

14 September 2026

J-NZ0488-016-L-Rev0

Cheryl Low
Environment Manager
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BOGP Supplementary Responses

Dear Cheryl,

Mine Waste Management Limited (MWM) has provided this letter to include additional information as part of the response by Matakanui Gold Limited (MGL) to the feedback from other parties in relation to MGL's response to the Request for Information 11 (RFI 11) associated with the Fast-track Approvals Act 2024 (FTAA) application for the Bendigo-Ophir Gold Project (BOGP):

Specifically, this letter addresses the following feedback that was received:

- Kathryn Jane McArthur for Otago Fish and Game Council of New Zealand dated 7 September 2026 (McArthur, 2026)
- Dr Leanne Morgan for the Environmental Defence Society dated 7 September 2026.
- Prof Jennifer Webster-Brown for the Environmental Defence Society dated 7 September 2026 (Webster-Brown, 2026)
- Hanan Family supplementary submission (Hannan Family, 2026).

MGL has instructed MWM to address key themes across these documents rather than specific points as many of the same issues are raised across the feedback received.

ADAPTIVE MANAGEMENT

Feedback raised concerns regarding the extent to which adaptive management is proposed within the Water Management Plan (Water MP) and elsewhere within the Project. It also questioned whether additional management measures and response plans should be developed before operational activities commence.

PDCA Cycle

MGL's commitment to continual improvement through adaptive management of environmental performance has been embodied by and implemented through the AS/NZS ISO 14001:2016 recognised approach, referred to as the Plan–Do–Check–Act (PDCA) cycle.

ISO¹ published a revised ISO 14001:2026 internationally in 2026. However, as listed by SAI GLOBAL, the corresponding Australian/New Zealand adoption has not yet been released as a new AS/NZS

¹ International Organisation for Standardization

edition. The current AS/NZS version remains AS/NZS ISO 14001:2016 incorporating Amendment 1:2024:

- ISO officially released ISO 14001:2026 on 15 April 2026.
- Publication started a 36-month transition period for organisations currently certified to ISO 14001:2015.
- Organisations generally have until April 2029 to transition their Environmental Management System (EMS) to the new version.

Notwithstanding the 36-month grace period for implementation of the ISO 14001:2026 standard for those corporations that are ISO certified, the fundamental structure of the PDCA has not changed with the updates. MGL will update managements plans to address any changes prior to the end of the transition period.

Risk Assessment

Comprehensive risk assessments will support the management plan certification process and will be updated annually or when there are material changes to the mine plan. MGL has committed to this risk assessment process:

- The Engineered Landform (ELF) Management Plan (ELF MP) states that a risk register shall be developed for each individual ELF prior to construction (Section 11.2).
- The Water MP states that a live risk register will be maintained (Section 12.1).

Key risks need to be managed by adaptive management processes (as explained in the evidence of Dr Paul Weber dated 17 April 2026 Part 2-12: Appendix B) and as stated in the management plans (e.g., Water MP Section 12.3).

The fundamental approach to adaptive management is risk identification and performance monitoring coupled with appropriate triggers to enact management measures. Typically, this process is managed by Trigger Action Response Plans (TARPs) that are contained in the appropriate management plan or within Standard Operating Procedures (SOPs) that may be an appendix to the management plan.

Adaptive Management – Performance Monitoring

Monitoring of performance of key risks is critical to help identify early departure from the expected case. Performance monitoring is an early warning system to enable a timely response to develop and implement other management options to manage the change. Monitoring should be specific to the risk and the duration of the risk.

Adaptive Management – Variance Management

Variance from predictive model estimates of water quality and quantity is common. Hence, there needs to be supporting management measures to demonstrate how such variance will be managed. Variance can be managed by TARPs (Figure 1).

The number of TARPs is based on the risk assessment process to ensure potential higher risk effects have management measures in place. Generally, a TARP has set trigger limits to define what a

significant change is and then describes the actions to respond to the variance to ensure operational and closure objectives remain on track. TARPs need to be developed to cover the adaptive management regime (Figure 1).

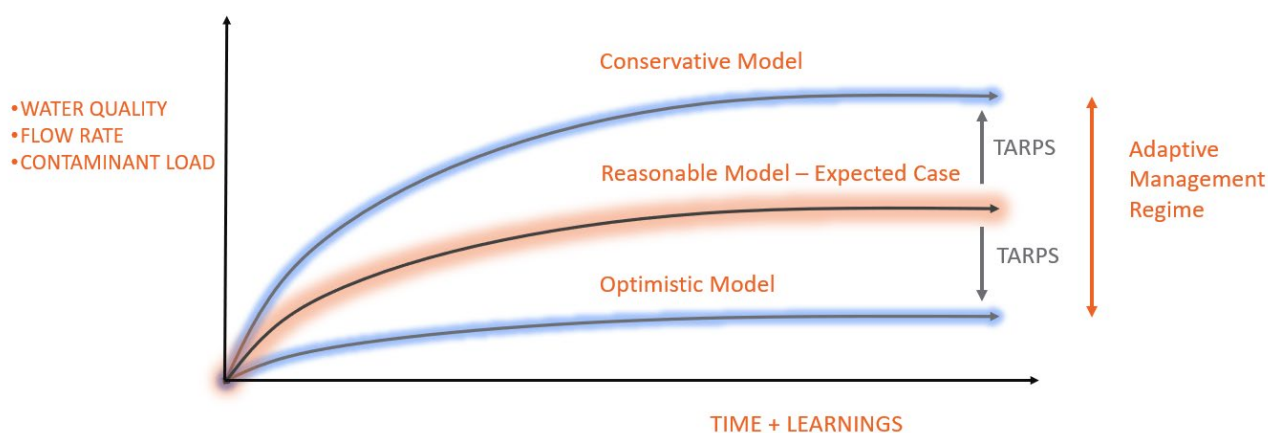


Figure 1: Adaptive Management Regime

Source: Weber (2020)

Trigger Action Response Plans

MGL has identified a number of risks for water quality during the BOGP assessment of environmental effects. Adaptive management is proposed to manage these risks. It is recommended that TARPs be developed for these key risks (Table 1) and that these TARPS are certified as being appropriate and suitable by the Otago Regional Council (ORC) as part of the certification of the management plans. Noting TARPs for the Water Treatment Plant and the Passive Treatment System will be developed later subsequent to site-specific studies, which will confirm trigger thresholds and suitable management measures.

This addresses the request by Kathryn McArthur in the Joint Witness Statement (JWS) for Water (8/9 June 2026) [14] that “KM would like to see trigger levels defined at least within the management plans for what constitutes ‘poor water quality’ in the ELF surface runoff and seepage which triggers management responses in relation to both surface runoff and seepage from the ELF”

Risks to water quality may also be managed by a SOP. SOPs are provided in Table 1 and will be appended to the appropriate management plan for certification by the ORC. SOPs may include TARPs.

Table 1: BOGP TARP and SOP Schedule

NO.	MANAGEMENT PLAN (MP)	TARP / SOP	EXPLANATION
SOP 1	Soil MP	Characterisation of Topsoil	- To manage the risk of soils elevated in arsenic. - To ensure soils elevated in arsenic are managed appropriately. - To be included in the Soil Management Plan.

NO.	MANAGEMENT PLAN (MP)	TARP / SOP	EXPLANATION
SOP 2	ELF MP	Materials Classification	- To ensure materials are managed appropriately to minimise risks to water quality. - Section 5.1 of the ELF MP. - This process may require a separate SOP to operationalise the approach for field staff.
TARP 1	ELF MP	Material Schedule	To ensure sufficient materials are available for construction purposes.
SOP 3	ELF MP	ELF Construction	To ensure the ELF is constructed to meet design expectations as per Section 6.2 to Section 6.9 of the ELF MP.
TARPs 2-5	ELF MP	ELF Geochemistry	To ensure the ELF is constructed to manage geochemical risks: [2] Geochemistry testing as per Section 9.3.1 of the ELF MP. [3] Oxygen ingress as per Section 9.3.4 of the ELF MP. [4] Net Percolation as per Section 9.3.5 of the ELF MP and site-specific trials as explained by Consent D.04 Condition 88. [5] Particle size segregation as per Section 9.3.6 of the ELF MP.
SOP 4	TSF MP	Tailings Geochemistry	To confirm and validate geochemical properties of the tailings.
TARP 6	Water MP	Flow Augmentation	- To manage flow rates within Rise and Shine Creek and Shepherds Creek. - Consent D.02 (RMFT25.007.07) Condition 4, 5, 6.
TARP 7	Water MP	Surface water runoff	- To manage risks associated with runoff during higher rainfall events from haul roads and ELF surfaces that causes exceedance of trigger values. - To include a TARP for collection ponds and silt pond performance. - Consent D.02 (RMFT25.007.07): Active Water Treatment Plant Condition 10.1a.
TARP 8	Water MP	Dust Suppression Water	- To manage the risk of using pit water for dust suppression if pit water becomes elevated in potential constituents of concern (PCOC). - Consent D.02: (RMFT25.007.07): Active Water Treatment Plant Condition 10.1a.

NO.	MANAGEMENT PLAN (MP)	TARP / SOP	EXPLANATION
			Table 9: Surface Water Performance Monitoring of the Water MP.
TARP 9	Water MP	Groundwater	- To manage risks to groundwater water quality. - Consent D.04: Condition 30.
TARP 10	Water MP	Uncaptured Seepage	- To manage risks to groundwater water quality. - Consent D.04 Condition 21. - Relates to surface and groundwaters - Noting examples of management measures include in the advice note are: <i>“suitable infrastructure / seepage collection systems include a ‘pump and treat’ system or a sheet pile wall down to unweathered bedrock across the width of the affected valley”</i> as proposed in Consent D.04: Condition 26.
TARP 11	Water MP	Active Water Treatment Plant Construction	- To manage risks to surface and groundwater quality. - To commence construction of the active water treatment plant due to (Active Water Treatment Plant Condition): - Sulfate exceeds trigger values as defined in Consent D.02 (RMFT25.007.07) Condition 10.1(a). - Development of a water surplus as defined in Consent D.02 (RMFT25.007.07): Condition 10.1(b). - Permanent cessation of mining as defined in Consent D.02 (RMFT25.007.07): Condition 10.1(c).
TARP 12	Water MP	Active Water Treatment Plant Operation	- To ensure water quality objectives are achieved. - To manage risks for the active water treatment plant failure. - Consent D.02 (RMFT25.007.07): Active Water Treatment Plant Condition 13(k): Contingency measures in the event of engineering or process failure at the plant. - Note: this TARP should be provided after site-specific Active Water Treatment trials have been completed as detailed in Consent D.02 (RMFT25.007.07): Condition 7
TARP 13	Water	Passive Water Treatment Plant Operation	- To ensure water quality objectives are achieved. - To manage risks for operation of the passive water treatment plant. - Consent D.02 (RMFT25.007.07): Passive Water Treatment Plant Condition 20(g): Contingency measures in the event of engineering or process failure of the system. Note: this TARP should be provided after site-

NO.	MANAGEMENT PLAN (MP)	TARP / SOP	EXPLANATION
			specific Passive Water Treatment trials have been completed as detailed in Consent D.02 (RMFT25.007.07): Passive Water Treatment System Condition 14.
TARP 14	Water	Water Treatment Sludge	- To manage risks associated with water treatment plant sludge. - Consent D.02 (RMFT25.007.07): Condition 13(j). - Processes for the removal and disposal of water sludge or processing residues, including frequencies and triggers.
TARP 15	Water	ELF and TSF Seepage Rates	- To ensure water quality objectives are achieved by validating flow rates. - Table 9: Surface Water Performance Monitoring of the Water MP.
TARP 16	Water	ELF and TSF seepage water quality	- To ensure water quality objectives are achieved by validating water quality effects. - Table 9: Surface Water Performance Monitoring of the Water MP.

D.02 (RMFT25.007.07) - Schedule Two - General Conditions for Otago Regional Council Consents

The following conditions include adaptive management:

- Active Water Treatment Plant: Condition 10.1: *“The Consent Holder must instigate the construction and subsequent commissioning of the Active Water Treatment Plant upon the earliest occurrence of any of the following triggers”*.
- With the triggers being defined in (a), (b), and (c) of that condition.
- Furthermore, when the trigger has been achieved, the ORC must be advised.

D.04 - Schedule Two - General Conditions for Otago Regional Council

The following conditions include adaptive management:

- Condition 18.2 states: *“The primary objective of the Water Management Plan (WMP) is to ensure that water is managed in a way that meets water quality limits in consent conditions, protects the environment, supports operational needs, and meets regulatory requirements”, and one of the key objectives is:*
 - Condition 18.2(g) states *“Monitor water quality and quantity to inform adaptive management processes and ensure compliance”*.
- Condition 19(e) is explicit around the risk of uncaptured seepage: *“Proactive monitoring and adaptive management processes and relevant triggers, specifically including how appropriate*

groundwater and surface water triggers for the detection of uncaptured seepage are to be developed, including the process, criteria, and actions to be used to ensure that any deterioration in groundwater or surface water quality within the Project Site is identified and addressed before seepage reaches the Bendigo Aquifer, the Ardgour Aquifer, or the Lindis River”.

- Condition 23: *“The WMP must set out the groundwater performance monitoring the Consent Holder must implement, including:*
 - *Monitoring purpose, location, frequency, and parameters being measured;*
 - *Reporting of data in the annual report by a Suitably Qualified and Experienced Person;*
 - *Advice by a Suitably Qualified and Experienced Person (SQEP) on trends; and*
 - *Identification of any adaptive management responses triggered by the performance monitoring data”.*
- Condition 21: Provides triggers and responses for mine circuit water seepage that must be established by a SQEP
- Condition 22: Requires the triggers, processes to develop the triggers, and response measures developed in Condition 21 to be included in the Water MP.
- Condition 26: Discusses additional management measures for mine circuit water seepage.

TREATMENT

The post closure water and load balance model (WLBm) requires refinement to address uncertainty and validate key risks and management measures including the capacity and performance requirements of the active and passive treatment systems. This includes, for instance:

- Flow rates due to net percolation: Where trials are proposed within 12-18 months of bulk earthworks (Consent D.04 Condition 88 and Section 2.3 of the Water MP).
- Water quality estimates that will be refined from empirical data on an annual basis as detailed through performance and compliance monitoring in the Water MP.
- Active and Passive treatment trials to validate the performance criteria of the proposed treatment processes. This is explained on Consent D.02 (RMFT25.007.07) Condition 7 and Condition 14.
- Any material variance from the WLBm would be managed by appropriate triggers and response plans as detailed in TARPs that will be provided as part of the management plans that will require certification.

Active Treatment

MGL will be required to install an active Water Treatment Plant (WTP) if performance monitoring data indicates there are risks associated with potential non-compliance of water quality limits. Triggers for when the WTP needs to be installed will be managed by TARPs contained in the Water MP.

Active water treatment plant (WTP) trials will commence one year after tailings production commences. This will provide a reliable water quality for laboratory testing and subsequent site-based pilot plant trials. Risks for water quality during the early operational years are low with risk increasing in the later years of the project (MWM, 2026). Hence there is sufficient time to undertake such trials.

Active water treatment will be designed to treat surficial mine circuit water and mine impacted seepage waters. If required, a 'pump and treat' system or a sheet pile wall down to unweathered bedrock across the width of the affected valley will be used (as proposed in Consent D.04: Condition 26) to capture all seepage for return to the TSF² or the water treatment system(s).

The WTP study completed by Process Flow Limited (MWM, 2025) is an order of magnitude study. Further work is required to validate the capacity and performance requirements of the WTP. This includes the studies presented in Consent D.02 (RMFT25.007.07) Condition 7. Recent bench-scale studies demonstrate that ettringite treatment is a potential suitable technology for active water treatment of mine impacted waters (e.g., Hoodhills et al., 2026).

Active water treatment will continue until passive treatment systems (PTSs) can successfully achieve the proposed water quality limits. If passive treatment does not achieve agreed water quality limits, then active treatment will need to continue. This ongoing active treatment requirement is applicable to both Shepherds Creek and Rise and Shine Creek (where mine circuit waters can be pumped to the proposed active water treatment plant located in the Shepherds Creek catchment).

Passive Treatment

Passive treatment will not commence at BOGP until it is demonstrated by site-specific trials that passive treatment can achieve the proposed water quality limits. Active water treatment and management of mine circuit waters will continue until such a time that it is shown that passive treatment can achieve water quality limits.

The recommended transition to passive treatment includes the PTS being operated for 2 years with the active WTP on care and maintenance. This will provide a back-up option if full scale passive treatment does not work during the full-scale PTS implementation phase. After two years the active WTP can then be decommissioned.

Passive treatment trials are best undertaken using site-specific waters under site specific conditions. This is explained in Consent D.02 Condition 14. Paul Weber, Kathryn McArthur, Jenny Webster-Brown, and Alexandra Badenhop support the inclusion of such studies as consent conditions (JWS: Water Paragraph 25).

Site-specific trials undertaken before passive treatment systems are relied upon are an industry-standard approach. Reliance on laboratory scale testing of synthetic waters prior to the commencement of a green-field project would still require site-specific trials to validate treatment efficiencies. This uncertainty is managed by MGL complying with water quality compliance limits by continuing to run the active WTP until the PTS is confirmed as being suitable.

² Tailings Storage Facility

Water and Load Balance Model Updates for Treatment Efficiencies

The WLBM will be updated with water treatment efficiencies once further studies have been completed using site-specific trials (Consent D.02 (RMFT25.007.07) Condition 7; Consent D.02 (RMFT25.007.07) Condition 14).

Currently the WLBM uses passive treatment efficiencies and proposed water quality compliance limits (provided as part of the initial application) to determine when active water treatment (defined by the Active Closure Phase) is no longer required. The WLBM has not been updated as there remains uncertainty about passive treatment efficiencies.

If the PTS cannot achieve the proposed water quality limits, then the active WTP will continue to operate.

PIT LAKE WATER QUALITY

Professor Jenny Webster-Brown (2026) states *“Despite the very significant environmental risk being posed by the poor water quality predicted for the residual pit lakes and TSF wetland, no monitoring of these water bodies appears to be proposed”*.

The following comments are provided:

- Pit sumps will be monitored during the Operational Phase of the BOGP. This is explained in TARP 10 as part of monitoring for dust suppression water. The data will also be immensely valuable for construction of the closure pit lake model to understand pit wall runoff water quality.
- Monitoring requirements for pit sumps are contained in Table 9 of the Water Management Plan.
- Monitoring of the SRX and RAS pit filling rate will be used to validate the WLBM for the site. This is explained in Section 11.2 of the Water Management Plan.
- Pit lake monitoring is proposed in the Water Management Plan (Section 11.9.2) during the closure phase.
- During the Operational Phase of the BOGP, a comprehensive pit lake model will be developed (as explained in Section 13.2 of the Water Management Plan) and as detailed in Consent D.04 Condition 32: *“The Consent Holder must commission a comprehensive pit lake model that will include biogeochemical processes, nutrient assessment, and scenario modelling. This should be completed as part of closure readiness planning during the mining operations phase of the BOGP”*. This will consider stratification risks on water quality (raised by Professor Jenny Webster-Brown, 2026: Paragraph [42]).

The monitoring program proposed is comprehensive and will enable the development of the pit lake model for SRX and RAS pits as part of closure planning.

ARSENIC CONCENTRATIONS IN SEEPAGE (ATTENUATION)

Professor Jenny Webster Brown (2026) states: *“I remain very concerned that the concentrations of arsenic in mining impacted waters on site and in receiving waters are underpredicted. “Empirical factors”*

have been arbitrarily applied to reduce arsenic (and iron) concentrations in source terms and during modelling processes”.

It is assumed the concern relates to attenuation factors for seepage from the TSF and ELF's as it was agreed in expert conferencing (JWS Water) that the source terms are reasonable:

- TSF: Paragraph [32]: *“MP, AB, PW and JW consider that the derived seepage water quality from the TSF is robust and sufficiently conservative to enable the assessment of operational and long-term treatment requirements”*
- ELF's: Paragraph [33]: *“MP, JW, AB and PW consider the predictions to be reasonable. They note that the characterisation of the ELF discharge is based on a mix of Bendigo leaching data and analogous empirical data. They consider that the water balance model needs to be updated when performance monitoring data for the seepage is available and indicates that seepage water quality is materially different to that predicted”*

Section 4.2.2 of the BOGP Operational Water and Load Balance Model (MWM, 2026) considers attenuation of PCOC within the unrecovered seepage. This assessment was not undertaken as part of the initial FTAA application. Attenuation was documented by Craw and Pope (2017) and Craw and Nelson (2000) at Macraes Gold Mine, which is considered a suitable analogue for the BOGP having the same lithological materials (i.e., Otago Schist) and similar sulfur content.

These studies indicated that sulfate is not attenuated. Hence one reason for using sulfate as a key indicator of mine impacted waters (as utilised in Consent D.02 (RMFT25.007.07) Condition 10.1(a) as a trigger to construct the active water treatment plant [TARP 14].

However, arsenic was attenuated by up to 6 orders of magnitude and Fe was attenuated by up to 4 orders of magnitude) (Craw and Pope, 2017). A conservative attenuation factor was applied to As (2 orders of magnitude) and Cu, Fe, and Mo (1 order of magnitude) based on the studies of Craw and Pope (2017) and Craw and Nelson (2000).

Performance monitoring of groundwater downgradient of the ELF's and TSF will identify elevated sulfate prior to any elevation in As, Cu, Fe, and Mo concentrations as sulfate will not be attenuated. This provides a suitable trigger to enact management measures that include seepage management processes to ensure all seepage is captured (Consent D.04: Condition 26).

CLOSING REMARKS

Please contact me directly if further clarifications are required

MINE WASTE MANAGEMENT LIMITED

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