BEFORE THE PANEL **FTAA-2507-1089**

UNDER THE	**FAST TRACK APPROVALS ACT 2024** ("**Act**")
IN THE MATTER OF	an application for approvals by Matakanui Gold Limited to establish, operate, rehabilitate and ultimately close an open pit and underground gold mining operation known as the Bendigo-Ophir Gold Project

---

STATEMENT OF EVIDENCE OF LAUREN WINDROSS

8 APRIL 2026

INTRODUCTION

Qualifications and experience

1. My full name is Lauren Hayley Windross.

2. I am a Senior Environmental Consultant at Williamson Water and Land Advisory Ltd. I hold a BSc (Hons) majoring in Geology from the University of Auckland.

Purpose and scope of evidence

3. The purpose of my evidence is to:

    a. Understand the proposed dust, surface water and groundwater contamination mitigation and monitoring proposed by Matakanui.

    b. Establish baseline (pre-mining) arsenic concentrations in the environment (dust, soil, surface and groundwater) for the Bendigo vineyard area.

    c. Provide recommendations for mitigation to reduce potential effects of arsenic discharges on the vineyards, based on sensitivities identified by the baseline assessment and assess the applicability of proposed monitoring on the Bendigo vineyard area.

Expert witness code of conduct

4. I have been provided with a copy of the Code of Conduct for Expert Witnesses contained in the Environment Court's 2023 Practice Note. While this is not an Environment Court hearing, I have read and agree to comply with that Code. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

SUMMARY OF EVIDENCE

5. My evidence is appended in my report titled "Proposed Bendigo-Ophir Mine, Environmental Effects Review: Arsenic" dated 8 April 2026. The key points of my report are set out below.

Matakanui Submission Review

6. Documents reviewed include those related to soil contamination and soil management, air quality and management, groundwater and surface water assessments, and the associated water management plan.

7. I consider there is significant potential for impacts of arsenic discharges (dust and water) arising from mining operations if appropriate management and monitoring is not in place for the duration of mining and through the extended closure period.

8. Overall, a high level of rigour has been applied to the technical assessments. However, the management plans have some significant areas where improvements can be made, including providing better clarity regarding monitoring requirements and contingency procedures, and refinement of trigger levels/ compliance levels for groundwater and surface water, to better reflect the connection between these two water resources and the existing baseline conditions.

Baseline data

9. Baseline monitoring has shown that arsenic concentrations in the Bendigo area environment are currently at very low concentrations. Risk of arsenic contamination via dust is low.

10. Insufficient dust was able to be collected so an arsenic baseline for dust has not been obtained.

11. Arsenic concentrations in soil within the Bendigo vineyards is within anticipated background ranges.

12. No arsenic was detected in samples collected from groundwater or surface water sources.

Recommendations

13. I have provided the following recommendations to the Fast Track Panel:

14. Provision of monitoring data to stakeholders from all monitoring types/ rounds is requested to provide transparency and confidence in process.

15. All monitoring and management plans would benefit from a monitoring checklist to aid compliance and consistency. Requirement for an overall Environmental Management and Monitoring Plan should be conditioned.

16. I agree that there should be development of ecological threshold guidelines/ standards to inform arsenic-contaminated topsoil reuse and remediation. This should be used in conjunction with existing human health standards.

17. Consideration is required as to how arsenic-contaminated waste rock will be managed during active mining. While topsoil is to be stockpiled and managed separately, it is not clear if there will be similar management protocols applied to waste rock and other soils with elevated arsenic, or if all waste rock/ stockpiled material will be treated as if it has elevated arsenic concentrations.

18. Further clarity is required regarding the duration of time arsenic-contaminated soils will be stockpiled and confirmation of the controls in place to prevent discharges to surface or groundwater or as dust.

19. The Soil Management Plan requires contingency procedures should there be an unexpected discharge of contaminants from the proposed mine.

20. The Soil Management Plan requires detailed information regarding ongoing monitoring requirements, such as whom by, the frequency, what the triggers for action are, and how these will be responded to.

21. Two daily monitoring events are recommended for visual dust monitoring, to account for variable wind conditions across a day.

22. I recommend further clarity is provided regarding the trigger levels and resulting actions to mitigate dust identified by visual means.

23. I also recommend real time dust monitoring closer to sensitive horticultural receptors. Lake Clearview (which was used for baseline data collection) is a suitable location for this purpose. The existing Lake Clearview monitor should be maintained, with additional monitoring near the administration buildings if desired by Matakanui.

24. Usability of the air quality plan would be aided by checklists/ guides to aid compliance and provide confidence to stakeholders as to the information being gathered at each monitoring event.

25. Clarity on use of pit water for dust suppression, and what the water quality standard would be to enable its use for this purpose, is required.

26. I recommend review of the surface water compliance limit for arsenic, as it does not reflect the connectivity between surface water features and the groundwater aquifer used for drinking water purposes, nor the existing (very low) concentrations of arsenic present in both resources. A lower target, consideration of upward trends to derive “trigger levels” or a two-step response procedure (review level and action level) to ensure early warning of contamination reaching the aquifer is recomended.

27. Likewise, consideration of trends over time, or increases over a threshold based on baseline data, is recommended when considering groundwater compliance thresholds. A compliance threshold set at the maximum acceptable value for drinking water allows no time for early warning of potential exceedances and may put drinking water users (and industrial users such as winemakers) at risk.

28. For mine closure, safeguards are required to ensure that there is the ability to maintain (through both capital expenditure, ongoing monitoring costs and potential re-consenting costs) the treatment and associated discharges from active and passive water treatment, including to meet more stringent future standards, if these arise.

29. Further information is required as to what the likely compliance standard will be for discharges from the water treatment plant during closure, both during active treatment and to guide when passive treatment becomes acceptable. In addition, a robust monitoring program to ensure compliance is met is required.

30. Contingency procedures are not provided should there be an exceedance of a water quality parameter, i.e. requirements for investigation, re-testing, reporting and review of management protocols. This also applies to procedures to be carried out in the event of an unexpected discharge to a surface water feature or groundwater during active mining and closure.

8 April 2026
Lauren Windross

WILLIAMSON
WATER & LAND ADVISORY

Proposed Bendigo-Ophir Mine

Environmental Effects Review: Arsenic

CENTRAL OTAGO WINEGROWERS ASSOCIATION

WWLA1710 | Rev. 1

8 April 2026

Environmental Effects Review: Arsenic

Project no:	WWLA1710
Revision:	1
Date:	8 April 2026
Client name:	Central Otago Winegrowers Association
Project manager:	Lauren Windross
Author(s):	Lauren Windross
File name:	G:\Shared drives\Projects\Central Otago Wingrowers Association\WWLA1710_Bendigo Dust Assessment\Deliverables\WWLA1710_Rpt_Bendigo arsenic assessment_Rev 1_080425.docx

Williamson Water & Land Advisory

Auckland | Whangārei | Tauranga
New Zealand
www.wwla.kiwi

Document history and status

Rev	Date	Description	By	Review	Approved
1	8 April 2026	Environmental Effects Assessment: Arsenic	Lauren Windross	Wendi Williamson Chris Simpson	Wendi Williamson

Distribution of copies

Rev	Date issued	Issued to	Comments
1	8 April 2026	Central Otago Winegrowers Association	For submission to FTA

Executive Summary

Williamson Water & Land Advisory (WWLA) was commissioned by Central Otago Winegrowers Association (COWA) to undertake an assessment of potential effects of arsenic discharges on vineyards in the Bendigo area arising from gold mining operations proposed in the Bendigo-Ophir region by Matakanui Gold Limited (Matakanui). Consent for the proposed mine is being sought under the Fast Track Approvals Act 2024 (FTA Act). Arsenic discharging via dust, groundwater and surface water from the proposed mining operations has been considered.

Key findings of our assessment are as follows:

Matakanui Submission Review [Section 3]	***In summary, there is significant potential for impacts of arsenic discharges (dust and water) arising from mining operations if appropriate management and monitoring is not in place for the duration of mining and through the extended closure period.*** Documents reviewed include those related to soil contamination and soil management, air quality and management, groundwater and surface water assessments, and the associated water management plan. Overall, a high level of rigour has been applied to the technical assessments. The management plans have some significant areas where improvements can be made, including providing better clarity regarding monitoring requirements and contingency procedures, and refinement of trigger levels/ compliance levels for groundwater and surface water, to better reflect the connection between these two water resources and the existing baseline conditions.
Baseline Data [Section 4]	***Baseline monitoring has shown that arsenic concentrations in the Bendigo area environment are currently at very low concentrations. Risk of arsenic contamination via dust is low.*** • Insufficient dust was able to be collected so an arsenic baseline for dust has not been obtained. • Arsenic concentrations in soil within the Bendigo vineyards is within anticipated background ranges. • No arsenic was detected in groundwater or surface water sources.
Recommendations [Section 5]	***Recommendations for the Fast Track Panel consideration presented in Section 5 are repeated below:*** 1. Provision of monitoring data to stakeholders from all monitoring types/ rounds is requested to provide transparency and confidence in process. 2. All monitoring and management plans would benefit from a monitoring checklist to aid compliance and consistency. Requirement for an overall Environmental Management and Monitoring Plan should be conditioned. 3. Development of ecological threshold guidelines/ standards to inform arsenic-contaminated topsoil reuse and remediation. This should be used in conjunction with existing human health standards. 4. Consideration is required as to how arsenic-contaminated waste rock will be managed during active mining. While topsoil is to be stockpiled and managed separately, it is not clear if there will be similar management protocols applied to waste rock and other soils with elevated arsenic, or if all waste rock/ stockpiled material will be treated as if it has elevated arsenic concentrations. 5. Further clarity is required regarding the duration of time arsenic-contaminated soils will be stockpiled and confirmation of the controls in place to prevent discharges to surface or groundwater or as dust. 6. The Soil Management Plan requires contingency procedures should there be an unexpected discharge of contaminants from the proposed mine. 7. The Soil Management Plan requires detailed information regarding ongoing monitoring requirements, such as whom by, the frequency, what the triggers for action are, and how these will be responded to. 8. Two daily monitoring events are recommended for visual dust monitoring, to account for variable wind conditions across a day. 9. Further clarity around the trigger levels and resulting actions to mitigate dust identified by visual means is recommended. 10. Real time dust monitoring closer to sensitive horticultural receptors is recommended. Lake Clearview (which was used for baseline data collection) is a suitable location for this purpose. We recommend that

	the Lake Clearview monitor is maintained, with additional monitoring near the administration buildings if desired by Matakanui. 11. Usability of the air quality plan would be aided by checklists/ guides to aid compliance and provide confidence to stakeholders as to the information being gathered at each monitoring event. 12. Clarity on use of pit water for dust suppression, and what the water quality standard would be to enable its use for this purpose, is required. 13. We recommend review of the surface water compliance limit for arsenic, as it does not reflect the connectivity between surface water features and the groundwater aquifer used for drinking water purposes, nor the existing (very low) concentrations of arsenic present in both resources. A lower target, consideration of upward trends to derive "trigger levels" or a two-step response procedure (review level and action level) to ensure early warning of contamination reaching the aquifer is recommended. 14. Likewise, consideration of trends over time, or increases over a threshold based on baseline data, is recommended when considering groundwater compliance thresholds. A compliance threshold set at the maximum acceptable value for drinking water allows no time for early warning of potential exceedances and may put drinking water users (and industrial users such as winemakers) at risk. 15. For mine closure, safeguards are required to ensure that there is the ability to maintain (through both capital expenditure, ongoing monitoring costs and potential re-consenting costs) the treatment and associated discharges from active and passive water treatment, including to meet more stringent future standards, if these arise. 16. Further information is required as to what the likely compliance standard will be for discharges from the water treatment plant during closure, both during active treatment and to guide when passive treatment becomes acceptable. In addition, a robust monitoring program to ensure compliance is met is required. 17. Contingency procedures are not provided should there be an exceedance of a water quality parameter, i.e. requirements for investigation, re-testing, reporting and review of management protocols. This also applies to procedures to be carried out in the event of an unexpected discharge to a surface water feature or groundwater during active mining and closure.

Contents

Appendices

1. Introduction

Williamson Water & Land Advisory (WWLA) was commissioned by Central Otago Winegrowers Association (COWA) to undertake an assessment of potential effects of arsenic discharges on vineyards in the Bendigo area arising from gold mining operations proposed in the Bendigo-Ophir region by Matakanui Gold Limited (Matakanui). Consent for the proposed mine is being sought under the Fast Track Approvals Act 2024 (FTA Act). Arsenic discharging via dust, groundwater and surface water from the proposed mining operations has been considered.

1.1 Background

The proposed Bendigo-Ophir Mine will comprise both open pit and eventual underground mining, with associated processing plant, waste rock stacks (WRSs), tailings storage facilities (TSFs), access roads, workshops and supporting infrastructure. The location of the proposed mine is largely within the Bendigo and Ardgour Stations, approximately 2-3 km east of vineyards in the Bendigo area (**Figure 1**).

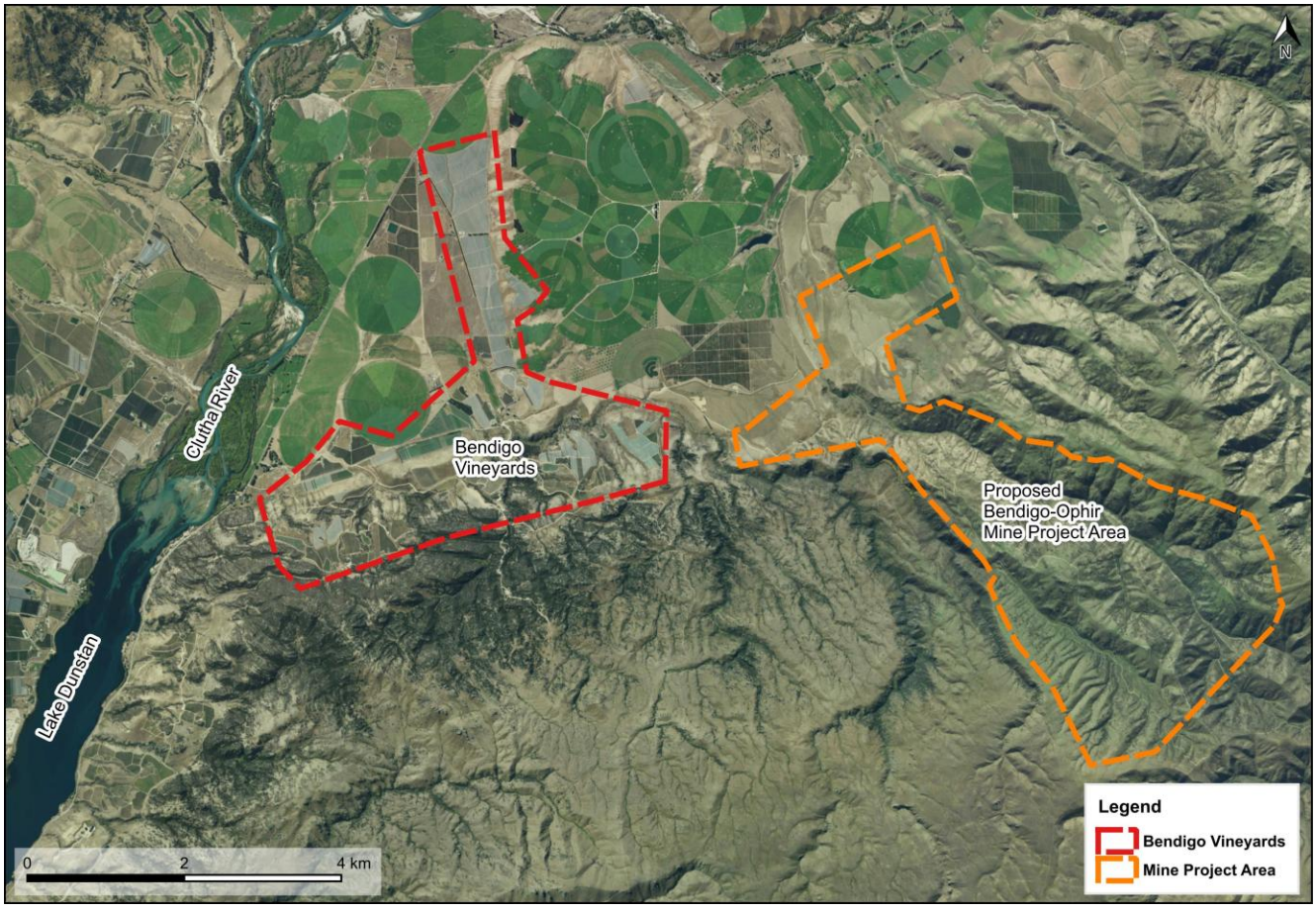


Figure 1. Site location, including approximate proposed mine location (image source: LINZ)

Mineralisation that leads to mineable gold also results in arsenic and several other metals being elevated in the waste rock. There is particular concern that elevated arsenic may occur in any dust discharging from the mine, and the effect of migration of this dust to the Bendigo vineyards. Arsenic can pose environmental and human health risks depending on its concentration and form. There are restrictions on the concentration of arsenic permitted in wine (potential effects on this are addressed under separate cover). Groundwater and surface water is used for both vineyard irrigation and winemaking in the Bendigo area, so potential impacts on surface water quality and groundwater resources also need to be understood.

COWA wish to understand the:

- Potential for arsenic discharges to migrate to their stakeholder's vineyards, and how this risk can be mitigated through Matakanui's dust and water management procedures within the mine; and
- Appropriateness of the ongoing monitoring they are proposing.

Throughout this report "the mine project" or "the mine project area" refers to the proposed gold mine. "The Bendigo area" refers to the area in which the "Bendigo vineyards" are located.

1.2 Objective and scope of work

The objectives of this assessment were to:

- Understand the proposed dust, surface water and groundwater contamination mitigation and monitoring proposed by Matakanui.
- Establish baseline (pre-mining) arsenic concentrations in the environment (dust, soil, surface and groundwater) for the Bendigo vineyard area.
- Provide recommendations for mitigation to reduce potential effects of arsenic discharges on the vineyards, based on sensitivities identified by the baseline assessment and assess the applicability of proposed monitoring on the Bendigo vineyard area.

The scope of works commissioned to achieve these objectives comprised:

- Review of Matakanui FTA Act application documents related to ground contamination, dust, surface water and groundwater assessments and management/ monitoring programs proposed.
- To understand the current levels of arsenic in the environment in the Bendigo vineyards, and thus determine the sensitivity of the area to potential additions of arsenic from mining operations, we undertook:
  - Soil sampling in Bendigo vineyards to understand current (baseline) arsenic in soil concentrations.
  - Groundwater and surface water sampling from irrigation sources at the Bendigo vineyards to understand current arsenic concentrations in these water sources.
  - Dust monitoring for a one-month period in Bendigo vineyards to establish pre-mine arsenic concentrations in dust.
- Preparation of this report summarising our findings and recommendations to mitigate risks potential arsenic inputs from mining operations pose of the Bendigo vineyards.

This report has been prepared, reviewed and certified by suitably qualified and experienced environmental practitioners (SQEPs). CVs are available on request.

2. Site Setting

The following summarises key features of the site's environmental setting. The site's environmental setting establishes the key features of the site's situation that indicate how dust or other discharges of arsenic may reach the Bendigo vineyards.

Table 1. Environmental setting and land use

Land use	The dominant land use in the Bendigo area is agriculture and horticulture, comprising irrigated pasture and feed crops along with stone fruit (mostly cherries) and vineyards. Outside of cultivated areas, the landscape is predominantly tussock hill-country, both farmed and conservation land. Isolated dwellings, packhouses and wineries are present and the town of Cromwell is approximately 20 km to the southwest.
Topography and drainage	The vineyards within the Bendigo area sit largely on a north-facing hillside at approximately 300-400 m RL, as well as within alluvial river valleys at a lower elevation of around 260 mRL. Drainage across the Bendigo area is via surface water discharges to streams and rivers, eventually flowing to the Clutha River on the northwest extent of the area, which in turn flows into Lake Dunstan (artifically formed for hydropower generation). There are very few areas of free-standing or ponded water away from the river/ lake beds.
Geology	Published geological maps (accessed via GNS Webmap[1]) show the Bendigo area to be underlain by a combination of Rakaia Terrain Schist (on the hills/ elevated areas) and alluvial deposits comprising glacial till (Lowburn Formation and Lindis Formation) on the flatter areas. Several fault lines are mapped within the schist immediately southeast of the vineyards.
Hydrogeology	Groundwater is abstracted from the Bendigo Aquifer within the river flats. The Bendigo Aquifer is a shallow unconfined aquifer with several abstraction groundwater bores present, largely with intake screens from approximately 9.5 m below ground level (bgl) (as sourced from NZ Geotechnical Database[2]). Recharge and discharge from the Bendigo Aquifer is largely controlled by river flows. Underlying schist has low permeability, with groundwater flow largely controlled by fractures/ faults.
Typical meteorological conditions	Bendigo has a semi-continental climate with very hot and dry summers and very cold winters, often with snow. Wind is predominantly from the northwest and strongest over spring to summer. Rainfall is relatively low, with annual accumulations typically less than 500 mm[3].
Sensitive receptors	Vineyards and orchards are considered sensitive receptors due to the requirements for their produce to meet contamination standards for export. The staff working within the facilities are unlikely to be sensitive receptors due to the relatively short durations spent working, and protective equipment worn. There are limited residences within the area, but residents of these may be considered sensitive receptors. Public conservation land is present around and within the Bendigo area, some of which is designated for its ecological values. These areas would be considered sensitive receptors. Lake Dunstan, the Clutha River and any tributaries are also considered sensitive receptors.

[1] https://data.gns.cri.nz/geology/
[2] https://nzgd.org.nz/tenant/295/hierarchy/3563/level/1823/tag/Map
[3] https://webstatic.niwa.co.nz/library/NIWAsts67.pdf

3. Matakanui Submission Document Review

Technical assessments and draft management plans by Matakanui and their consultants relevant to ground contamination, dust and groundwater contamination have been sourced from the FTA Act website[4] and reviewed. The documents that have been reviewed are:

1. Matakanui Gold Ltd. *Maps of arsenic distribution in the Bendigo area*, application document C17 and additional maps provided directly to community liaison group.
2. Geocontam Risk Management, 5 August 2025. *Preliminary Site Investigation, Bendigo-Ophir Gold Project*. Ref J-G-NZ0005-001-R-Rev3. Prepared for Matakanui Gold Limited. Application document B.32
3. Matakanui Gold Ltd. 3 June 2025. *Soil Management Plan*. (approved by Geocontam Risk Management Ltd). Application document G.20
4. PDP, October 2025. Bendigo-Ophir Gold Project: Assessment of Environmental Effects from the Discharge of Contaminants into Air. Prepared for Matakanui Gold Ltd. Ref C051440001. Application document B.33
5. Matakanui Gold Ltd. October 2025. *Air Quality Management Plan: Bendigo Ophir Gold Project*. Application document G.23
6. Kōmanawa Solutions Ltd, 30 Aril 2025. Bendigo-Ophir Gold Mine Project – Bendigo Groundwater Bore Take Effects Assessment. Application document B.02
7. Kōmanawa Solutions Ltd, 1 September 2025. Bendigo-Ophir Gold Mine Project – Groundwater Existing Environment & Effects Assessment. Application document B.03
8. Kōmanawa Solutions Ltd, 9 April 2025. Groundwater Modelling Analysis for Mining Bendigo Ophir Gold Deposit. Application document B.05
9. Kōmanawa Solutions Ltd, 19 August 2025. Bendigo – Ophir Gold Mine Project – Surface Water & Catchment Existing Environment & Effects Assessment. Application document B.04
10. Mine Waste Management, 4 August 2025. *Baseline Water Quality Report, Bendigo-Ophir Gold Project. Prepared for Matakanui Gold Ltd*. Application document reference Attachment D, updated 19 March 2026
11. Greg Ryder Consulting, 30 July 2025. Bendigo-Ophir Gold Project, Recommended water quality compliance limits for the Bendigo-Ophir Gold Project. Application document B.07
12. Matakanui Gold Ltd. 23 October 2025. *Water Management Plan*. Application document G.01

This section summarises WWLA's key findings from each of these documents. The full reviews are provided in **Appendix A**.

In summary, there is significant potential for impacts of arsenic discharges (dust and water) arising from mining operations if appropriate management and monitoring is not in place for the duration of mining and through the extended closure period.

Arsenic data (Document 1)	Arsenic data for soils within the proposed mining area is typical of what would be expected in a mineralised area, with concentrations being significantly elevated above "typical" background concentrations for non-mineralised zones. While the depth of samples is not provided (this is unusual), we note from our experience on similar sites that the type of screening referred to in the documentation is typically done within the upper 100 mm of the soil profile and is intended to indicate potential gold resources. Some of the observed localised exceedances may be associated with alternative anthropogenic sources (such as old sheep dips or mine workings) and there is likely to have been some natural migration of arsenic along surface water features. The data presented also indicates the vineyards themselves are likely to have relatively low arsenic concentrations as they are not in a mineralised zone.
Preliminary Site	The report contains extensive information regarding naturally occurring arsenic resulting from mineralisation processes, and discussion regarding potential generation of acid mine drainage (AMD) from mining activities. The conceptual site model is largely focussed on contaminants that are yet to be introduced (nitrates, petroleum hydrocarbons) rather than the relatively low-levels of contamination that may have arisen from historic mining

[4] https://www.fasttrack.govt.nz/projects/bendigoophir-gold-project/substantive-application

Investigation (Document 2)	processes. However, we acknowledge that current and historic contamination sources are unlikely to have a significant effect on the environment in the context of the proposed mine project. Leachability data indicated that there is potential for arsenic to migrate into surface water/ groundwater at concentrations exceeding the ANZG[5] 95% protection levels. The report recommends that a site-specific ecological threshold be developed with regard to arsenic to inform future remediation and rehabilitation requirements. We agree that a site-specific threshold is relevant given that contaminants are largely naturally occurring and therefore biota is likely to be adapted to the environmental conditions present. However, this doesn't account for potential human health risks, or migration of contamination to environments away from the source areas, and thus away from the adapted environment.
Soil Management Plan (Document 3)	While the SMP does set out many of the key aspects required for management of contaminated stockpiles and correctly relies on other documents where further detail is required (avoiding repetition), there are some specifics that are not included and would be required before an operational version is approved: • Detail on how As- and Cd- contaminated soil will be managed during active mining. Either dedicated waste rock stockpiles for impacted materials will be required, or it may be more practical to assume all waste rock is impacted to some degree and requires a conservative level of management. This is recommended as good earthworks/ dust management, and good erosion and sediment control, will be essential regardless of arsenic (and cadmium) concentrations. • With regard to minimising the time that material is stockpiled for, this should be defined to give more clarity. Further, the practicalities of directly transferring impacted soil to rehabilitation areas needs further discussion; this is not likely to be possible due to the very long duration of mining activities. • The PSI recommends that environmental protection thresholds for As and Cd are derived, but they are not included here. Derivation of environmental trigger levels is recommended so that contaminants can be considered in the context of both human health and environmental protection. • Surface water discharges from contaminated stockpiles do not appear to have been specifically considered. The plan does require that discharges from the As- and Cd- contaminated stockpile be captured by a dedicated sediment pond, but there is no description of specific treatment or additional controls required, or monitoring of the discharges from this pond. • Contingency procedures for discharges of contamination from site (dust, sediment, etc) are required. • More certainty on monitoring requirements is recommended, e.g. by whom, what frequency, what they will be monitoring, what the triggers for action are. A checklist appended to the SMP would assist.
Dust Assessment (Document 4)	Overall, the air discharge assessment provides a robust overview of potential dust sources and applies widely used modelling and assessment methodologies to document that dust is unlikely to present a significant risk to sensitive horticultural (i.e. vineyard) receptors. Mitigation measures and consent conditions are proposed to ensure the low potential risk is realised during operations. WWLA accepts the general findings and agrees that a robust air quality monitoring program, and consent conditions that ensure long-term compliance, are imposed. The high-arsenic stockpile is likely to be at significant distance from the vineyards and meteorological conditions mean that dust from that source is unlikely to impact the vineyards. However, we recommend that monitoring data and reporting is shared with stakeholders such as COWA on an ongoing basis. Monitoring should include chemical analysis of contaminants in dust to act as an "early warning" of any potential effects. Contingency procedures need to be robust and Matakanui will need to ensure there is sufficient water supply to mitigate dust throughout the proposed mine operations.
Air Quality Management Plan (Document 5)	Overall, the air quality monitoring plan sets out dust management/ controls and monitoring procedures that are likely to be effective for minimising dust generated at the proposed mine. However, the monitoring procedures have some limitations that can be addressed through a more robust program or consent conditions: • Visual monitoring relies on good staff training and staff who are active in observing and reporting exceedances. The Site Manager or delegate is only required to undertake a visual inspection once per day. While it is acknowledged that this is mid afternoon when wind speeds are likely to be highest, changes in meteorological conditions can be significant across a day, and two monitoring events would be a more robust approach. A second round in the morning is recommended. • Further clarity around the trigger levels and actions to mitigate dust for visual monitoring is recommended. This is described in the meteorological monitoring section but should be included in the visual monitoring triggers.

[5] Australian and New Zealand Guidelines for Fresh and Marine Water Quality

	• Real time monitoring closer to sensitive horticultural receptors is recommended. Lake Clearview is a suitable location for this purpose. We recommend that the Lake Clearview monitor is maintained, with additional monitoring near the administration buildings if desired by Matakanui. • Guidelines/ checklists to aid compliance would be beneficial and provide confidence to stakeholders regarding the nature of the information being collected and reported on.
Groundwater Assessments (Documents 6-8, Document 10)	WWLA has identified the following areas of concern that require further information or monitoring to understand: • Based on the above, the primary mechanisms for contamination of the Bendigo Aquifer are: - Surface water networks (creeks) becoming contaminated via mine operations or post-closure leaching, and discharging from the proposed mine project area, infiltrating the aquifer (either directly or via the Ardgour Alluvial Aquifer and Lindis River). - Use of dewatered mine water, with elevated contaminant arsenic and sulphide concentrations, being used in mine operations or to recharge surface water networks, thereby introducing contaminants that are not currently present. - Accidental discharge of contaminants from mining operations into the surface water networks, or directly to groundwater. • We note that Shepherd's Creek forms the primary discharge point for all water existing the proposed mine area. Therefore, management of water quality discharges in this creek are a primary focus. • Monitoring of groundwater quality in the borefield is essential. A groundwater monitoring well at the base of Shepherd's Creek, near where it enters the alluvial flats, would provide "early warning" of groundwater contamination. It could also potentially be used as a recovery well should contamination be identified and a source not confirmed (i.e. water could be pumped out of this well to remove contamination). We recommend water quality monitoring on a monthly basis for the duration of mining. • Monitoring data that was provided to the public/ stakeholders would build confidence and ensure transparency. • More clarity on the potential for long-term discharges is required. This includes treatment options should water with elevated contaminants be expected to discharge from site post-closure. • Further comment on monitoring and treatment of water is described in the Water Management Plan below.
Surface water Assessment (Documents 9-10)	No comments
Recommended water quality compliance limits (Document 11)	WWLA's comments with respect to the arsenic compliance limit for both groundwater and surface water are as below for the Water Management Plan. Further, the assessment considers only the arsenic concentrations in Rise and Shine Creek, and not that of Shepherd's Creek, which has significantly less arsenic already present.
Water Management Plan (Document 12)	WWLA comments are as follows: • There is conflict within the document as to whether pit water can be used for dust suppression; this requires clarification. Further, if it is able to be used for dust suppression, there is no specified water standard that must be met for arsenic in pit water to enable this use. Clarity on this in the water management plan is required. • Groundwater and surface water monitoring programs for the active mining phase are robust and sampling locations are well located to identify potential and actual impacts on the receiving environment. We recommend monitoring data is provided freely to stakeholders to support transparency and trust. • The proposed compliance limit for arsenic in the stream discharges is the 90% protection threshold under the ANZG. While this provides a high level of protection for environmental receptors, it does not consider the direct link between these surface water bodies and the Bendigo Aquifer, from which water is abstracted for drinking water purposes. This misalignment is somewhat mitigated by groundwater monitoring in appropriate locations and use of the New Zealand Drinking Water Standard (NZDWS) of 0.01 mg/l as a compliance target. However, a lower target (95% would be more in line with national use of these protection levels), or a two-step contingency procedure to ensure early warning of contamination reaching the aquifer is recommended (e.g. between 0.01 and 0.042 mg/l there is a review of discharge sources, with more definitive action if an exceedance of 0.042 mg/l is recorded, or consideration given to observation of an increasing trend).

	• Further, a result of 0.042 mg/L would represent a 1-2 order of magnitude increase relative to the baseline water quality data for the Shepherds Creek catchment, with average values ranging from 0.0008 mg/l to 0.0024 mg/l. • Groundwater compliance thresholds are appropriate but given that current groundwater arsenic concentrations are very low (less than the laboratory reporting level), observation of trends over time should also be considered, with associated contingency procedures should an increasing trend in arsenic be observed. • The length of time that water treatment is required, via both active and passive means, is significantly longer than a typical discharge consent duration of 30-35 years (an anticipated 50 years plus "several decades" is noted in the WMP). While this is not necessarily a barrier to granting a consent, the scale of potential treatment required is also likely to be significant (in capital expenditure and ongoing operational costs). Safeguards are required to ensure that should a consent lapse while treatment is ongoing, there is ability to re-consent the treatment and associated discharges, including for enabling potential upgrades to the water treatment plant or passive treatment systems to meet more stringent standards, if these arise. The alternative – a system that is operating without consent and therefore without regulatory control, or a system that is not able to meet the standards of the day – is likely to be intolerable to users of the groundwater and surface water resources that will be impacted by the discharges. • Contingency procedures are not provided should there be an exceedance of a water quality parameter, i.e. requirements for investigation, re-testing, reporting and review of management protocols. This also applies to procedures to be carried out in the event of an unexpected discharge to a surface water feature or groundwater during active mining and closure. • The risk assessment has not reviewed in detail, but we note that the causes, consequences, mitigation and residual risk appear to be addressed.

4. Baseline Data

Baseline data has been collected for dust, soil, groundwater and surface water within the Bendigo vineyard area. All laboratory transcripts are attached in **Appendix B.**

4.1 Dust monitoring

4.1.1 Rationale and objectives

One of the primary mechanisms identified for migration of arsenic from the proposed mine project to surrounding receptors is via dust. Dust from mineralised parts of the proposed mine project area, and some of the stockpiled overburden soil, will have naturally elevated arsenic concentrations as a result of mineralisation. This is confirmed in Documents 1 and 2 (**Section 3**). If dust reaches the vineyards in significant volumes, this may increase the concentration of arsenic in soil which will potentially have adverse effects on the soil biota. Further, dust accumulation on grapes may impact the arsenic level in the final wine product (this is addressed under separate cover).

Matakanui's submission documents indicate that dust is unlikely to reach the vineyard receptors due to their distance from the proposed mine project area and the influence of local topography on wind directions. However, regardless of the assumptions made, baseline dust monitoring was undertaken in five (5) locations throughout the Bendigo vineyards to provide pre-mining data. Locations are shown on **Figure 2.**

Figure 2. Dust deposition monitor locations (image source: LINZ)

4.1.2 Methodology

Dust deposition monitoring was undertaken from 16 January to 13 February 2026 in general accordance with Standard *AS/NZS 3580.10.1: Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric method* (2003) and MfE's *Good Practice Guide for Assessing and Managing Dust (2016)*. This involved:

- Fixed dust deposition monitors constructed using a 100 mm diameter glass funnel and laboratory-supplied sampling bottle, positioned at between 1.1 and 1.9 m above ground level[6].
- Locations were chosen such that they had good air flow around them (not near buildings or structures) and provided broad coverage of the vineyard area.
- Dust deposition gauges were on site for 29 days (the standard recommends 28-32 days).
- Following 30 days of monitoring they were collected and inspected to see if visible dust was present. Bottles were capped and sent to an IANZ accredited laboratory with chain of custody documentation.

Monitoring locations are set out in **Table 2** below.

Table 2. Dust deposition monitoring, gauge locations

Location	Description	Coordinates (NZTM)	Height (top of funnel)
DM01	Gibston Valley Schoolhouse Vineyard, eastern boundary.	5018507 N 1312600 E	1.9 m
DM02	Trig Hill Vineyard, southeastern boundary	5018369 N 1313507 E	1.1 m (only accessible fence, ground drops down steeply to the east)
DM03	Trig Hill Vineyard, centre (high point)	5018653 N 1313205 E	1.9 m
DM04	Trig Hill Vineyard, northeastern boundary	5018729 N 1313472 E	1.9 m
DM05	Mondillo Vineyard, adjacent to Thompsons Gorge Road. Northern-most location.	5018974 N 1311977 E	1.33 m (only accessible fence, ground drops down to Thompsons Gorge Rd to east).

4.1.3 Meteorological observations

COWA[7] has access to Matakanui's weather station data for the Lake Clearview monitoring location (**Figure 3**). This data was used to understand meteorological conditions for the wider monitored sites during the monitoring period.

[6] The recommended height is between 1.8 and 2.2 m above ground level. In two locations there were no available structures to fix to at the appropriate height, and establishment of additional structures was not possible due to vineyard operations. Locations were chosen so that there was a drop away to the east, ensuring good airflow in that direction (the direction of the proposed mine).

[7] https://live.harvest.com/?cmd=gph&sid=11138&tab=0&loc=1-1-24-3528&startdate=20260115230000&graph_id=275983&enddate=20260212230000

Figure 3. Extract of monitoring data for Lake Clearview for the monitoring period (Source: Matakanui)

During the monitoring period:

- 33.8 mm of rain was received. This includes 3.8 mm on the day of deployment, and a peak of 19 mm on the 23 January 2026. Six (6) other days recorded <5 mm of rainfall. The volume of rainfall received is approximately double what would typically be expected in February, but we note that January rainfall averages around 45 mm[8]. The longest period without rainfall was seven (7) days between 26 January and 2 February, following five (5) days of moderate to heavy rainfall.
- The wind direction varied significantly throughout the period, with the 'average' wind direction from the north. We note that Matakanui's weather stations within the proposed mine project area varied from this due to local topography (as is expected based on the assessment in **Section A.3**).

[8] PDP Air Discharge Assessment (2025).

- Average wind speed was 12.4 km/h (3.4 m/s).

4.1.4 Results and discussion

On collection of the dust deposition monitors, all five (5) were observed to contain a small volume of water and no visible dust. It was decided based on these observations not to proceed with laboratory testing for arsenic, as there would be insufficient dust present to produce a meaningful and reproducible result.

The wetter-than-usual meteorological conditions experienced during the monitoring period is expected to be the reason for the lack of dust in the monitors. While there were several dry days, the longest stretch of dry weather was preceded by five days of consistent rainfall, meaning that ground conditions likely stayed damp and unlikely to produce dust for an extended period. Throughout the final week of monitoring rainfall occurred every second or third day.

While no dust was able to be obtained for testing, this monitoring has confirmed that dust deposition rates are likely to be low within the Bendigo vineyards.

4.2 Soil characterisation

4.2.1 Rationale and objectives

Baseline soil sampling was undertaken to determine current arsenic concentrations in soil within the Bendigo vineyards. Samples were collected at four (4) of the five (5) dust monitoring locations as shown on **Figure 4**). All samples were collected from surface to 50 mm bgl.

Figure 4. Soil sampling locations (image source: LINZ)

As well as total arsenic, all samples were also tested for synthetic precipitation leaching procedure (SPLP) testing to determine the potential leachability of arsenic present in soils under standard climatic conditions. SS1 was also subject to arsenic speciation testing, to understand the current proportions of the AsIII and AsV oxidation states (AsIII is more toxic than AsV). An understanding of the baseline toxicity and leachability is relevant to contextualise any increases in arsenic concentration in future monitoring.

4.2.2 Methodology

Soil sampling was in general accordance with MfE's CLMG 5[9]. This involved:

- Collection of samples from a trowel wearing disposable nitrile gloves, with samples placed directly into laboratory-prepared glass jars.
- Decontaminating the trowel between samples using phosphate free detergent and fresh water rinses.
- Changing gloves between samples.
- Couriering samples to the laboratories, chilled, under chain of custody documentation, the same day they were collected. Samples were sent to IANZ-accredited Hill Laboratories for testing.

4.2.3 Site observations

In all sample locations soil was observed to comprise a grey-brown silt with minor gravels. The surface 10 mm was observed to be wet due to light rainfall at the time of sample collection, with underlying soils being dry. Minor rootlets were observed in all locations.

There was no olfactory or visual evidence of contamination in any of the sample locations.

4.2.4 Results and discussion

Results have been compared to "background" values as per Maanaki Whenua Landcare Research's Predicted Background Concentrations, using "till" as the representative geology and the 95% upper confidence limit. These correspond well to Matakanui's own arsenic data for Bendigo area (Document 1). Results are set out in **Table 3** below and show:

- Arsenic concentrations range between 3.93 and 9.03 mg/kg. This is within the expected background range.
- SPLP testing resulted in <0.005 g/ m^3 (the laboratory limit of reporting or LoR) of arsenic being measured in the leachate generated.
- Speciation testing showed that the dominant form of arsenic present is AsV, with AsIII and methylated species not present above the LoR.

The results show that arsenic within the vineyards is currently within expected background ranges and is not in a form that is easily leachable under standard climatic conditions. Arsenic is in the oxidated AsV state, as would typically be expected under these conditions.

Table 3. Soil baseline data

Sample	Background	SS1	SS2	SS4	SS5
Total arsenic (mg/kg)	20	9.03	3.93	5.94	5.45
SPLP (g/m^3)	-	<0.005	<0.005	<0.005	<0.005
AsIII	-	<0.01	-	-	-
AsIV	-	<0.02	-	-	-

[9] Ministry for the Environment; Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (Revised 2021) (CLMG No. 5)

4.3 Groundwater

4.3.1 Rationale and objectives

Groundwater sampling and testing for arsenic was undertaken to understand current (baseline) groundwater conditions, so that future potential impacts from mining can be measured. Groundwater is used for irrigation, frost protection and within the winemaking process throughout the Bendigo area. Should contamination of groundwater occur, there are potential pathways by which contaminated groundwater could impact the vineyards and wine products produced.

Groundwater samples were collected from five (5) selected water supply bores throughout the Bendigo vineyards as described in **Table 4** below and shown on **Figure 5**.

Table 4. Groundwater borehole locations

Location	Description	Coordinates (NZTM)	Depth of bore
MD	Mondillo Vineyard	1311041E, 5019383N	48.40 m
FH	Folding Hill Vineyard	1311116E, 5019721N	49.05 m
QR	Quartz Reef Vineyard	1310133E, 5018673N	38.44 m
SH	School House Vineyard Irrigation Scheme Bore	1310511E, 5019005N	46.15 m
CT	China Terrace Irrigation Scheme Bore	1308523E, 5018251N	22.96 m

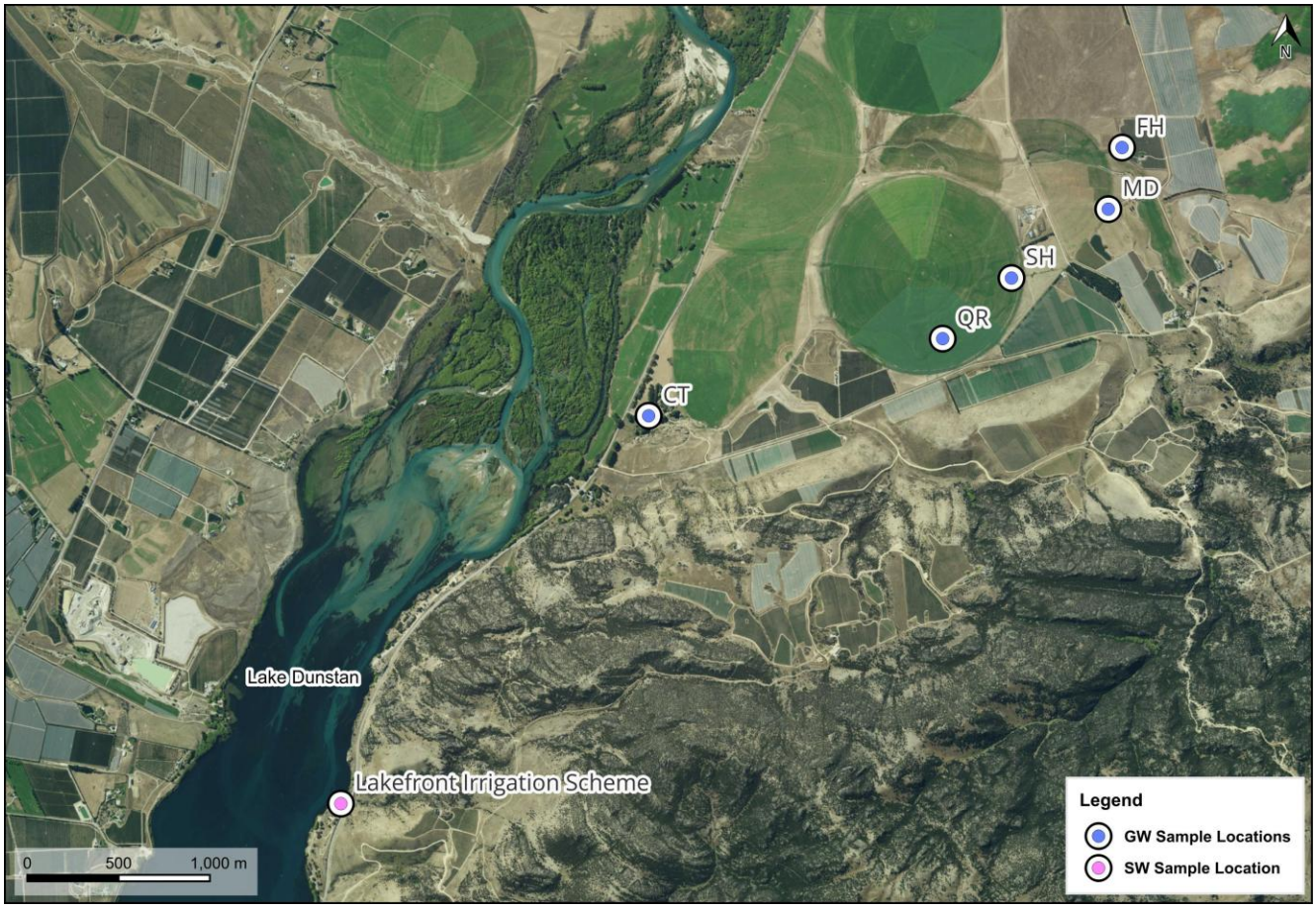


Figure 5. Groundwater and surface water collection points (image source: LINZ)

4.3.2 Methodology

Samples were collected from six (6) bore taps by a COWA representative under instruction from WWLA. The procedure was as follows:

- Each bore tap was run for 3-5 minutes to clear any stagnant water.
- The flow rate was then turned down to low and a laboratory-supplied sample bottle was filled. Care was taken not to create excess aeration and not to overflow bottles.
- Sample bottles were labelled and sent to IANZ-accredited Hill Laboratories in chilled conditions and with chain-of-custody documentation. Arsenic testing at trace levels was requested.

4.3.3 Site observations

All water was observed to be clear and free of excess sediment. No odour was reported.

4.3.4 Results and discussion

Arsenic concentrations are below the LoR (0.0011 g/m^3) in all five (5) bores tested, confirming no measurable arsenic exists currently within the groundwater aquifer from which the vineyards are drawing water for irrigation, frost protection and winemaking.

A duplicate sample was also collected. The duplicate result was identical to the primary result.

4.4 Surface water

4.4.1 Rationale and objectives

Surface water from Lake Dunstan is used for irrigation and frost protection throughout the Bendigo area. As the Lake is a potential receiving environment for dust, surface water discharges and groundwater discharges, a sample of irrigation water was also selected to establish an arsenic baseline.

4.4.2 Methodology

A surface water sample was collected from the irrigation scheme take point (**Figure 5**) by a COWA representative under instruction from WWLA (sample ID: LD SW). The procedure was as follows:

- A collection jug was washed with fresh water and phosphate-free detergent and rinsed clean prior to sampling.
- A sample was collected into the collection jug from mid water column at the location shown on **Figure 5**.
- The sample was decanted into a laboratory-supplied sample container, being careful to avoid overtopping and excess aeration.
- Sample bottles were labelled and sent to IANZ-accredited Hill Laboratories in chilled conditions and with chain-of-custody documentation. Arsenic testing at trace levels was requested.

4.4.3 Site observations

Water was observed to be clear with minimal sedimentation. No odours or discolouration were reported.

4.4.4 Results and discussion

Arsenic in the Lake Dunstan sample is below the laboratory level of reporting (0.0011 g/m^3). As with groundwater, this confirms no measurable arsenic exists within Lake Dunstan.

5. Recommendations

WWLA's recommendations are summarised below and are set out as recommendations for consideration by the Fast Track Panel, and for COWA to consider for future interactions with Matakanui.

5.1 Recommendations for Fast Track Panel consideration

WWLA's recommendations based on our data review summarised in **Section 3**, considered in the context of the baseline data presented in **Section 4**, are as follows:

General

1. Provision of monitoring data to stakeholders from all monitoring types/ rounds is requested to provide transparency and confidence in process.
2. All monitoring and management plans would benefit from a monitoring checklist to aid compliance and consistency. Requirement for an overall Environmental Management and Monitoring Plan should be conditioned.

Soil Management

3. Development of ecological threshold guidelines/ standards to inform arsenic-contaminated topsoil reuse and remediation. This should be used in conjunction with existing human health standards.
4. Consideration is required as to how arsenic-contaminated waste rock will be managed during active mining. While topsoil is to be stockpiled and managed separately, it is not clear if there will be similar management protocols applied to waste rock and other soils with elevated arsenic, or if all waste rock/ stockpiled material will be treated as if it has elevated arsenic concentrations.
5. Further clarity is required regarding the duration of time arsenic-contaminated soils will be stockpiled and confirmation of the controls in place to prevent discharges to surface or groundwater or as dust.
6. The Soil Management Plan requires contingency procedures should there be an unexpected discharge of contaminants from the proposed mine.
7. The Soil Management Plan requires detailed information regarding ongoing monitoring requirements, such as whom by, the frequency, what the triggers for action are, and how these will be responded to.

Dust Monitoring

8. Two daily monitoring events are recommended for visual dust monitoring, to account for variable wind conditions across a day.
9. Further clarity around the trigger levels and resulting actions to mitigate dust identified by visual means is recommended.
10. Real time monitoring closer to sensitive horticultural receptors is recommended. Lake Clearview (which was used for baseline data collection) is a suitable location for this purpose. We recommend that the Lake Clearview monitor is maintained, with additional monitoring near the administration buildings if desired by Matakanui.
11. Usability of the plan would be aided by checklists/ guides to aid compliance and provide confidence to stakeholders as to the information being gathered at each monitoring event.

Water Management

12. Clarity on use of pit water for dust suppression, and what the water quality standard would be to enable its use for this purpose, is required.
13. We recommend review of the surface water compliance limit for arsenic, as it does not reflect the connectivity between surface water features and the groundwater aquifer used for drinking water purposes, nor the existing (very low) concentrations of arsenic present in both resources. A lower target, consideration

of upward trends to derive “trigger levels” or a two-step response procedure (review level and action level) to ensure early warning of contamination reaching the aquifer is recommended.

14. Likewise, consideration of trends over time, or increases over a threshold based on baseline data, is recommended when considering groundwater compliance thresholds. A compliance threshold set at the maximum acceptable value for drinking water allows no time for early warning of potential exceedances and may put drinking water users (and industrial users such as winemakers) at risk.
15. For mine closure, safeguards are required to ensure that there is the ability to maintain (through both capital expenditure, ongoing monitoring costs and potential re-consenting costs) the treatment and associated discharges from active and passive water treatment, including to meet more stringent future standards, if these arise.
16. Further information is required as to what the likely compliance standard will be for discharges from the water treatment plant during closure, both during active treatment and to guide when passive treatment becomes acceptable. In addition, a robust monitoring program to ensure compliance is met is required.
17. Contingency procedures are not provided should there be an exceedance of a water quality parameter, i.e. requirements for investigation, re-testing, reporting and review of management protocols. This also applies to procedures to be carried out in the event of an unexpected discharge to a surface water feature or groundwater during active mining and closure.

5.2 Recommendations for COWA

We recommend COWA consider the following ongoing monitoring within the Bendigo vineyard area:

- A follow up groundwater monitoring round is recommended prior to implementation of an ongoing monitoring programme to confirm the baseline data. An ongoing programme involving annual monitoring of selected water supply bore, during the summer months when contaminant concentrations are likely to be highest (i.e. less diluted), is recommended.
- A second surface water (Lake Dunstan Irrigation Scheme) is recommended during the winter months, prior to mining commencement to enable assessment of any seasonal effects on arsenic concentrations. Again, annual monitoring is recommended on an ongoing basis, during summer months.
- Annual soil sampling for total arsenic is recommended following commencement of mining operations. This will determine if there has been an increase in arsenic over time.
- Dust monitoring should also be considered on an annual basis. The locations used for the assessment undertaken for this report have been maintained for future use.

6. Conclusion

WWLA has prepared this assessment of potential effects of arsenic discharges on vineyards in the Bendigo area arising from gold mining operations proposed by Matakanui, including obtaining and evaluating current baseline conditions. In summary:

- Baseline data collection has shown that arsenic concentrations are currently very low within the Bendigo Area environment, including in soils within vineyards and in groundwater and surface water used for vineyard irrigation, winemaking and frost protection.
- There is potential for significant impacts on wine making from proposed mining operations if discharges from the mine, as dust and water/ sediment, are not appropriately managed both during active mining and closure, because the environment is sensitive (very low levels currently present) and arsenic levels permitted in wine is low.
- Soil, dust and water management plans prepared by others to support the FTA Act consenting process, generally convey a high level of confidence in management of these potential risks, there are some notable data gaps and aspects where management can be improved. This includes with more clarity on monitoring requirements and provision of contingency procedures in the event of uncontrolled discharges.
- Compliance levels for arsenic in groundwater and surface water should be reviewed to better reflect the current environmental (baseline) and the connectivity between the surface water features and groundwater aquifer.
- It is recommended that COWA implements an ongoing monitoring programme if mining commences.
- For all monitoring programs, open sharing of data and actions undertaken in response to exceedances is recommended for transparency and the confidence of stakeholders such as COWA.

Appendix A. Matakanui Documentation Review (Technical Reports)

A.1 Arsenic data

Matakanui has provided a map of Arsenic Rich Areas (document C.17; **Figure 6** and also included in full size below) which documents areas where arsenic has been recorded at >70 ppm. The methodology for this assessment is not provided but based on the Preliminary Site Investigation (**Section A.2**), this was determined via field X-Ray Fluorescence (XRF) screening with supporting laboratory analysis on a subset of samples. The depth of samples collected for analysis is not provided; *WWLA notes from our experience on similar sites that this screening is typically done within the upper 100 mm of the soil profile and is intended to indicate potential gold resources*.

The map is shown in **Figure 6** below and shows that arsenic concentrations are elevated above 70 ppm in the immediate vicinity of known ore bodies, with sporadic elevated readings elsewhere. There is a trend of elevated arsenic through the Bendigo Creek, indicated below, *potentially due to migration of arsenic-rich sediments from further up the catchment*.

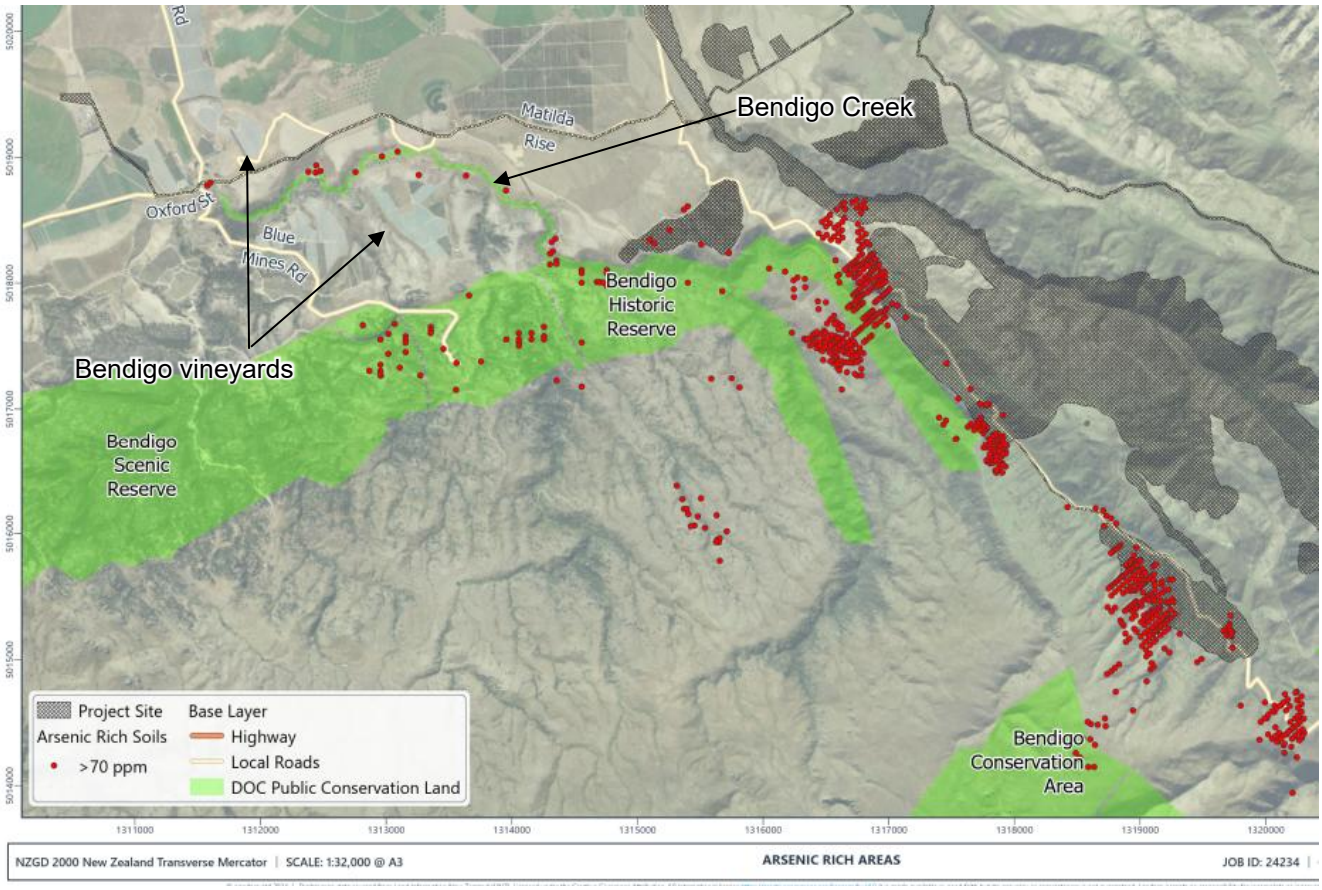


Figure 6. Arsenic values >70ppm (image source: Matakanui). Refer below for full size version. Annotations by WWLA

Matakanui has also provided COWA, through the community liaison group, a more detailed assessment of arsenic values in soil around the Bendigo vineyards. Again, depth and method are not provided so the same assumptions are made. Refer **Figure 7**.

The data shows that arsenic is typically in the 0-20 ppm range with isolated results in the 20 to 50 ppm range. *There are no apparent trends to this data.*

The arsenic data presented is typical of what would be expected in a mineralised area, with concentrations being significantly elevated above "typical" background concentrations in mineralised areas. Sporadic exceedances may be associated with alternative anthropogenic sources (such as old sheep dips or mine workings) and there is likely to have been some natural migration of arsenic along surface water features. The

*data also indicates that the vineyards themselves are likely to have relatively low arsenic concentrations; refer to **Section 4** for further information.*

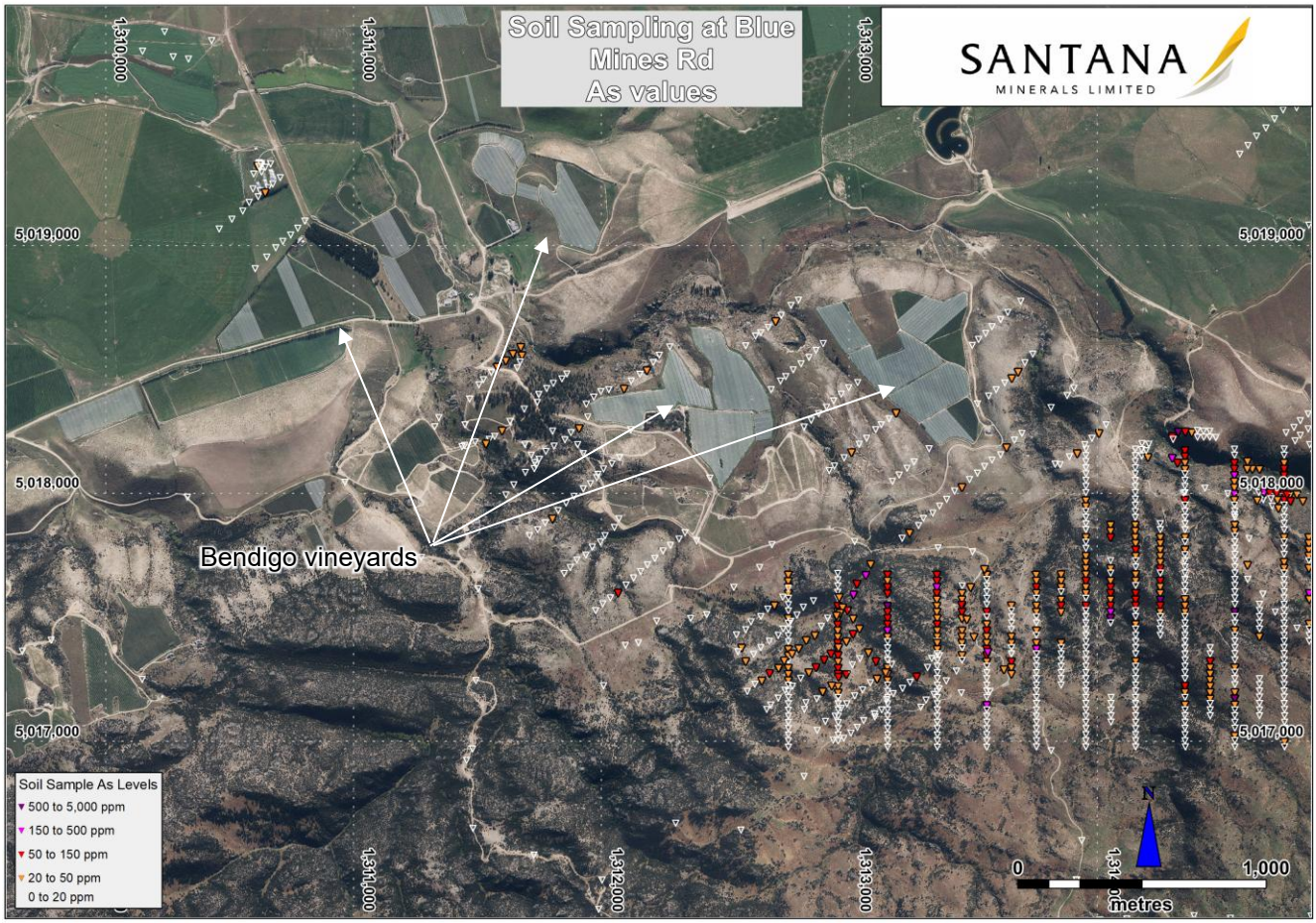
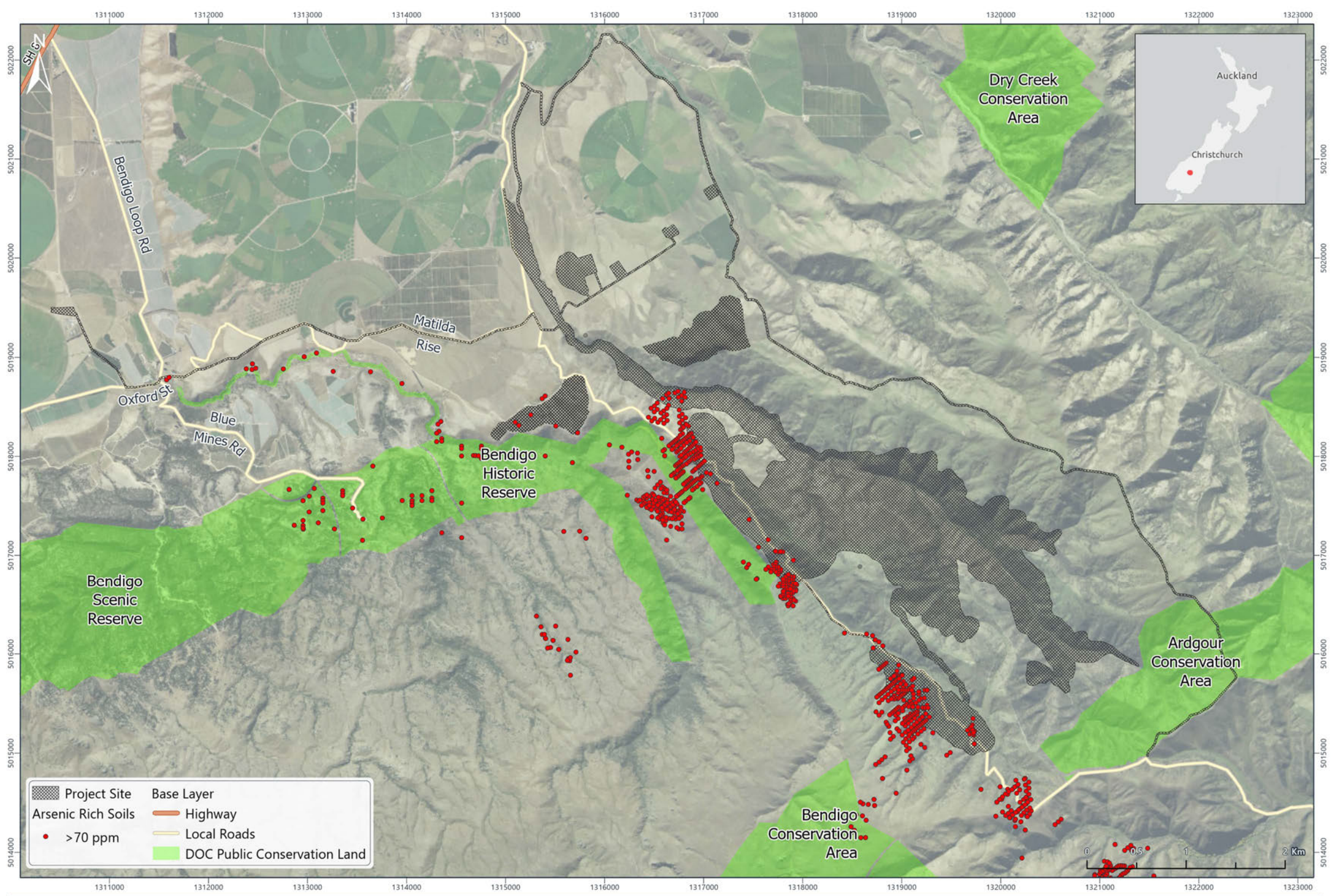


Figure 7. Arsenic concentrations in the vicinity of the Bendigo vineyards (image source: Matakanui/ Santana). Annotations by WWLA



NZGD 2000 New Zealand Transverse Mercator | SCALE: 1:32,000 @ A3

ARSENIC RICH AREAS

JOB ID: 24234 | CLIENT: Matakanui Gold Limited | 30/09/2025 | VERSION: 2

A.2 Preliminary Site Investigation[10]

The Preliminary Site Investigation (PSI) was undertaken to meet the requirements of the NESCS[11] which form the basis of human health-focussed contaminated land reporting and consenting in New Zealand. The scope of work included desktop review of the site history and environmental setting, a site inspection, development of a conceptual site model (CSM) and identification of data gaps. Key findings were:

- The project area is within Otago Schist with gold mineralisation widespread.
- Pastoral use has been occurring in the project area since the late-1850s along with historic gold mining operations. These comprised both alluvial sluicing and shallow mining of quartz reefs and occurred through to the 1940s. Heritage mapping conducted under separate cover and referenced in the PSI identified several historic mining features, with visible evidence of several of these remaining.
- The report notes that the site is not listed on Otago Regional Council's (ORC's) HAIL register[12] but that the above historic mining activities do comprise HAIL activities.
- Arsenic is present at concentrations above industrial land use human health criteria and a range of applicable environmental criteria (Eco-SGVs) in shallow soils, predominantly associated with historic mining areas. Elevated concentrations were also detected in groundwater. Several maps showing elevated arsenic concentrations were provided by Matakanui and are addressed above and included in **Appendix A**.
- The PSI concluded that if not appropriately managed, future mining activities have potential to release contaminants to the environment, potentially resulting in adverse impacts on ecosystems.
- Recommendations were to:
  - Undertake detailed evaluation of the already-extensive soil dataset to better inform a risk assessment of the disturbance of soils with elevated arsenic (and potentially cadmium). This dataset could be used to determine an appropriate ecological background threshold to support assessment of environmental effects, given that the arsenic is likely largely naturally occurring.
  - A Site Management Plan (SMP) should be prepared to define the risks, control strategies and management responsibilities associated with management of arsenic-impacted soils.
  - Management plans and conditions of consent should also address mining-related risks.

The report contains extensive information regarding naturally occurring arsenic resulting from mineralisation processes, and discussion regarding potential generation of acid mine drainage (AMD) from mining activities. The conceptual site model is largely focussed on contaminants that are yet to be introduced (nitrates, petroleum hydrocarbons) rather than the relatively low-levels of contamination that may have arisen from historic mining processes. However, we acknowledge that current and historic contamination sources are unlikely to have a significant effect on the environment in the context of the proposed mine project. Leachability data indicated that there is potential for arsenic to migrate into surface water/ groundwater at concentrations exceeding the ANZG 95% protection levels.

The report recommends that a site-specific ecological threshold be developed with regard to arsenic to inform future remediation and rehabilitation requirements. We agree that a site-specific threshold is relevant given that contaminants are largely naturally occurring and therefore biota is likely to be adapted to the environmental conditions present. However, this doesn't account for potential human health risks, or migration of contamination to environments away from the source areas, and thus away from the adapted environment.

[10] Geocontam Risk Management, 5 August 2025. Preliminary Site Investigation, Bendigo-Ophir Gold Project. Ref J-G-NZ0005-001-R-Rev3. Prepared for Matakanui Gold Limited. Application document B.32
[11] National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations
[12] MfE's Hazardous Activities and Industries List (HAIL). This is a register of known contaminated or potentially contaminated sites maintained by ORC. Inclusion on the list does not mean that contamination is confirmed, and not all potentially contaminated sites are listed.

A.3 Soil Management Plan[13]

The Soil Management Plan (SMP) refers to the above PSI as the basis/ rationale for controls and highlights arsenic as being a key driver for the controls proposed, as it is the only metal expected to exceed the applicable human health and environment standards in a consistent manner. Arsenic concentrations exceeding 70 ppm have been selected for specific management, as these exceed the applicable human health standard. Cadmium was also highlighted as an element for which management should be considered, noting that it is generally co-located with arsenic-bearing soils which some exceptions. Key aspects of the SMP are set out below.

Mechanisms for mobilisation	Mechanisms for arsenic and cadmium mobilisation considered include disturbance/ removal of topsoil, dust generation from haul roads, excavation and general earthworks, surface water runoff and stockpiling (dust generation).
Management methods and mitigation; rational/ overarching principles	Management methods are set out for each area of the mine where these soils may be interacted with (including the mine pits, engineered landforms and processing plant which generally included segregation/ isolation of impacted soils, with relocation either to the As- and Cd- bearing topsoil stockpile, or another location within the pit the material is sourced from. A process for mitigation is set out, with delineation using XRF screening (40 m grid; with a finer resolution at the edge of known impacted zones), segregation (topsoil stockpiles), validation (to be undertaken following removal of the stockpile), rehabilitation (use of impacted soils in areas where there are naturally existing exceedances), recordkeeping (of stockpile volume and location), vegetive cover on stockpiles to prevent erosion, dust suppression, erosion and sediment controls including dedicated sediment ponds, and minimising the time of stockpiling. There is an indication that where practical, direct transfer of impacted soils to rehabilitation areas should be undertaken to reduce the risk of contamination through temporary stockpiling.
Performance criteria/ trigger levels	The SMP uses the human health standards (70 ppm for arsenic and 1,300 ppm for cadmium) as the trigger level to determine the extent of delineation required, with all soils with concentrations exceeding these criteria to be segregated. Validation must be undertaken to confirm that remaining soils have concentrations less than these criteria. No consideration to environmental standard is provided (*noting that the PSI recommends that they are derived*).
Topsoil stockpile management	General guidelines are set out for how to manage topsoil stockpiles, including limiting heights to <30 m, segregation of As- and Cd- contaminated soils, weekly inspections for signs of erosion, and use of vegetation cover where practical. Chemical dust suppressants such as polymers are also provided as an option. Validation of the As- and Cd- contaminated stockpile footprint on a 1/50 m^2 grid (minimum 5 samples) is required on removal of the stockpile at rehabilitation stage.
Dust management – topsoil	Dust management includes following the Air Quality Monitoring Plan (**Section A.5**), locating stockpiles away from receptors, provision of water for sprinklers/ water carts, use of vegetation and training of staff to react in case of failure of dust mitigation. Appropriate monitoring is stated but the frequency of monitoring or types of checks are not provided. Further, works that can generate dust are limited when wind speeds exceed 7.5 m/s.
Erosion and sediment controls	This section refers to standard controls that would be expected in any earthworks site, including site-specific erosion and sediment control plans (ESCP).
Monitoring and adaptive management	Routine site inspections to check management measures are described, but not the frequency of them. Dust monitoring is also described in the context of the Air Quality Management Plan (**Section A.5**). This section also briefly describes record keeping, incident investigation and future updates to the SMP to reflect site conditions.
WWLA comments	*While the SMP does set out many of the key aspects required for management of contaminated stockpiles and correctly relies on other documents where further detail is required (avoiding repetition), there are some specifics that are not included and would be required before an operational version is approved:* • *Detail on how As- and Cd- contaminated soil will be managed during active mining. Either dedicated waste rock stockpiles for impacted materials will be required, or it may be more practical to assume all waste rock is impacted to some degree and requires a conservative level of management. This is recommended as good earthworks/ dust management, and good erosion and sediment control, will be essential regardless of arsenic (and cadmium) concentrations.*

[13] Matakanui Gold Ltd. 3 June 2025. Soil Management Plan. (approved by Geocontam Risk Management Ltd). Application document G.20

	• *With regard to minimising the time that material is stockpiled for, this should be defined to give more clarity. Further, the practicalities of directly transferring impacted soil to rehabilitation areas needs further discussion; this is not likely to be possible due to the very long duration of mining activities.* • *The PSI recommends that environmental protection thresholds for As and Cd are derived, but they are not included here. Derivation of environmental trigger levels is recommended so that contaminants can be considered in the context of both human health and environmental protection.* • *Surface water discharges from contaminated stockpiles do not appear to have been specifically considered. The plan does require that discharges from the As- and Cd- contaminated stockpile be captured by a dedicated sediment pond, but there is no description of specific treatment or additional controls required, or monitoring of the discharges from this pond.* • *Contingency procedures for discharges of contamination from site (dust, sediment, etc) are required.* • *More certainty on monitoring requirements is recommended, e.g. by whom, what frequency, what they will be monitoring, what the triggers for action are. A checklist appended to the SMP would assist.*

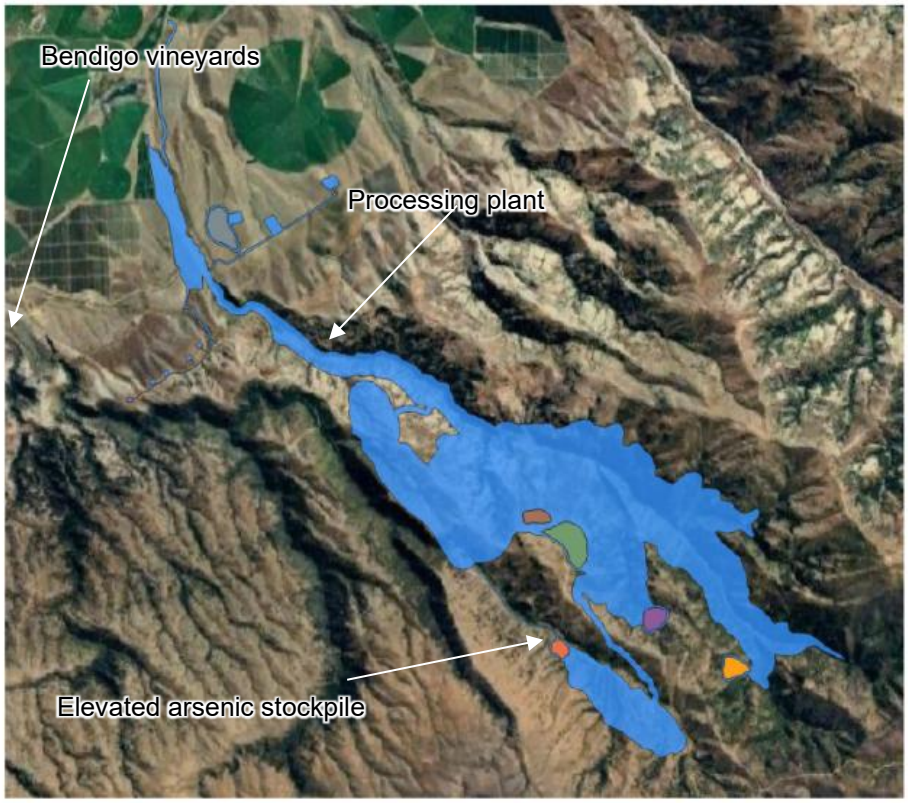
A.4 Air Discharge Assessment[14]

The Air Discharge Assessment addressed the potential for particulate matter and gaseous air contaminants to have amenity, ecological and health effects on receiving environments. The assessment accommodated the two distinct meteorological zones and receiving environments present as a result of the size of the project. It addressed typical mine activities such as establishment of engineered landforms and use of the processing plant, as well as potential dust emissions from topsoil stockpiles. Arsenic was identified as a key potential chemical contaminant within dust and is acknowledged to be naturally elevated in both Otago Schist and mineralised areas.

This report sets out the rationale for the controls related to arsenic dust mitigation so has been reviewed in more detail than other reports summarised in this section.

Dust sources and controls	The sources of dust identified at the proposed mine project include the open pits, soil stockpiles, haul roads, engineered landforms, ore crushing and tailings storage. Of these, the largest sources were considered to be soil overburden removal, haul roads. Stockpiled soil was considered to be a medium sized source, along with other similar activities such as the crushed ore stockpile, vehicle movements on access roads and eventual TSF remediation. We have focussed our assessment on stockpiled soil, as this includes soil with known elevated arsenic concentrations. Soil is to be stockpiled in six (6) locations in the south of the project area, as shown in the PDP Figure 7 below (blue is project area, other coloured polygons are soil stockpiles; *annotation by WWLA*). Only the pink-orange location in the southwest is marked as having elevated arsenic concentrations and is estimated to be 1.9 ha in size (expected arsenic concentration of 150-500 mg/kg; *this is assumed to be remediated topsoil as described in the PSI*). Controls proposed for the arsenic stockpile include dampening the surface in response to visible dust, minimising the time it is stockpiled (i.e. relocate to rehabilitation areas as soon as possible) and establishment of vegetative cover. Traffic on haul roads will potentially generate large volumes of total suspended particulate matter (TSP), with up to 420 vehicle movements per day. *While there are amenity/ nuisance issues associated with this source, arsenic concentrations are not likely to be notably elevated.* Controls proposed to minimise dust include use of engineered surfaces with minimised free fine material, maintenance to reduce potholes and excess fines, reduction of the speed limit to 20 km/hr when visible dust is present over the site boundary, and dampening the surface of haul roads. The processing plant is not considered a particularly large potential source of dust, but it has been specifically reviewed by WWLA due to its proximity to the Bendigo vineyards and potential to include elevated arsenic. PDP identified that dust could be generated from unsealed access roads, lime silo, a covered crushed ore stockpile and the “Run of Mine” (ROM) pad and bin. These are relatively small potential sources, and proposed controls include maintaining adequate buffer distances to sensitive receptors (>500 m), use of water sprayers/ misters to suppress dust, dust collection systems on silos and minimising drop heights.

[14] PDP, October 2025. Bendigo-Ophir Gold Project: Assessment of Environmental Effects from the Discharge of Contaminants into Air. Prepared for Matakanui Gold Ltd. Ref C051440001. Application document B.33

	 **Figure 7: Location and size of the soil stockpiles within the site boundary.**
Sensitive human and horticultural receptors	PDP identified horticultural receptors (yellow circle below) in close proximity to realigned roads and haul roads. Figure 32 below shows the proposed works, 250 m buffer and identified sensitive receptors. The vineyards outlined are at their closest point approximately 970 m east of the proposed mine project boundary.

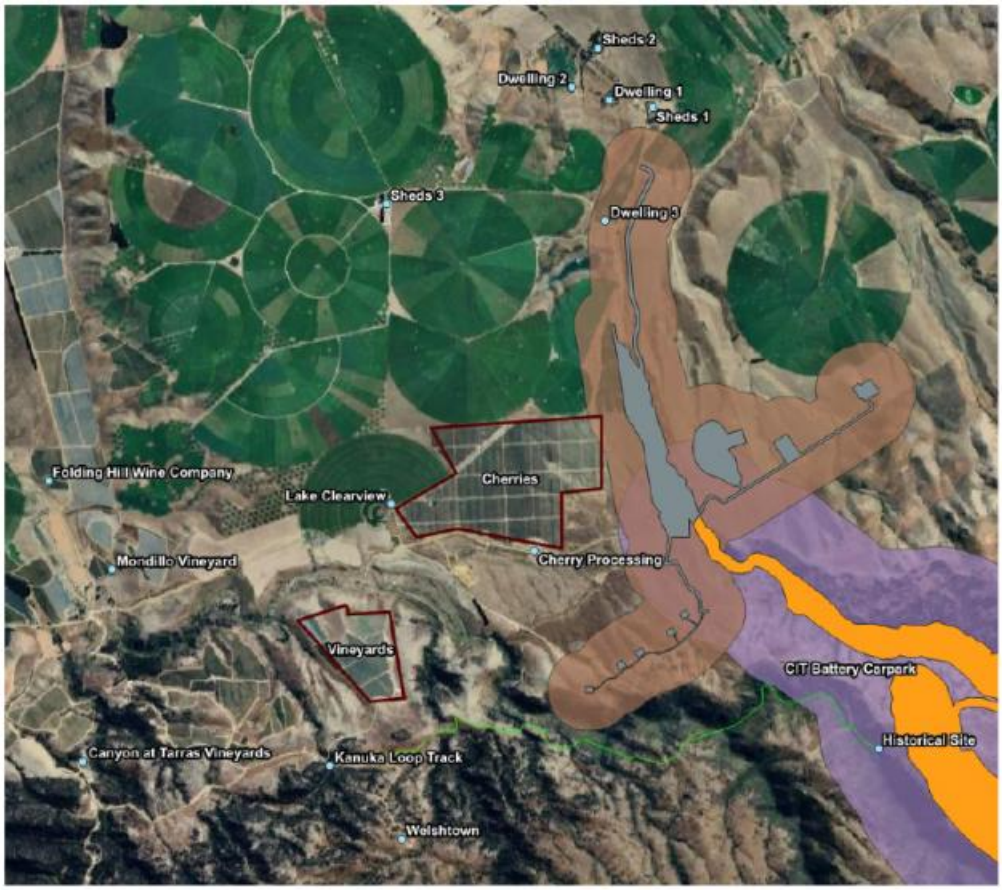


Figure 32: Bendigo-Ophir Gold Mine Existing Environment – north and western section footprint, 250 m buffer and potentially sensitive dust receptors

Dust mitigation water supply	PDP describe several standards for water application rates, concluding that a rate that achieves a 1mm differential between evapotranspiration and water application is considered best practice. Water requirements were calculated over three main stages of proposed mine development and sufficient supply is projected to be obtained from the proposed mine's water supply system. The sources of the mine water system water are not specified in the PDP report, but WWLA understands it is predominantly bore-supplied groundwater supplemented with dewatering from open pits.
Dispersion and travel distance of dust	Dust emissions from mines are predominantly fugitive in nature (i.e. area sourced rather than point sourced) and can be highly variable depending on the nature of the activity and the weather conditions. PDP used two sets of monitoring data (from other quarry/ mine sites) and a modelling exercise to document that PM_{10} and larger dust (that most likely to be generated at the proposed mine project) was unlikely to migrate further than 250-300 m downwind of the source. The exception was for the modelling which indicated potential migration of 600 m for PM_{30}, but this was considered to be conservative.
Site specific meteorological characterisation	PDP undertook site-specific meteorological monitoring. This showed that wind conditions within the Rise-and-Shine and Shepherds Creek valleys (within the proposed mine project area shaded orange below) are predominantly from the northwest and southeast, whereas at Lake Clearview (on the plains near the Bendigo Vineyards), the predominant wind directions are easterlies and northerlies. This data is overlain on Figure 34 from PDP's report below and demonstrates very localised meteorological conditions within the proposed mine project area, influenced by the topography present. Rainfall data was more consistent between the proposed mine project area and Lake Clearview. February was the driest month for both, with September being the wettest month. There were no other clear seasonal patterns.

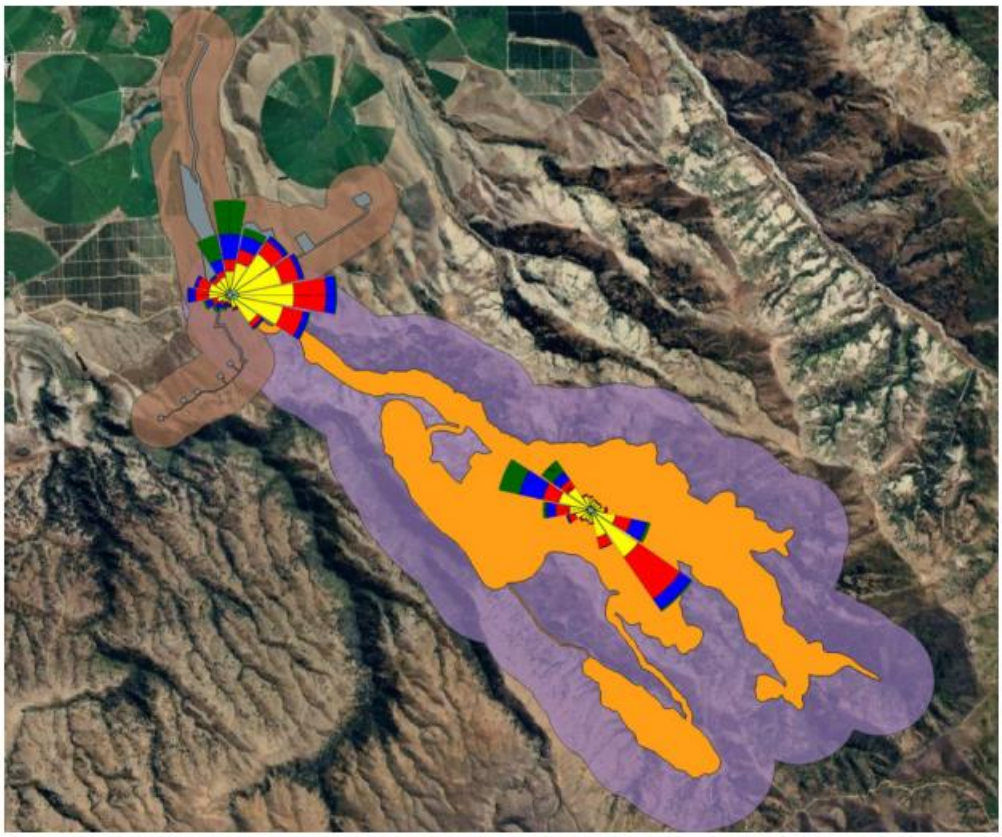


Figure 34. BOPG project footprint, 250 m and 500 m buffers and meteorological zones indicated by wind roses

Background dust and particulate monitoring	Five (5) dust deposition monitoring locations were established within the proposed mine project area as shown in PDP's Figure 26 below. The Ardgour Flats location was selected to provide background data and the CIT as the most visible site to the public. Other locations are proximate to identified major dust sources. Real time monitoring was also carried out at Lake Clearview, although it is noted that the monitor used does not comply with the NES-AQ[15], so data should be considered indicative rather than precise. The data showed: • Low levels of PM_{10} from April to September, similar to typical rural background sites. • Frequent and high PM_{10} events in November to April, indicating that it is naturally a relatively dusty area. • Dust deposition rates were in the range of 0.52 to 1.41 g/ m^2/ day. For context, the MfE recommended mitigation trigger value for dust deposition is 4 g/ m^2/ day.

[15] National Environmental Standard for Air Quality. A compliant device requires a mains power supply and air-conditioned environmental enclosure which was not practical for this study.

	 **Figure 26: Locations of dust deposition monitoring sites**
Qualitative dust assessment (amenity, ecology, health)	PDP undertook a FIDOL qualitative assessment which considers Frequency of exposure, Intensity (concentration), Duration, Offensiveness/ Character (type of dust) and Location, and integrated this with a Source-Pathway-Receptor Model. The assessment was considered in the context of the two meteorological zones as described above. In summary, for the Bendigo vineyards: • Frequency of time being downwind from a dust source was "infrequent" (21 hrs/ year with wind speeds >7.5 m/s). • Intensity was considered "distant" due to the distance being >750 m and dust being unlikely to migrate more than 200 m. • High-risk dust events are unlikely to last more than 2 hrs, but there can be infrequent high-risk conditions (lasting more than 4 hrs) in the spring months. • Offensiveness was considered "low to moderate" based on the size, composition and colour of the dust. • While horticultural use is considered "highly sensitive", the low potential frequency, intensity, duration and offensiveness, and distant location, means that overall a "negligible risk" was determined for dust impact risk at the Bendigo vineyards.
Air quality management plan and consent conditions	PDP recommended an Air Quality Management Plan be prepared that set out the standards to be achieved, monitoring proposed, mitigation methods, triggers for an air quality alert, contingency procedures and further. A draft plan was prepared by Matakanui and is summarised below. Further, PDP also recommended the scope of consent conditions to ensure that any actual adverse effects are no greater than the potential adverse effects assessed in their report. This includes listing activities which are permitted to discharge contaminants to air, environmental bottom lines and/or performance measures, mitigation measures, and environmental monitoring program, requirements to record and respond to complaints, and record keeping and reporting requirements.
WWLA comments	*Overall, the air discharge assessment provides a robust overview of potential dust sources and applies widely used modelling and assessment methodologies to document that dust is unlikely to present a significant risk to*

	sensitive horticultural (i.e. vineyard) receptors. Mitigation measures and consent conditions are proposed to ensure the low potential risk is realised during operations. *WWLA accepts the general findings and agrees that a robust air quality monitoring program, and consent conditions that ensure long-term compliance, are imposed. The high-arsenic stockpile is likely to be at significant distance from the vineyards and meteorological conditions mean that dust from that source is unlikely to impact the vineyards.* *However, we recommend that monitoring data and reporting is shared with stakeholders such as COWA on an ongoing basis. Monitoring should include chemical analysis of contaminants in dust to act as an "early warning" of any potential effects. Contingency procedures need to be robust and Matakanui will need to ensure there is sufficient water supply to mitigate dust throughout the proposed mine operations.*

A.5 Air quality management plan[16]

The air quality monitoring plan was prepared by PDP on behalf of Matakanui and is based on the assessment described in **Section A.3** above. The plan identifies three priorities for dust management:

18. Large scale constant dust sources such as haul and public roads.
19. Small scale constant dust sources like the processing plant and TSF.
20. Small scale intermittent dust sources such as soil overburden removal, drilling and blasting and stockpiling of overburden and ore. These sources will only be managed on an "as required" basis.

Controls proposed	• The overarching primary control is appropriate design, such as locating sources away from sensitive receptors, ensuring adequate water supply for mitigation, vegetation coverage being maintained/ established for stockpiling, and appropriate monitoring, training and equipment. • The controls proposed for haul road construction and use (Priority 1) include ensuring separation distances are maintained to sensitive receptors (>250 m), dampening of surfaces, minimising drop heights during construction, not undertaking construction when wind speeds are greater than 7.5 m/s toward sensitive receptors and when dust is visible over the site boundary, maintaining an engineered surface and reducing speeds when dust is visible. • Similar controls are proposed for the ore processing plant (Priority 2), with use of water sprays/ misters and good design principles. It is noted that at the TSF, the wet nature of the tailings means that dust generation is mitigated. Additional controls are proposed for eventual remediation/ closure. • For soil overburden removal (Priority 3), there will be restrictions on works when wind is >7.5 m/s and toward sensitive receptors and dust is visible beyond the site boundary. Drop heights will be minimised and surfaces kept damp. • Similar controls are proposed for stockpiles themselves, along with establishment of vegetative cover on the stockpile surface. Stockpiles will be built to a maximum height of 30 m. There is specific mention of the arsenic stockpile, including "Dampen surface elevated AS soil stockpiles in response to *any* soil dust witnessed" (*emphasis added by WWLA*), and to minimise time elevated AS soil is stockpiled. • Water is to be supplied via two dust suppression water carts with provision to add fixed sprinklers or a mobile sprinkler system if required. The plan states that based on the design of the proposed mine water system, there should be approximately 12 l/ s available for dust suppression above the primary needs identified above during the peak mining period. This will be used to suppress any additional visible dust not already accounted for.
Complaints	The management plan also sets out a complaints procedure. The investigation process includes visual inspection, initiation of remedial action which may include a stop work period, and response to the complainant to convey the investigation undertaken and remediation proposed.
Monitoring	• Dust monitoring is proposed via visual means. The management plan states "All staff are required to continuously monitor activities to identify dust events. The Site Manager or delegate undertakes site visual dust monitoring at least once per day, in the early afternoon…". There is no description of what constitutes a trigger for action from visual monitoring. • There will be further dust deposition monitoring in the same locations as was undertaken for the initial assessment described above. If dust deposition monitoring identifies an increase of more than 6 g/m3 over

[16] Matakanui Gold Ltd. October 2025. Air Quality Management Plan: Bendigo Ophir Gold Project. Application document G.23

	30 days at the impact sites relative to the background site (Ardgour Flat), this indicates that additional dust mitigation is required. This will trigger a review to identify the source(s) of dust and if needed, improve the dust mitigation measures being used. • Real time dust monitoring will take place, but the location will be moved from Lake Clearview (as per the original assessment) to be closer to the proposed mine's administration offices on Ardgour Terrace once they are established. Trigger levels are established for real time monitoring and require a review/ investigation at 150 µg/m^3 and halting dust generating activities at 300 µg/m^3. • Metereological monitoring will be undertaken so that site staff can be warned if wind speeds approach or exceed 7.5 m/s, as this is the speed at which dust discharges toward sensitive receptors must be visually monitored and managed if required. Works are to cease if dust is witnessed crossing the proposed mine project area boundary.
WWLA comments	*Overall, the air quality monitoring plan sets out dust management/ controls and monitoring procedures that are likely to be effective for minimising dust generated at the proposed mine. However, the monitoring procedures have some limitations that can be addressed through a more robust program or consent conditions:* • *Visual monitoring relies on good staff training and staff who are active in observing and reporting exceedances. The Site Manager or delegate is only required to undertake a visual inspection once per day. While it is acknowledged that this is mid afternoon when wind speeds are likely to be highest, changes in meteorological conditions can be significant across a day, and two monitoring events would be a more robust approach. A second round in the morning is recommended.* • *Further clarity around the trigger levels and actions to mitigate dust for visual monitoring is recommended. This is described in the meteorological monitoring section but should be included in the visual monitoring triggers.* • *Real time monitoring closer to sensitive horticultural receptors is recommended. Lake Clearview is a suitable location for this purpose. We recommend that the Lake Clearview monitor is maintained, with additional monitoring near the administration buildings if desired by Matakanui.* • *Guidelines/ checklists to aid compliance would be beneficial and provide confidence to stakeholders regarding the nature of the information being collected and reported on.*

A.6 Groundwater assessment reports

Three groundwater reports have been reviewed to gain an understanding of the hydrogeological model and potential for migration of contaminants (particularly arsenic) outside of the proposed mine project area. These are:

- Kōmanawa Solutions Ltd, 30 Aril 2025. Bendigo-Ophir Gold Mine Project – Bendigo Groundwater Bore Take Effects Assessment. Application document B.02
- Kōmanawa Solutions Ltd, 1 September 2025. Bendigo-Ophir Gold Mine Project – Groundwater Existing Environment & Effects Assessment. Application document B.03
- Kōmanawa Solutions Ltd, 9 April 2025. Groundwater Modelling Analysis for Mining Bendigo Ophir Gold Deposit. Application document B.05

Key findings that relate to potential migration of arsenic out of the proposed mine project area are set out below. Note, while the volume and proposed take are described, this review does not comprise a groundwater drawdown assessment or review of the potential impacts of the proposed take on availability of water for horticultural purposes.

- The basement geology is schist, which generally has low permeability with the main flows being via fractures. Overlying alluvium or outwash sediments (generally course sandy gravels) therefore provide the main aquifer unit. These are primarily located in the lower topography areas/ valleys.
- The Bendigo Aquifer is an unconfined aquifer located in valley floor outwash alluvium in the Bendigo area. The groundwater table sits at approximately 195-201 mRL, which means it is in the range of 0-10 m below ground level at the valley floor in the Bendigo area. It is the source of groundwater for irrigation and winemaking purposes in the Bendigo area and is also the preferred source of groundwater to support the

proposed mining operations, with consent for 110 l/s being sought from a borefield located in the valley floor (refer Figure 1 from document B.02 below).

- The Clutha River is the main source of replenishment for the Bendigo Aquifer. Water enters the Bendigo Aquifer from the northern (upstream) part of the Clutha River where it means the Lindis River and leaves the aquifer via the southern (downstream) part of the Clutha River/ wetlands or Lake Dunstan. Other rivers/ creeks also provide recharge points for the aquifer.
- The above indicates that the primary pathway by which groundwater would become contaminated is via infiltration of contaminated surface water. This may be via both rainfall mobilising contaminants direct to ground, or by surface water flows (streams) recharging the groundwater aquifer, particularly in low flow conditions (in high flow conditions the groundwater aquifer will be closer to saturation and more of the surface water will be retained as surface water flows).
- Mining activities will extend into the schist aquifer which is stratified and has variable degrees of saturation and hydraulic connection to the surface. While this aquifer generally has low permeability, dewatering of it will be required for some of the proposed mine open pits.
- Elevated arsenic and sulphate concentrations (including arsenic concentrations above the drinking water standard of 0.01 mg/l) have been noted within the schist aquifer and within adit water (inferred to be because of acid rock drainage occurring during the passage of groundwater into the adit).
- The dewatering required for these open pits will result in depressurisation of the groundwater aquifer, followed by depletion of hydrologically connected creeks. Drainage from engineered landforms (ELFs) and TSFs will be into the surface water (creek) network (including in closure/ post-closure scenarios), resulting in elevated contaminant loads, particularly in Shepherds Creek, which eventually flows into the Clutha River. Report B.03 also notes that the Ardgour Alluvial Aquifer would be affected by elevated contaminant concentrations during the later phases of the projects. The Ardgour Alluvial Aquifer is localised to the Ardgour valley/ Shepherds Creek catchment, but discharges into the Lindis River and therefore into the Bendigo Aquifer.
- Mining operations are intending to re-use “mine impacted water” through the processing plant, for dust suppression and other means. Water will be obtained from dewatering, with “clean water” from the proposed borefield augmenting the supply.
- Post-closure, there would be recharge of the surface water (creek) network by inflowing groundwater into mine workings, which as stated above, includes arsenic at concentrations that are elevated above the drinking water standard. Active and passive treatment is proposed to address this.

WWLA has identified the following areas of concern that require further information or monitoring to understand:

- *Based on the above, the primary mechanisms for contamination of the Bendigo Aquifer are:*
  - *Surface water networks (creeks) becoming contaminated via mine operations or post-closure leaching, and discharging from the proposed mine project area, infiltrating the aquifer (either directly or via the Ardgour Alluvial Aquifer and Lindis River).*
  - *Use of dewatered mine water, with elevated contaminant arsenic and sulphide concentrations, being used in mine operations or to recharge surface water networks, thereby introducing contaminants that are not currently present.*
  - *Accidental discharge of contaminants from mining operations into the surface water networks, or directly to groundwater.*
- *We note that Shepherd’s Creek forms the primary discharge point for all water existing the proposed mine area. Therefore, management of water quality discharges in this creek are a primary focus.*
- *Monitoring of groundwater quality in the borefield is essential. A groundwater monitoring well at the base of Shepherd’s Creek, near where it enters the alluvial flats, would provide “early warning” of groundwater contamination. It could also potentially be used as a recovery well should contamination be identified and a*

source not confirmed (i.e. water could be pumped out of this well to hydraulically contain a contaminant plume). We recommend water quality monitoring on a monthly basis for the duration of mining.

- *Monitoring data that was provided to the public/ stakeholders would build confidence and ensure transparency.*
- *More clarity on the potential for long-term discharges is required. This includes treatment options should water with elevated contaminants be expected to discharge from site post-closure.*
- *Further comment on monitoring and treatment of water is described in the Water Management Plan below.*

Proposed bore field location (source: Figure 1 of application document B.02).

A.7 Surface water assessment[17]

The surface water assessment provided the following information with relevance to potential arsenic migration:

- The surface water features around the proposed mining area are Shepherds Creek, Bendigo River and the Rise and Shine Creek.
  - Shepherds Creek is a low flow creek which loses its flow approximately 3km short of the Lindis river as the water soaks to land due to gravels. This water then replenishes the Ardgour Alluvial Aquifer and the Lindis Alluvial Ribbon Aquifer.
  - The Rise and Shine Creek is a tributary of the Bendigo Creek, which replenishes the Bendigo Aquifer.
- The proposed mine plans to reuse water sourced from within the proposed mine area (e.g. dewatering, reused for processing plant and dust suppression), and limit discharges to Shepherds Creek to being on an infrequent and short term basis.
- Instead, Shepherds Creek will be maintained via cleanwater diversion from within the catchment.

No comments from WWLA, water monitoring is considered separately.

[17] Kōmanawa Solutions Ltd, 19 August 2025. Bendigo – Ophir Gold Mine Project – Surface Water & Catchment Existing Environment & Effects Assessment. Application document B.04

A.8 Water quality compliance limits[18]

This document provides the technical basis for the water quality guidelines adopted in the water management plan. It considers the stream environments to be more than "slightly to moderately disturbed" and therefore adopts a 90% species protection threshold. Site-specific compliance limits have been developed for some contaminants which do not have an ANZG default guideline. For human and stock receptors, relevant guidelines for irrigation and drinking water have been reviewed.

Arsenic is considered in the context of the ANZG 90% protection levels, New Zealand Drinking Water Standards (2002), and the existing concentrations of arsenic present in the Rise and Shine Creek which are elevated relative to other creeks in the area due to historic mining activities.

*WWLA's comments with respect to the arsenic compliance limit for both groundwater and surface water are as above for the Water Management Plan. Further, the assessment considers only the arsenic concentrations in Rise and Shine Creek, and not that of Shepherd's Creek, which has significantly less arsenic already present (Document 10, **Section 3**).*

A.9 Water Management Plan[19]

The water management plan sets out the types of water expected to be present, proposed catchment and treatment, and includes post-closure treatment considerations.

Overview	The water management plan classifies five (5) main water types, each with different uses and treatment options. These are summarised below: • **Clean water:** Water that has not been in contact with mine circuit water and can be discharged to the environment, e.g. rainfall or runoff from non-active mine areas. Clean water will be diverted away from active mining areas to reduce potential contaminant migration. This includes stream diversions. Water that has been through active or passive treatment and is suitable for discharge to the environment will also be considered 'clean water'. • **Mine impacted water (MIW):** this has two sub-categories: - **Surficial MIW** – run-off from mining areas that may be high in sediment and slightly impacted by contaminants, but only requires settlement via silt ponds for treatment (to reduce sediment). The efficacy of this is proposed to be measured/ monitored to confirm compliance with water quality standards. - **Mine Circuit Water** – all water that has come in contact with the mining circuit or could be elevated in potential contaminants. Includes seepage from ELFs and TSFs, decant water, pit sumps, arsenic-rich topsoil runoff, processing plant water, etc. Treatment and management is discussed in more detail below. • **Aquifer water**: water from the Bendigo Aquifer, used for dust suppression, potable water supply and to top up water needs in the processing plant. Aquifer water will also be used to augment creek flows within Shepherds Creek and Rise and Shine Creek. This need is anticipated to increase over time. • **Treated water** (during closure only): active water treatment will be initially applied to all cumulated mine circuit water, with passive water treatment then occurring once potential contaminants have been reduced and water quality objectives have been met. Mine circuit water has the highest potential to impact the environment, so is proposed to be kept in a 'closed loop' system within the mine footprint. Key aspects of the capture and management of this water are: • The overarching management approach is to set closure goals (discussed below), predict potential risks, prevent risk, minimise risk, control and treat, and monitor performance. Control and treat will vary depending on the mine stage. • A series of collection sumps will be used to collect seepage at the ELFs and TSFs. TSFs also have a decant which holds water on top with sufficient freeboard to prevent overtopping. • Pit water will be captured by within sumps in each pit. The plan states both that this will not be used for dust suppression due to the potential high contaminant loads present, and also that during the operational phase, management processes will be developed to enable use of pit sump water for dust suppression under defined

[18] Greg Ryder Consulting, 30 July 2025. Bendigo-Ophir Gold Project, Recommended water quality compliance limits for the Bendigo-Ophir Gold Project. Application document B.07.
[19] Matakanui Gold Ltd. 23 October 2025. Water Management Plan. Application document G.01.

water quality standards. Otherwise, this water will be directed to the TSFs and mine circuit water system. This is not reflected in the diagram presented in **Figure 8** below.

- The arsenic-rich topsoil stockpile will also have a seepage collection sump for seepage and runoff, which will be directed to mine circuit water.

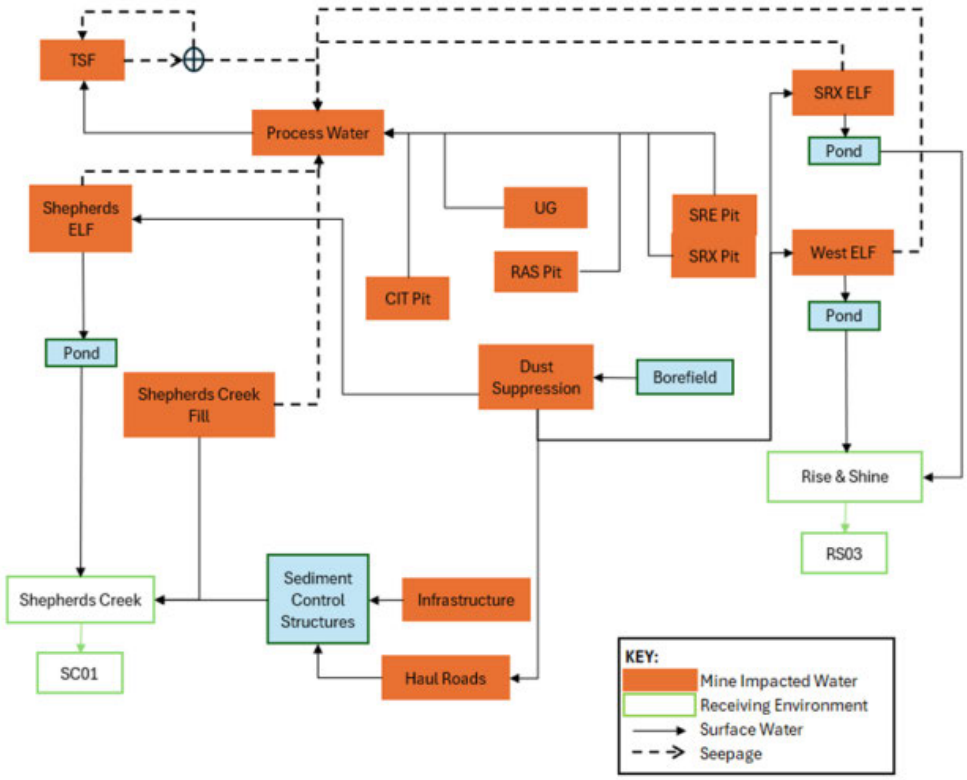


Figure 7: Operational Phase water management. Separation of MIW (red-infilled) and clean water (green outlined).

Figure 8. Operational phase mine circuit water system. Extracted from application document G.01

Monitoring during active mining

Monitoring is proposed as follows during the active phases of the proposed mine:

In the Shepherds Creek and Rise and Shine Creeks, at their outflow from the proposed mine project area, along with a control site at Clearwater Creek. Refer Figure 13 from document G.01 below.

- Monthly quality monitoring including a range of standard water quality parameters. Arsenic and other metals are not specifically listed in the water quality parameters, but a recommended compliance limit for arsenic of ≤0.045 mg/L (dissolved) is provided. This is the 90% protection threshold under the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG).
- Continuous monitoring for water level/ using a flow meter. Conductivity will also be continuously monitored.
- Groundwater monitoring from a borehole at the base of Shepherds Creek and at the abstraction bore in the borefield. Monthly quality monitoring and groundwater level monitoring are proposed. An arsenic compliance limit of 0.01 mg/L is proposed (maximum acceptable value).
- Additional groundwater and surface water performance monitoring is proposed throughout the proposed mine project area to identify any bypass of seepage collection systems, assess groundwater level changes and identify potential migration of contaminants from upgradient mine domains. This includes surface water monitoring after heavy rain events.
- A quality assurance process is also provided for both surface water and groundwater monitoring.

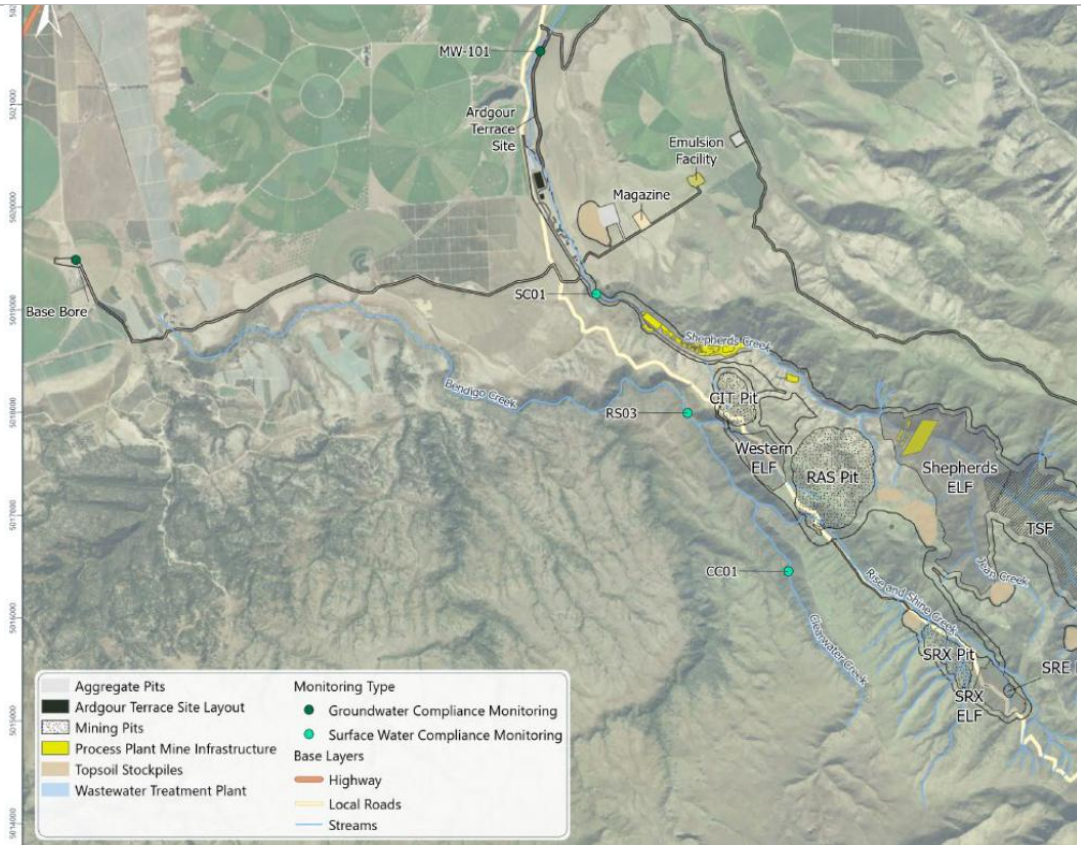


Figure 9. Surface water and groundwater compliance monitoring sites. Extracted from Figure 13 of application document G.01.

Mine closure treatment

Treatment of mine circuit water is only proposed during the closure phase and is projected to be required for approximately 50 years until such a time when contaminant loads have reduced sufficiently to enable only passive treatment (e.g. silt ponds as described above). The water treatment plan (WTP) will be located in the processing plant footprint and use a combination of physical and chemical treatment mechanisms. The design will be completed in the early stages of mine operation.

Passive treatment is anticipated to be required for several decades following active treatment cessation. One of the two proposed passive treatment sites is in Shepherds Creek, with the second located to treat pit water and ELF seepage. Passive treatment will include sediment settlement, oxidation, anaerobic treatment and a polishing pond.

There are no current proposed solutions for sludge disposal from active and passive treatment, except that it should be “offsite at a suitable facility or studies should be undertaken to confirm suitable onsite management options”.

Closure monitoring requirements are not set out in detail, rather they are to be determined during the operational phase. Key aspects that are being considered include:

- Some level of compliance monitoring on a reduced frequency relative to the operational phase, using a risk-based approach.
- Water quality sampling in remaining pit lakes, sampling of any spills or discharges, and groundwater monitoring (level and quality) in nearby bores.
- Water quality monitoring is also proposed for the effluent water quality (and influent to assess treatment efficiencies). A surge pond is to be located at the WTP to enable water capture and recirculation in the case of out-of-sec treated water, ideally informed by an arsenic: electrical conductivity relationship, if one can be established, as this will provide instantaneous responses to out-of-spec water quality.

Treatment of mine circuit water is only proposed during the closure phase and is projected to be required for approximately 50 years until such a time when contaminant loads have reduced sufficiently to enable only passive treatment (e.g. silt ponds as described above). The water treatment plan (WTP) will be located in the processing plant footprint and use a combination of physical and chemical treatment mechanisms. The design will be completed in the early stages of mine operation.

	Passive treatment is anticipated to be required for several decades following active treatment cessation. One of the two proposed passive treatment sites is in Shepherds Creek, with the second located to treat pit water and ELF seepage. Passive treatment will include sediment settlement, oxidation, anaerobic treatment and a polishing pond. There are no current proposed solutions for sludge disposal from active and passive treatment, except that it should be "offsite at a suitable facility or studies should be undertaken to confirm suitable onsite management options". Closure monitoring requirements are not set out in detail, rather they are to be determined during the operational phase. Key aspects that are being considered include: • Some level of compliance monitoring on a reduced frequency relative to the operational phase, using a risk-based approach. • Water quality sampling in remaining pit lakes, sampling of any spills or discharges, and groundwater monitoring (level and quality) in nearby bores. • Water quality monitoring is also proposed for the effluent water quality (and influent to assess treatment efficiencies). A surge pond is to be located at the WTP to enable water capture and recirculation in the case of out-of-sec treated water, ideally informed by an arsenic: electrical conductivity relationship, if one can be established, as this will provide instantaneous responses to out-of-spec water quality.
Risk management	The report has an extensive section on risk assessment and risk management, including consideration of several potential mechanisms of uncontrolled discharges, high seepage flow rates, spills, and inability to meet water quality limits.
WWLA comments	*WWLA comments are as follows:* • *There is conflict within the document about whether pit water can be used for dust suppression; this requires clarification. Further, if it is able to be used for dust suppression, there is no specified water standard that must be met for arsenic in pit water to enable this use. Clarity on this in the water management plan is required.* • *The groundwater and surface water monitoring programs for the active mining phase are robust and sampling locations are well located to identify potential and actual impacts on the receiving environment. We recommend monitoring data is provided freely to stakeholders to support transparency and trust.* • *The compliance limit for arsenic in the stream discharges is the 90% protection threshold under the ANZG. While this provides a high level of protection for environmental receptors, it does not consider the direct link between these surface water bodies and the Bendigo Aquifer, from which water is abstracted for drinking water purposes. This misalignment is somewhat mitigated by groundwater monitoring in appropriate locations which considers the New Zealand Drinking Water Standard (NZDWS) of 0.01 mg/l as a compliance target. However, a lower target, or a two-step contingency procedure to ensure early warning of contamination reaching the aquifer is recommended (e.g. between 0.01 and 0.042 mg/l there is a review of discharge sources, with more definitive action if an exceedance of 0.042 mg/l is recorded, or consideration given to observation of an increasing trend.* • *Further, a result of 0.42 mg/L would represent a 2-3 order of magnitude increase relative to the baseline water quality data for the Shepherds Creek catchment, with average values ranging from 0.0008 mg/l to 0.0024 mg/l[20].* • *Groundwater compliance thresholds are appropriate but given that current groundwater arsenic concentrations are very low (less than the laboratory reporting level), observation of trends over time should also be considered, with associated contingency procedures should an increasing trend in arsenic be observed.* • *The length of time that water treatment is required, via both active and passive means, is significantly longer than a typical discharge consent duration of 30-35 years (an anticipated 50 years plus "several decades"). While this is not necessarily a barrier to granting a consent, the scale of potential treatment required is also likely to be significantly larger (in capital expenditure and ongoing operational costs) than much of New Zealand's current or anticipated infrastructure. Safeguards are required to ensure that should a consent lapse while treatment is ongoing, there is ability to re-consent the treatment and associated discharges, including for enabling potential upgrades to the water treatment plant or passive treatment systems to meet more stringent standards, if these arise. The alternative – a system that is operating without consent and therefore without regulatory control, or a system that is not able to meet the standards of the day – is likely to be intolerable to users of the groundwater and surface water resources that will be impacted by the discharges.*

[20] Mine Waste Management, 4 August 2025. Baseline Water Quality Report, Bendigo-Ophir Gold Project. Prepared for Matakanui Gold Ltd. Application document reference Attachment D, updated 19 March 2026

	• *Post-closure monitoring is not well defined. More certainty is required regarding future compliance limits and how these will be monitored for the full duration of post-closure treatment.* • *Contingency procedures are not provided should there be an exceedance of a water quality parameter. I.e. requirements for investigation, re-testing, reporting and review of management protocols. This also applies to procedures to be carried out in the event of an unexpected discharge to a surface water feature or groundwater during active mining and closure.* • *The risk assessment has not reviewed in detail, but we note that the causes, consequences, mitigation and residual risk appear to be well considered.*

Appendix B. Laboratory Transcripts

CERTIFICATE OF ANALYSIS

Work Order	: **NH2600205**		
Amendment	: **1**		
Client	: **Williamson Water & Land Advisory**	Laboratory	: Environmental Hamilton
Contact	: Lauren Windross	Contact	: Customer Services NH
Address	: 10/1 Putaki Drive Kumeū Auckland New Zealand 0810	Address	: Ruakura Research Centre, 10 Bisley Rd Hamilton WKO New Zealand 3214
Telephone	: ----	Telephone	: [redacted]
Project	: WWLA1710	Date Samples Received	: 19-Jan-2026 08:00
Order number	: ----	Date Analysis Commenced	: 10-Feb-2026
C-O-C number	: ----	Issue Date	: 18-Feb-2026 08:57
Sampler	: Lauren Windross		
Site	: ----		
Quote number	: EN/444		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below.

Signatories	*Position*	*Accreditation Category*
Justen Berntsen	Laboratory Technician	Soil Prep, Hamilton, Waikato
Tharanga Samarasinghe	Senior Laboratory Technician	Trace, Hamilton, Waikato

General Comments

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key: CAS Number: CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
g/m3	Grams per cubic metre
mg/kg dry weight	mg/kg dry weight
pH Unit	pH Unit

>: greater than.
<: less than.
ø: ALS is not IANZ accredited for these tests.
^: This result is computed from individual analyte detections at or above the level of reporting.
~: Indicates an estimated value.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Samples were collected by yourselves (or your agent) and analysed as received at ALS NZ (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report.
Amendment : This report has been amended and re-released to allow the reporting of additional analytical data, specifically method Heavy Metals in Soil for all samples.

Analytical Results

Sub-Matrix: SOIL
(Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Client Sample ID	SS1 Depth: 0-0.05m	SS2 Depth: 0-0.05m	SS4 Depth: 0-0.05m	SS5 Depth: 0-0.05m	----
				Client Sampling date / time	16-Jan-2026 00:00	16-Jan-2026 00:00	16-Jan-2026 00:00	16-Jan-2026 00:00	----
					NH2600205-001	NH2600205-002	NH2600205-003	NH2600205-004	----
					Result	Result	Result	Result	----
HM_S: Elements in Soil									
Arsenic	7440-38-2	0.125	mg/kg dry weight		**9.03**	**3.93**	**5.94**	**5.45**	----
HM_SPLP: Elements by SPLP Extraction									
Arsenic	7440-38-2	0.0050	g/m3		<0.0050	<0.0050	<0.0050	<0.0050	----
Sample Preparation Method									
Initial pH	----	0.1	pH Unit		**6.2**	**6.2**	**6.2**	**6.2**	----
Final pH	----	0.1	pH Unit		**6.4**	**6.6**	**6.6**	**6.7**	----

Brief Method Summaries

Preparation Methods	Method	Matrix	Method Descriptions
Synthetic Precipitation Leaching Procedure on Soil Samples - Plastic Leaching Vessel	SPLPP_S	SOIL	SPLP extracted with reagent water performed according to US EPA method 1312.
Analytical Methods	**Method**	**Matrix**	**Method Descriptions**
Heavy Metals in Soil	HM_S	SOIL	Samples dried and passed through a 2 mm sieve followed by acid digestion and analysis by ICP-MS. In accordance with in-house procedure based on US EPA method 200.8.
Heavy Metals via SPLP Extraction	HM_SPLP	SOIL	SPLP extraction of soils followed by acid digestion and analysis of SPLP extracts by ICP-MS (In house procedure based on US EPA method 200.8).

CERTIFICATE OF ANALYSIS

Work Order	: **LE2603244**	Page	: 1 of 2
Client	: **ALS Enviro Hamilton**	Project	: ----
Contact	: ALS Enviro Hamilton	Purchase Number	:
Address	: ALS Food & Environmental NZ Private Bag 3345 3240 Hamilton New Zealand	Sampler Site Date Samples Received	: ---- : ---- : 2026-02-19 12:26
E-mail	: alsenviro.hamilton@alsglobal.com	Date Analysis Commenced	: 2026-02-23
Telephone	: ----	Issue Date	: 2026-03-03 09:51
C-O-C number	: ----	No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

General Comments

This certificate represents the original certificate and may not be modified or reproduced other than in full, except with the prior written approval of the issuing lab. The results apply only to the material that has been identified, received, and tested. The laboratory has no responsibility for information in this certificate that has been provided by the customer, or results that may be affected by such information. Regarding the laboratory's liability in relation to assignment, please refer to our website http://www.alsglobal.se

Signatories	*Position*
Emma Engstrom	Laboratory Manager

Laboratory	: ALS Scandinavia AB Luleå	Webpage	: www.alsglobal.se
Address	: Aurorum 10 977 75 Luleå Sweden	E-mail Telephone	: info.lu@alsglobal.com : +46 920 28 99 00

Analytical Results

Client sample ID **NH2600609_001 SS1 0-0.05m**
Laboratory sample ID **LE2603244-001**
Client sampling date / time **2026-01-16**
Sub-Matrix **SOIL**

Parameter	Result	MU	Unit	LOR	Method	Issuer
Sample Preparation						
P-As-S						
Extraction	**Yes** *	----	-	-	S-P62	LE
Organometallic compounds						
OJ-19d						
Arsenic (III)	**<0.01** *	----	mg/kg	0.0100	S-HPLC-62	LE
Arsenic (V)	**0.317** *	----	mg/kg	0.0100	S-HPLC-62	LE
Dimethylarsinate	**<0.01** *	----	mg/kg	0.0100	S-HPLC-62	LE
Monomethylarsonate(V)	**<0.02** *	----	mg/kg	0.0200	S-HPLC-62	LE

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Reference*
S-HPLC-62*	Arsenic speciation in soil, sludge and sediment by HPLC-ICP according to SOP-0601.

Preparation Methods	*Method Reference*
S-EU-not*	Sample from outside EU
S-P62*	Arsenic extraction according to SOP-0601.

Key: **LOR** = Limit of reporting represents the standard LOR for the respective parameters in each method. Note that limits of reporting may be affected if, e.g. additional dilution was required because of matrix effects, or the sample quantity was limited.

MU = Measurement Uncertainty

* = Symbol succeding any result indicates laboratory or subcontractor non-accredited test.

Measurement Uncertainty:

The uncertainty is given as extended uncertainty (according to the definition in "Guide to the Expression of Measurement", JCGM 100:2008 Corrected version 2010) calculated with a coverage factor of 2, which give level of approximately 95%. Measurement of uncertainty is reported only for detected substances with levels above the reporting limits.

The uncertainty from subcontractors is often given as extended uncertainty calculated with a coverage factor of 2. Contact the laboratory for further information.

Issuing lab

	Issuer
LE	*The analysis is provided by* ALS Scandinavia AB Luleå, Aurorum 10 Luleå Sweden 977 75 Accredited by: SWEDAC Accreditation Number: 2030, ISO/IEC 17025

R J Hill Laboratories Limited
28 Duke Street Frankton 3204
Private Bag 3205
Hamilton 3240 New Zealand

0508 HILL LAB (44 555 22)
[redacted]
mail@hill-labs.co.nz
www.hill-labs.co.nz

Certificate of Analysis

Client:	Williamson Water & Land Advisory Limited	**Lab No:**	4136102	SPv1
Contact:	Lauren Windross	**Date Received:**	16-Mar-2026	
	PO Box 314	**Date Reported:**	18-Mar-2026	
	Kumeu 0841	**Quote No:**	143859	
		Order No:	WWLA1710	
		Client Reference:	WWLA1710	
		Submitted By:	Lauren Windross	

Sample Type: Aqueous

Sample Name:	MD Bore	MD Bore Dup 1	FH Bore	QR Bore	SH Bore
Lab Number:	4136102.1	4136102.2	4136102.3	4136102.4	4136102.5
Total Arsenic g/m³	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011

Sample Name:	CT Bore	LD SW
Lab Number:	4136102.6	4136102.7
Total Arsenic g/m³	< 0.0011	< 0.0011

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1-7
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0011 g/m³	1-7

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 16-Mar-2026 and 18-Mar-2026. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

Kim Harrison MSc
Client Services Manager - Environmental