



GeoSolve Ref: 240480.03
20 March 2026

Otago Regional Council
70 Stafford Street (Phillip Laing House)
Dunedin 9016

Attention: Shay McDonald

Review of RFI Responses (Rev 1) Bendigo-Ophir Gold Project Fast-Track Application Assessment

The applicant has provided updated reporting in response to our previous report (reference 240480.03 dated 3 December 2025) and the associated ORC RFI dated 12 December 2025.

The ORC have requested that we review the applicants' responses and this report summarises that review.

Three reports have been provided by the applicant:

1. EGL Report reference 9702 dated 30 January 2026;
2. Peter O'Bryan and Associates Report reference 24053C dated 2 February 2026.
3. Peter O'Bryan and Associates Technical Memorandum reference 24053D dated 11 March 2026.

Landslide Risk

The ORC RFI was as follows:

3. Report B.21 at page 24 states: *Landslide potential into the impoundment exists. The landslide movement can be managed through tailings and landslide underdrainage in combination with tailings beaching against landslides, which together provide a buttressing effect (FM 7). The mitigation of landslides into the reservoir will form part of the Detailed Design stage.*

Please explain how the risk of landslide within the TSF impoundment area is proposed to be managed, and how any actions would be secured by consent conditions and/or management plans?

EGL's response notes the following:

- EGL/MGL are conducting geotechnical investigations at key landslide locations to inform risk assessment and TSF detailed design and building consent.
- Landslide risk mitigation and operational controls will be documented within the Dam Safety Management System (DSMS), particularly the Operations, Surveillance and Maintenance (OMS) Manual.
- EGL suggest 2 consent conditions around landslide risk as follows:

“The Consent Holder must investigate and identify active or potentially active landslides within the TSF impoundment area and assess landslide risk to the TSF. The findings must be included in the TSF Detailed Design Report.”

“The Consent Holder must develop and implement a Landslide Monitoring and Management Plan (LMMP) as part of the TSF Dam Safety Management System. The objective of the LMMP is to ensure the landslides are monitored in a way that protects people and the environment, throughout the mine operation, active closure and passive closure phases of the BOGP. This LMMP shall be subject to a peer review by a SQEP as part of the detailed design of the TSF.”

GSL Comments

The 2 conditions above are considered acceptable. The LMMP should be finalised before first tailings deposition, and we would recommend annual reporting to the consent authority of the monitoring results from the LMMP.

Our initial report also raised some concerns around the interaction between landslides and the portal to the underground mine as the basic information provided indicates that some excavation is proposed at the toe of a mapped landslide which has the potential to reactive the slide. Other infrastructure may also affect or be affected by landslides. A consent condition could be included that covers this.

On that basis we recommend that the above consent conditions are extended to the site as a whole rather than just to the tailing storage facility.

Stability of Mine Pits

The ORC RFI was as follows:

1. The proposed consent conditions (D.01 – D.04) of the application do not appear to capture the recommendations of report B.28 in relation to pre-mining investigations and operational stability monitoring for the RAS Pit, nor does there appear to be a management plan specific to the RAS Pit (or the CIT, SRX, and SRE open pits). Please explain how the recommendations in B.28 for the

RAS Pit will be implemented on site, including how they may be secured by consent conditions, and to what extent these pre-mining investigations and operational monitoring methods will also be delivered for the CIT, SRX, and SRE pits. In your response, please discuss the recommendations of GeoSolve which can be found at pages 4 and 5 of the memorandum attached as **Appendix A**.

The POB response notes:

- Additional geotechnical drilling for open pit mining commenced Jan 2025; 7 of 8 boreholes completed and logged; assessment ongoing.
- Emphasis on observational approach during mining via wall mapping, quantitative monitoring, and iterative model updates.

- Quantitative monitoring to include EDM prism arrays with telemetry and UAV-derived DTMs for change detection and compliance.
- Separate Ground Control Management Plans (GCMPs) for open pit and underground; open pit GCMP may cover all pits with pit-specific subsections. A sample table of contents is provided.
- 2D limit equilibrium analysis has limited applicability at RAS except SW/NE sectors due to wall–fault geometry.
- 3D FLAC3D staged analyses (Sept 2025) indicate negligible/minimal disturbance near DOC exclusion zone; equivalent FoS in SW sector > 1.5 even for lower-bound strengths; further 3D modelling recommended.
- Assessments to date by appropriately qualified and chartered personnel.
- Preliminary stability analyses for CIT, SRX, SRE using current interpretations and RAS-derived properties.
- CIT: to be fully backfilled; stand-off to DOC boundary sufficient to avoid long-term crest retreat.
- SRX: not expected to be significantly affected by TGF; intersections mainly in floor/low NE batters; NE wall FoS for highest section considered > 2.0.
- SRE: shallow pit undercutting TGF locally; potential instability limited by small scale; to be backfilled.
- Post-closure wall relaxation/degradation expected; exclusion zone around RAS required (not backfilled).
- WA guideline (1997) used to define Zone of Influence (ZOI) and barrier location (45° to TOFR then 25° to surface; barrier ≥10 m outside ZOI).
- Sections at 10 m spacing in SW RAS sector show ZOI outside DOC area; minimum ZOI–DOC offset ≈ 40 m, leaving ≥20 m corridor for a bund; many offsets much larger.

GSL Response

The POB response is very helpful. Our main concern based on the initial documentation provided was potential instability within the RAS pit affecting DOC public land. POB has provided some cross sections through this boundary, which indicate that overall final slopes through the boundary are relatively shallow for rock (45 degrees overall) and it appears that the main plane of weakness (the TGF) does not daylight within DOC land. This means that during mining should any instability occur along this feature, DOC land should not be affected.

Overall, the applicant response provides some assurance that the stability of DOC land will remain at acceptable levels during mining and post closure. It should be noted that the analysis and assessment by POB is preliminary and based on limited available information.

The geotechnical stability of the pit and adjacent public land does not appear to be covered by any of the applicant's proposed consent conditions. Therefore, we recommend that the conditions previously outlined are added:

The consent holder must ensure that the stability of ground outside the project site boundary is not adversely affected by the construction or operation of any of the deep mining pits.

1. A minimum FoS of 1.5 shall be maintained under static loading for all ground outside the site boundary, unless an alternative FoS is agreed in writing by the Consent Authority.
2. Prior to excavation, the consent holder shall provide a geotechnical stability assessment prepared by a suitably qualified and experienced practitioner. The assessment must:
 - Model potential failure surfaces and assess FoS for areas outside the site boundary.
 - Identify any mitigation measures or monitoring required to maintain compliance.
3. All stability assessments and monitoring reports shall be prepared by a suitably qualified chartered geotechnical or mining engineer.

The geotechnical issues post closure are briefly mentioned in proposed condition C48 (e), however this condition is not sufficiently detailed and the conditions we previously suggested should be considered:

Upon abandonment or closure of the mining pit, the consent holder must:

1. Designate an exclusion zone around the pit to prevent public access. The extent of the exclusion zone shall be determined based on residual stability risks and safety considerations and must be approved by the Consent Authority.
2. Construct and maintain physical barriers (e.g. bunds) and install appropriate signage to restrict entry and warn of hazards.
3. Ensure that these measures are designed and implemented to remain effective in perpetuity, including provisions for ongoing maintenance or transfer of responsibility to a suitable entity.
4. Submit an Exclusion Zone and Public Safety Management Plan to the Consent Authority for certification prior to site abandonment. The plan must detail:
 - Location and dimensions of the exclusion zone.
 - Type and specifications of barriers and signage.
 - Long-term maintenance arrangements.

In addition to the above the effects of any instability of the Rise and Shine and Shepherds Creeks will need to be considered and an additional condition should be included to ensure that this is assessed.

5. The post closure stability of the Rise and Shine and Shepherds Creeks should also be considered and appropriate mitigations provided to ensure their stability in perpetuity.

Underground Mining

The ORC RFI was as follows:

- Report B.48 does not appear to contain an assessment of the potential external effects of the proposed RAS underground mining operation. The primary potential external effect is mining-induced subsidence. Please indicate whether (and when) a full subsidence assessment report will be undertaken, and how it is proposed to secure any recommendations of this assessment in consent conditions and/or management plans.

The POB response notes:

- Full subsidence assessment to be completed once mining method, stoping extents, pillars, sequence and backfill strategy are defined, and more structural/rock mass data are available.
- Preferred hybrid approach: continuum (FLAC3D) + discontinuum (3DEC) modelling coupled with monitoring; risk-based with conservative assumptions; TARPs linked to indicators; contingencies may include exclusion zones, sterilisation, backfilling.

The ORC requested additional information on the likely effects of any subsidence “... a relatively brief description of the potential surface level effects of the underground mining activity, for example, the likelihood, nature, and approximate magnitude of adverse effects on land stability, surface watercourses, and mine infrastructure such as the TSF and processing plant”. The applicant responded to this via the additional POB technical memorandum (document 3 above).

GSL Response

The suggested approach to assessing potential subsidence is considered appropriate. The additional POB memo (document 3) provides an assessment of the likely magnitude and effects of subsidence using empirical methods, which is considered appropriate at this stage of the project. The conclusion is that there could be some subsidence that affects the stability of the mine pit, which would need to be managed by the day-to-day mining operations if it eventuated.

There could also be some subsidence that could redirect flows from the Shepherds Creek into the pit. It is suggested that this could be mitigated by bunding. This mitigation is appropriate; the only potential issue would be if the subsidence occurred post closure. Once the more detailed subsidence assessment is carried out then this risk will be able to be quantified to some degree and appropriate mitigation designed.

Some general subsidence of the ground is predicted above and around the underground mining through the centre and northern flanks of the valley.

Overall, the revised memo provides an indication of the extent and magnitude of any subsidence. The empirical methods adopted are likely to be conservative.

We would recommend that a consent condition be included as follows:

Prior to the commencement of any underground mining activities, the consent holder must prepare and submit to the Consent Authority a Subsidence Assessment Report. The report shall:

- 1. Identify and evaluate the potential for ground subsidence resulting from the proposed mining operations, including predicted magnitude, extent, and timing of subsidence effects.*
- 2. Assess potential impacts on surface infrastructure, surface water features and land stability within the area of influence.*
- 3. Include a monitoring and management plan specifying:*
 - o Baseline ground level measurements prior to mining.*
 - o Ongoing monitoring methods and frequency during mining and post-closure.*
 - o Trigger levels for subsidence and corresponding mitigation actions.*
- 4. Be prepared by a suitably qualified and experienced geotechnical or mining engineer and certified as meeting industry standards.*
- 5. Receive written certification from the Consent Authority prior to underground mining commencing*

Engineered Landforms

As noted in our initial report we had no significant concerns and the consent conditions proposed by EGL have been included within the conditions proposed.

Applicability

This report has been prepared for the sole use of our client, Otago Regional Council, with respect to the particular brief and on the terms and conditions agreed with our client. It may not be used or relied on (in whole or part) by anyone else, or for any other purpose or in any other contexts, without our prior review and written agreement.

Yours faithfully,



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