scale placement. The modelling indicates that increases in ammonia, NOx (nitrate + nitrite as N) and total nitrogen are expected to be relatively small even under conservative assumptions and represent a reasonable worst-case scenario. The modelled nitrogen concentrations were compared to the nitrogen concentrations observed during the trial.

2. Assessment against water quality criteria (toxicity assessment)

Nitrogen concentrations observed outside the silt curtain during the trial were compared against adopted toxicity-based guideline values (ANZG 2018) for potentially toxic nitrogen species: ammonia and nitrate. Data collected within the silt curtain (Work Zone) were considered to represent a controlled disturbance area and were not assessed against guideline criteria.

3. Spatial assessment of water quality

Water quality data (nutrients and turbidity) from upstream (MB_US) and downstream (MB_DS and EPL107) monitoring locations were compared to assess whether observed changes were likely attributable to spoil placement or upstream influences.

Nitrogen concentrations and turbidity are potential predictor variables for algal blooms, with higher nitrogen concentrations and turbidity generally increasing the risk of algal blooms. Chlorophyll-a was also assessed as an indicator of the algal biomass observed during the trial placement works.

Additional supporting information for the assessment included a review of temporal trends in water quality during the trial, and with consideration of daily spoil placement volumes and mitigation measures such as spoil rinsing and silt curtains.

3. Key findings of the assessment- spoil trial emplacement

During the emplacement trial approximately 5,000 m^3 of spoil was placed in the reservoir over a period of 81 days. There were significant periods during which no spoil placement took place.

A multiple lines of evidence approach was taken in the assessment of the possible toxicity effects of nitrogen compounds (ammonia and nitrate) resulting from the trial and also the potential for increased algal bloom risk. It should be noted that GHD's assessment did not compare reservoir water quality data within the silt curtains against the adopted criteria as this is considered to represent a disturbance zone. The results of this assessment suggest the following:

- Mass balance modelling suggests that increases in ammonia, nitrate and total nitrogen concentrations within the silt curtain would be expected to be small during the trial.
- Exceedances of the adopted criteria for ammonia (0.13 mg/L- based on ANZG, 2026) were noted for one location downgradient of the Work Zone (EPL107), however, exceedances were also recorded for the upstream monitoring location (MS_US). These data suggest that other processes unrelated to the spoil emplacement may have been active in the reservoir, producing variability within the reservoir.
- All nitrate results were below the adopted criteria of 0.64 mg/L, based on ANZG (2018). The results suggest there is variability in nitrate concentrations within the reservoir but that concentrations are generally low.
- Total nitrogen concentrations include some results at downstream locations above the adopted stressor criteria of 0.35 mg/L. Comparison of the total nitrogen results with Kjeldahl nitrogen results suggest that the total nitrogen results may be related to the presence of organic nitrogen compounds in some of the samples, rather than attributable to spoil placement.

Taken together the data do not suggest that the trial resulted in elevated ammonia or nitrate at toxic levels or unacceptably elevated the risk of algal blooms. However, the data also suggest other activities within the reservoir are producing variable conditions with respect to the concentrations of these nitrogen compounds or potential for algal blooms.

4. Assessment of possible future impacts from full-scale spoil placement

Mass balance calculations undertaken by GHD and based on a number of assumptions suggest that the full-scale emplacement works will likely result in relatively small increases for ammonia, nitrate and total nitrogen concentrations within the silt curtains (work disturbance area). By inference, concentration changes for these nitrogen compounds within the broader reservoir would also be expected to be small.

The spoil trial placement water sampling results do suggest periodically elevated concentrations within the reservoir. However, the pattern of results does not suggest that these were related to spoil placement. The results of the spoil placement trial also do not suggest that the full-scale works are likely to produce unacceptable risks with respect to ammonia or nitrate toxicity.

Overall, the evidence available from the trial placement, combined with the mass balance results, does not suggest that full-scale rockfill placement works would unacceptably increase the risk of generation of algal blooms in the reservoir. However, as [discussed in the assessment report], the occurrence of algal blooms is due to a complex range of environmental factors including the water temperature and reservoir fill level which may differ during full-scale placement from the conditions during the trial.

Regards

Iain Marshall

Iain Marshall
Technical Director - Hydrogeology

08 6222 8927
Iain.marshall@ghd.com

Zoe Lagerroth
Senior Aquatic Ecologist

02 4979 9035
zoe.lagerroth@ghd.com

Copy to: Marjorie Taylor – GHD Project Manager
Anthony Whipps – GHD Project Director