Bendigo Ophir Gold Project

Review of Proposed Method for Mine Closure and Restoration Bond

23/03/2026

Prepared for:
Central Otago District Council

E2558

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Executive Summary

Central Otago District Council and separately Otago Regional Council (ORC) have engaged Damwatch Engineering Ltd. (Damwatch) to review the Bond Introduction for the Bendigo-Ophir mining project. The proposed approach and quantum of the Bond needs to be sufficient to cover the expected costs in the event Matakanui Gold Ltd (Matakanui Gold) fails to undertake the closure and rehabilitation of site disturbance and a period of aftercare following the closure of the mine.

In common with the development bonds for other large mines in Otago and elsewhere in New Zealand, a Bond is typically agreed annually to cover those works required to close and restore the mine. In addition, the Bond sum must be a sufficient to cover the financial obligation for undertaking aftercare for an agreed period following closure.

In common with other mines, the Bond is set and held as a single sum and not divided or apportioned to the various beneficiaries of the Bond. When the Bond is called upon, at that time the beneficiaries must decide on how best to distribute the available fund to achieve the desired outcomes for closure and restoration.

This report focuses on:

- The adequacy of the information upon which the Bond can be based for the project and where additional information is required.
- Procedures necessary to provide for a consistent approach to the annual agreement for a Bond.
- Matters relevant to the setting of the Bond for Year 1.
- Matters relevant to the setting of the Bond for subsequent years.

The primary finds are:

- The Bond to be held for the benefit of Otago Regional Council, Central Otago District Council and potentially the Department of Conservation estate (the Parties) must be sufficient to cover the anticipated costs and the risks associated with the works to be undertaken if the bond is called due to the applicant abandoning the site.
- The quantum of the Bond will vary from one year the next depending on the extent of works to be undertaken in the mine and the works required to close and restore the project area, both of which will vary from year to year.
- Matakanui Gold (Santana Minerals Ltd) should be required to provide to the Parties, at an anniversary date to be set out in consent conditions, the quantitative definition of the:
  - Intended extent of works for the coming year.
  - Quantities of materials involved in the works for the following year.
  - Quantities of materials for the closure of the mine.
  - Quantities of materials required for restoration.
  - Commercial unit rates for works appropriate should the Councils be required to engage local contractors to remediate the site.
  - Updated risk assessment to match the updated cost estimate.
- Matakanui Gold (Santana Minerals Ltd) should be required to provide to the parties, at an anniversary date to be set out in consent conditions, the proposed Bond value.

- The Parties must be provided with sufficient time, as set out in consent conditions, to evaluate and review the proposed Bond.
- The methodology for developing a Bond value is set out in "Bendigo-Ophir Gold Project Bond Introduction", 7th May 2025, by Lane Associates Ltd. This methodology has been adopted for other mining projects and has been agreed by those parties to provide an adequate basis for negotiating the project's bond.

The May 2025 report by Lanes Associates Ltd was prepared in the absence of any consent conditions that might alter the assessment of a Bond for the first year. The report is now out of date and no longer appropriate for assessing a Bond for the first year of work following the granting of a licence to operate. Damwatch understands that the scope of work undertaken to date now exceeds that planned. Hence the cost and quantities should be updated. Further, Damwatch understands that the consent will be applied in October 2026.

Once consent conditions have been promulgated Matakanui Gold (Santana Minerals Ltd) should be required to submit an assessment and proposal for a Bond. Damwatch understands that there is separate and existing consent to undertake works on site, but this consent does not require the lodging of a Bond. The proposed Bond for the commencement of the project should address the restoration of the whole site, and cover the closure and restoration of:

- All works undertaken to date until consent or licence to operate has been granted.
- All works proposed for the first year of operations following the granting of consents.
- Costs incurred by the councils in commissioning and administering the works for closure and restoration.
- Risks associated with the undertaking of the works the works for closure and restoration.

Damwatch has gained an appreciation of the extent and content of the submissions provided by Matakanui Gold (Santana Minerals Ltd). These are summarised by the following in so far as they relate to the development and setting of a Bond for the works for any year of the project:

- Principles and objectives are described for the works to be undertaken for closure and restoration
- None of the documents provide sufficient quantitative information on which to base the development of a Bond value for any period from this time onwards.

This report sets out the basis for the derivation of this executive summary.

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List of abbreviations

Abbreviation	Meaning
Damwatch	Damwatch Engineering Limited
CODC	Central Otago Regional Council
ORC	Otago Regional Council
ELF	Engineered Landforms
LOM	Life of Mine
NMD	Neutral Mine Drainage
TSF	Tailings Storage Facilities.

1 Introduction

Damwatch is engaged by CODC to review and comment on the landscape issues related to the closure plan for the Bendigo-Ophir Gold Project. This project is currently being proposed by Matakanui Limited (Santana Minerals Limited).

Otago Regional Council (ORC) has engaged Damwatch Engineering Ltd. (Damwatch) to review the Bond Introduction for the Bendigo-Ophir mining project. The proposed approach and quantum of the Bond needs to be sufficient to cover the expected costs in the event Matakanui Gold Ltd (Matakanui Gold) fails to undertake the rehabilitation of site disturbance and a period of aftercare following mine closure.

This review has focused on:

- The adequacy of the information upon which the Bond is based for the first year of the project and where additional information is required.
- Assessment of the calculated value of the Bond for Year 1.
- Any other matters relevant to the setting of the Bond for Year 1 or subsequent years.

2 Background

Matakanui Gold proposes to develop the Bendigo-Ophir Gold Project. The mine consists of a new gold mine, ancillary facilities and environmental mitigation measures on Bendigo and Ardgour Stations in the Dunstan Mountains of Central Otago (Matakanui Gold Ltd (2025) “Bendigo-Ophir Gold Project Mine Closure Plan” J-NZ0454-002-R-Rev1).

The project involves mining four identified gold deposits. The orebodies are to be mined by open pit methods. Underground mining is also planned for the deeper parts of one of the orebodies in the later years of development. Most of the mining activities, ancillary facilities and associated infrastructure will be in the Shepherds Valley.

Access, and the service and administration offices are to be on the adjoining Ardgour Terrace. The activities also involves the abstraction of groundwater from the Bendigo Aquifer for related activities and the realignment of Thomson Gorge Road via Ardgour Station.

2.1 Postmining Land Use

Following closure of the mine the intent is to return most of the land to pastoral and natural landscapes with areas of ecological enhancement, in line with the current surrounding and underlying land use. Landscape changes resulting from mining, including the retention of pit voids in the post-closure landform, may result in some disturbed areas within the closure boundary being unsuitable for the proposed land use.

Land use options considering access requirements for stakeholders and the public will be investigated through the project’s lifecycle in consultation with local communities, pastoralists and other stakeholders.

3 Mine Closure Documentation

The following is a bullet point list of key issues relating restoration:

- **Landscape effects** – Document B.19.
- **Rehabilitation** approach and objectives descriptions are provided – Document G.07A.
- **Erosion and Sediment Control** descriptions are provided – Document G.14.
- **Engineered Landform Management** description is provided – Document G.15.
- **Tailings Management Plan objectives**, intent and dam safety management are provided – Document G.16.
- **Pond and Reservoir Management objectives,** intent and dam safety management are provided – Document G.17.
- **Soil Management Plan**; only the intent is provided – Document G.20.
- **Quantitative measures**: Typically, quantitative measures and means of compliance are not provided in the documents listed above.
- **Persons affected** by the project are listed in Document B.19 Appendix 4.
- **Monitoring** - Requirements for monitoring, descriptions for monitoring, who is to do the monitoring – not identified in documents.
- **Physical and visual effects** on the area are provided – Document B.19.
- **Draft Consent Conditions**: No draft conditions relating to landscape are apparent in the documents viewed.

The general summary for the landscape effects is that the documents provide clear descriptions of intent. However, there is insufficient information provided to provide a quantitative means of assessing compliance throughout the period of the project.

4 Review of Mine Closure Plan

The Mine Closure Plan (Matakanui Gold Ltd (2025) "Bendigo-Ophir Gold Project Mine Closure Plan" J-NZ0454-002-R-Rev1) indicates the mine is estimated to have an operational project life of thirty one years, including the pre-development, construction, operation and active closure phases. The Bond Introduction forecast is projected for eleven years.
A five-year maintenance period following restoration is assumed. This is a short period for monitoring the performance and stability of a trailing storage facility. Damwatch recommends a maintenance period of 20 years is adopted, similar to the periods for other gold mines in the region.
The following closure strategies are to be implemented to manage risks associated with closure of the mine:

- Engineered landforms (ELFs) will be rehabilitated with design informed by consideration of waste characterisation and ecological and hydrological factors to provide for long term stability.
- To reduce the potential for Neutral Mine Drainage (NMD) generation, overburden will be managed during operations. Layered ELF construction, as well as capping of final slope profiles is planned to minimise the potential for air and water ingress. The construction methodology recommends that ELFs are constructed in low-height lifts dumping next to a tip-head and dozing over the edge to control segregation.
- During the project life, overburden will be used in the Tailings Storage Facility (TSF) embankment construction in the upper Shepherds valley and otherwise placed in ELFs in Jean Creek and the upper Shepherds valley. SRX and SRE over-burden will be stored in a dedicated ELF in the RAS valley. CIT pit will be backfilled to sit appropriately within the surrounding topography profile. SRE pit will be backfilled and covered by the SRX ELF.
- Tailings (waste fines) will be stored in the engineered tailings storage facility (TSF) in Shepherds Valley. The TSF is designed and will be constructed in accordance with the NZ Dam Safety Guidelines 2024 but will additionally be buttressed by the Shepherds Creek ELF on the downstream side. The final landform will be capped with overburden and topsoil. Water will run onto the surface from the surrounding catchment towards the north valley wall, then west towards the ELF into a diversion channel on the north side of the ELF to Shepherds creek.
- Management plans implemented for relevant environmentally and culturally significant values, and protection of agreed social and cultural heritage values and sites in accordance with Cultural Values Statements and Heritage authorities.
- Implementation of progressive rehabilitation during the life of the mine to promote revegetation, and monitoring of rehabilitation to inform closure planning, closure outcomes and refinement of completion criteria.
- Placement of safety bunding or structures around mine pit voids to manage risks associated with inadvertent public access post-closure. Designs will consider the need for ongoing public access associated with existing access agreements with pastoral stations, and stakeholder post-closure access requirements.
- All surface infrastructure will be removed, except for infrastructure buried more than 1 m below the ground surface, unless agreed with the landowner.
- Environmental modelling including geochemical, geotechnical, surface water, and groundwater will be undertaken on an iterative basis during the life of the mine to inform operations, mine planning, design and closure planning with the intent of providing for no unacceptable impacts.

5 Commentary

The following comments are based on impressions gained from an overview of the contents of available documents relevant to mine closure and restoration of the affected areas.

5.1 Plans

The plans provide an indication of the relative location of various project works and project assets. They do not provide quantities for any of the items identified. Thus, these figures do not provide a basis for assessing any commitment to the works to be undertaken or the quantum of works for rehabilitation.

5.2 Reports

The reports can be characterised as voluminous setting out principles and intentions to meet qualitative practices, without including quantitative measures against which compliance can be measured.

The Closure Plan (Matakanui Gold Ltd (2025) “Bendigo-Ophir Gold Project Mine Closure Plan” J-NZ0454-002-R-Rev1) includes section and subsections covering topics such as:

- Closure Strategy (Section 8.1). The strategy is to be informed by studies that are yet to be commenced or quantified.
- Closure Outcomes (Section 8.2).
- Closure completion criteria (Section 8.3) which are set out on the SMART principal (Specific, Measurable, Achievable, Relevant and Time bound). However, those criteria set out in Table 7 are not sufficiently specific nor measurable.

Consequently, the impression of the reports suggests the outcomes of landscape rehabilitation cannot, from these reports alone, form a means of measuring landscape rehabilitation compliance.

In summary, despite the voluminous reports provided for review, at present Damwatch is of the view that there is insufficient quantitative criteria against which to measure the compliance with an intended landscape rehabilitation, for instances:

- Areas of a specific species of vegetation, wood land, grass land, cushion field vegetation.
- The minimum depth of suitable soil as a growing medium over the TSF (Tailings Storage Facility). This depth changes depending on the different types of vegetation being proposed.
- The maximum distance between surface water drains, and distance between benches to prevent surface erosion and gully formation that would otherwise degrade vegetation.
- The definition of slopes gradients and subsurface drainage to maintain the stability of vegetated surface veneers.

The definition of the rainfall event AEP for which the works outlined above at to be designed.

5.3 Lane Associates Ltd (May 2025) "Bendigo Ophir Gold Project – Bond Introduction" Final Report

Lane Associates Ltd provides a Bond report in a format common to many other reports prepared for other mining projects. The methods outlined in the report are commonly adopted for the assessment of Bonds for mining activities.

- The report does provide a brief description of the works to be undertaken in each of the years.
- There is a statement that there will be a period of a further 25 years of management and maintenance of ecological areas.
- Appendix A sets out quantitative estimates for year by year rehabilitation costs for a 10 year closure plan. However, there are no drawings or details included the report setting out the basis for the quantities adopted in the estimates.
- Appendix B sets out the assumptions for the assessment, but it does not reference a set of drawings (or other information) from which the qualities were developed.

The report proposes generic methods that are consistent with similar reports and approaches taken for the development of bonds for other mining activities in New Zealand.

6 Bond Introduction Report

Review of the Bond Introduction assessment is based on the aforementioned documents. Damwatch supports the overall approach by Matakanui Gold and Lane Associates whilst noting the comments herein.

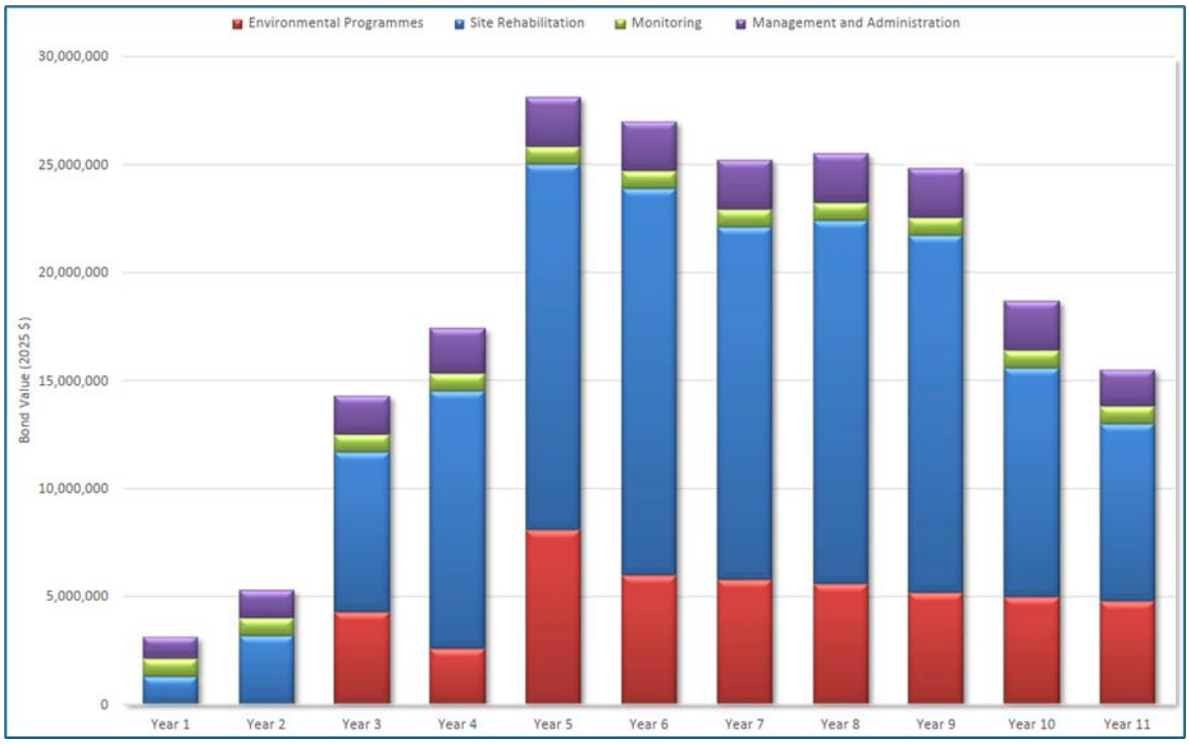
The components outlined in the Bond Introduction Report are generally in agreement with the Mine Closure Plan. The Bond Introduction Report is based on the information available at the time of preparation, mid 2025. The report also notes that "A review of the first bonds quantum is expected to be undertaken prior to the start of site works". For the remainder of the project the Bond costs estimate will be revised annually.

The Bond estimate is understood to be prepared to a P50 level with a contingency applied. Other mine projects in the regional adopt a P80 level in estimating the Bond. This discrepancy can reasonably be questioned. Reference to an appropriate contingency sum is mentioned but not clarified. The basis for the contingency, where it is applied, should be clearly stated.

The report provides no discussion or basis for discounted cost. Year 1 is presented as a discounted cost in the rehabilitation estimates. Random checks of numeric calculations of the rehabilitation estimate in Appendix A of the report are generally satisfactory. The indicative progression of a Bond value through the lifespan of the mine is indicated in Figure 6.1. Although the figure is derived from the numbers provided by Lanes Associates, the these are likely to change with the requirements of the consents and the development of detailed plans. Thus, the numbers can only be considered to understand the method of derivation and the likely escalation and eventual diminution of the Bond through the mine's lifecycle.

The yearly estimates are developed from an understanding of and requirements for:

- Environmental programmes.
- Site rehabilitation.
- Monitoring.
- Management & administration.



Source: Reproduced from Figure 4.1. from Bond Introduction report.

Figure 6.1: Preliminary Bond estimate by Year

Within site rehabilitation, earthwork related activities make up a significant portion of the costs. In Year 5 circa $11M or 44% on the total Bond is related to earthwork activities (fills etc.), with environmental programmes making up to 32%.

Figure 6.2**Error! Reference source not found.** and Figure 6.3 present the distribution of the Bond calculation by item/component for Year 1 and Year 5 respectively. In Year 5 the larger portions of the costs are associated with low grade ore transport for disposal (captured under Roads and General), the Main ELF, the TSF and the environmental programmes.

Here again the figures are intended to indicate the changes that occur through the development of the mine rather than providing an accurate reflection of the actual distribution of value for the different components.

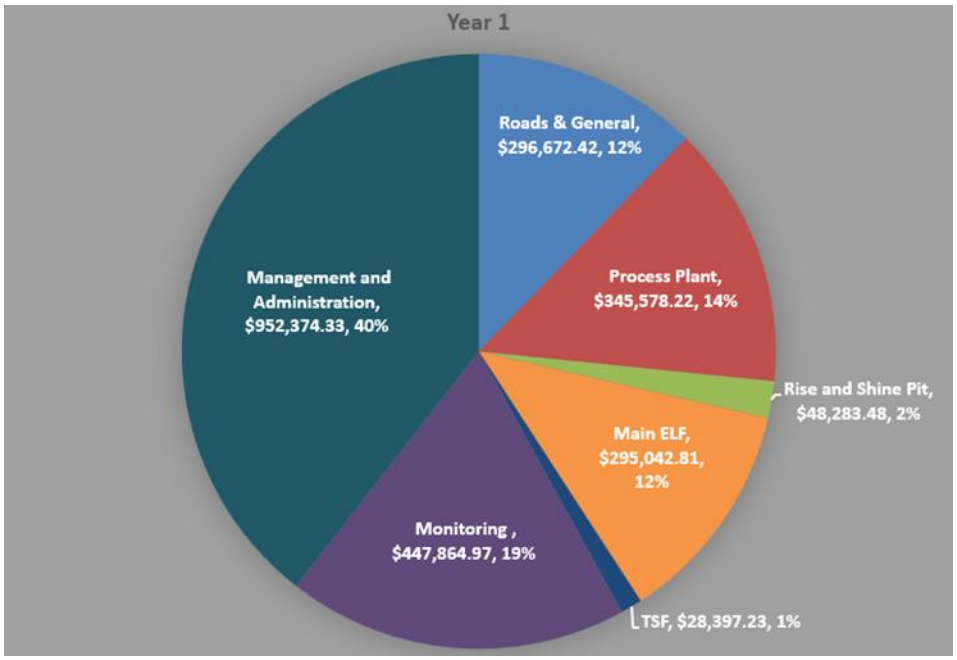


Figure 6.2: Year 1 Bond Estimate and Distribution by Item/Component.

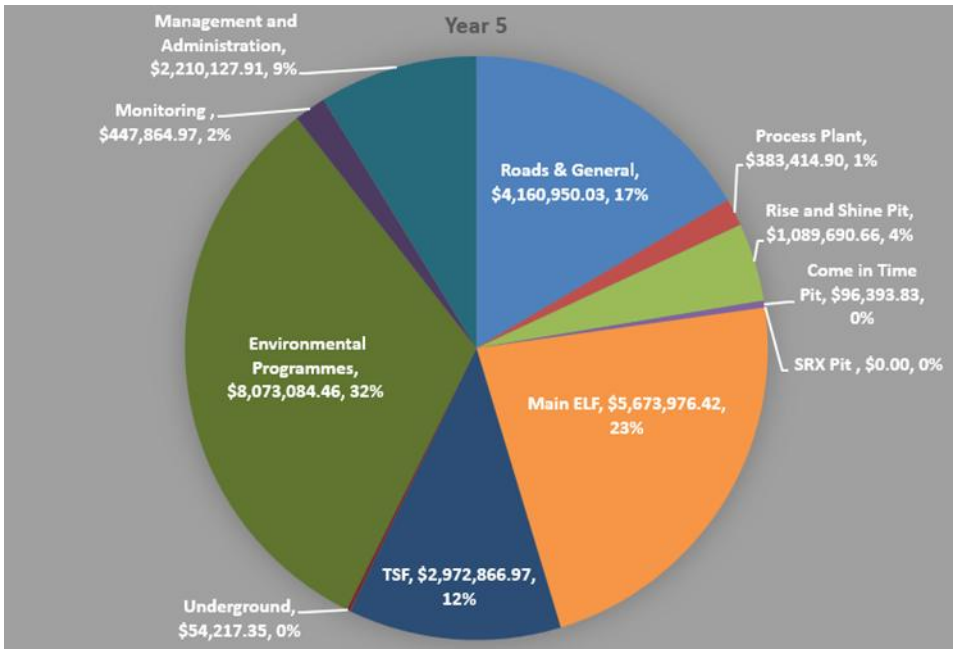


Figure 6.3: Year 5 Bond Estimate Distribution by Item/Component

6.1 Earthwork Related Unit Rates

Due to the quantities involved the unit rates related to earthworks have potential for cost impact on the overall Bond. This becomes more relevant from Year 3 onwards.

The Bond Introduction Appendix B states that the unit rates are based on late 2024 costs, though supporting calculations indicate 2026. Unit rates reflecting 2026 should be confirmed.

Machinery rates within the supporting calculations are in some cases reflective of the expected range but in others underestimated. Inconsistencies in progression of machinery rates (increasing cost with increasing plant size/capacity) should be addressed, e.g., for the replacement road the 30t excavator rate used in calculation is significantly lower than the rates for 20t and 25t excavators.

Bulk Earthwork rates are considered to reflect the efficiencies that would exist under an established mining operation. This is only reasonable if the materials are available on site, require limited processing and have limited transportation with single handling. It is also not known if mining earthmoving plant, staff or materials would be available for the mine closure and rehabilitation works if the Bond was called upon. The assumption should be that these resources will not be available. This would require alternative contracting arrangements to implement the rehabilitation to the same processes and standards. The latter is likely to demand higher unit rates for earthworks.

6.2 Environmental Programmes

Environmental programmes are introduced from Year 3 onwards.

The Bond Introduction calculation states that the environmental programme costs are based on initial rates provided by Habitat NZ. However, specific detail is not provided and should be in subsequent Bond reviews.

6.3 Groundwater/Water Quality Monitoring

Groundwater/water quality monitoring costs are noted to have been based on low valuations. Supporting calculations refer to a considerable range in monitoring costs at mine sites across New Zealand. The range indicates that the costs adopted in the Bond Introduction could potentially be two or three times higher. This would for example increase the Year 1 costs by the order of between $450k-$900k. A more detailed assessment is therefore recommended to support calculation of this component.

6.4 Dams and Reservoirs

Costs for Dam Safety Compliance are not identified or recognised in the Bond Introduction.

Requirements for Dam Safety Compliance are recognised and detailed within the Matakanui Gold Limited Tailings Management Plan (dated 24 July 2025). The latter includes maintaining a specific risk register for the TSF.

The costs for Dam Safety Compliance need to be separately recognised in the Bond Reviews. It is noted that Shepherds TSF is identified in the Tailings Management Plan as a classifiable dam and assessed as a having a High Potential Impact Classification (PIC).

Damwatch's experience is that the cost of a) routine dam surveillance and b) preparing Dam Safety Assurance Programme and documentation has increased across all sectors.

7 Risks and Associated Cost

Risk cost is not included in the Bond Introduction. Formal risk assessment/review needs to be carried through with contingency allowances included as part of the Bond Review.

The Mine Closure Plan has currently identified twenty-two closure risks. These are detailed in the project risk register appended in the plan Appendix F -Closure Risk Register by Greenroad. The assessment date of this risk register is given as 13/09/2024.

The risk register defines the following risk categories,

- High: “Unacceptable major disruption likely. Different approach required. Priority Management attention required.”
- Significant: “Unacceptable major disruption likely. Different approach required. Priority Management attention required.” Noting this is the same descriptor as high.
- Moderate: “Some disruption. Different approach may be required. Additional management attention may be needed.”
- Low: “Minimum impact. Minimum oversight needed to ensure risk remains low.”

Thirteen residual risks are identified as significant, eight residual risks are identified as moderate and one residual risk is identified as low. Most of the risks are associated with closure planning and/or closure implementation and/or post closure functions.

Currently the risks within the register are not allocated to risk owners and the effectiveness of mitigation controls are not identified. The risk register otherwise records the risks as acceptable with proposed additional actions identified to strengthen controls. This appears counter intuitive given the risk category definitions. However, the report does note the risk register should be next reviewed in Q3 2025. Thus, an updated risk register revision is due.

Other potential risks may arise through subsequent stages of the project. The period for regular review of the risk register is not explicitly defined. Matakanui Gold propose review of the mine closure plan every three years. Damwatch consider a joint review of the risk register and risk cost included in the Bond every 2 to 3 years through a risk workshop process to be appropriate.

In the absence of risk costs, Damwatch recommends the application of a 15% Design and Contract / Environmental / Operational risk to any proposed Bond for Year 1.

8 Bond Assumptions for the Councils

The Bond is required to be held for the joint benefit of Otago Regional Council, Central Otago District Council and potentially the Department of Conservation (the Councils). The Bond to be held will be reviewed annually to reflect the annual changes at the mine.

The Bond quantum calculation prepared by Matakanui Gold has made assumptions, which if not followed will lead to inefficiencies and hence additional costs to Councils in the event of the Bond being called upon, these assumptions include:

- The Bond will be implemented to provide funds for one closure and restoration Works by one entity and not as three separate projects to be implemented separately by the three parties. Consequently, there is an expectation that the Councils will work together to complete the closure and restoration.
- The Councils will need to manage the Bond capital value so that there are sufficient funds to complete the project at some time in the future, and for this reason the costs are discounted to present value. Damwatch recommends the Councils review their ability to manage the Bond amount to deliver the future expectations based on the adopted discounting approach described.
- The Bond methodology anticipates the Councils, in undertaking the Works, have similar efficiencies in project and contract management as Matakanui Gold, this is a significant assumption given the limited information currently available in the contingency Closure Plan and considering large earthworks projects are not core business for the Councils.

The Bond assumes that mining company resources (plant and labour) will be available should the Bond be called in. If the mining company resources are proposed for use in the Contingency Closure, then a legal agreement to protect supply of these resources needs to be in place as part of the Bond. If this is not arranged, then alternative contracting arrangements are required to implement the closure and restoration to the same standards.

- It is important the Councils are aware of any assumptions by Matakanui Gold regarding sequencing / priority of closure works. This is not critical in Years 1 and 2 but is important once mining starts in earnest.
- The Councils must have an agreement on the strategy to manage an early mine closure particularly for project initiation, strategic planning, consenting strategy, and contract procurement.
- Risk is not dealt with specifically within the Bond calculation, it is currently dealt with under a catch-all contingency item. Councils will need to identify and manage the risk cost applied to the Bond as a separate item.
- The Bond calculation assumes that closure and restoration works can commence on day 1. However, planning and engagement of various consultants and contractors is required before works can commence. Often a nominal one year is adopted for this intervening period, and there are costs associated with these activities in this year.

9 Conclusions

The costs associated with the closure and restoration of the mine to be developed by Matakanui Gold (Santana Minerals Ltd) will vary from one year to the next. The costs vary because of the extent of workings that are open and un-remediated. Thus, the cost can be expected to increase in the initial years and then decline as the mine is progressively remediated towards mine closure.

The closure plan suggests that a five-year maintenance period following restoration. This is a short period for monitoring the performance and stability of a trailing storage facility. Damwatch recommends a maintenance period of twenty years is adopted, similar to the periods for other gold mines in the region.

Thus, the Bond necessary to cover possible closure and restoration changes from year to year and should be reviewed on an annual basis to reflect the changes in the mine's development cycle.

The Bond for any year of the project's life should cover the closure and restoration of:

- All works undertaken to date.
- All works proposed for the following year of operations.
- Costs incurred by the councils in commissioning and administering the works for closure and restoration.
- Risks associated with the undertaking of the works the works for closure and restoration.

The Bond for the first year of operation must cover in addition:

- All works undertaken to date until consent or licence to operate has been granted.

The review of the information provided:

- The Bond Introduction Report (2025) prepared by Lane Associates can stand as read, regarding approach to calculating a Bond value for the mine.
- Other reports relating to the closure and restoration of the mine outline principles and concepts.
- However, at present, there is insufficient quantitative information presented in these related reports to develop a Bond value for any stage of the Bendigo Ophir Gold Project.

Prior to assessing the adequacy of a proposed Bond in any year the following are necessary:

- Consents quantifying requirements for mine closure and restoration.
- The submission of designs, complying with the consents, for mine closure and restoration each year.
- Quantities of materials required for closure and restoration.
- A program of work for closure and restoration.
- Commercial unit rates for undertaking the works.
- Assessment of risks.
- Together this information is to be the basis of the preparation of a proposed Bond, which is to be undertaken in accordance with the methodology set out in Bond Introduction Report (2025) prepared by Lane Associates Ltd.