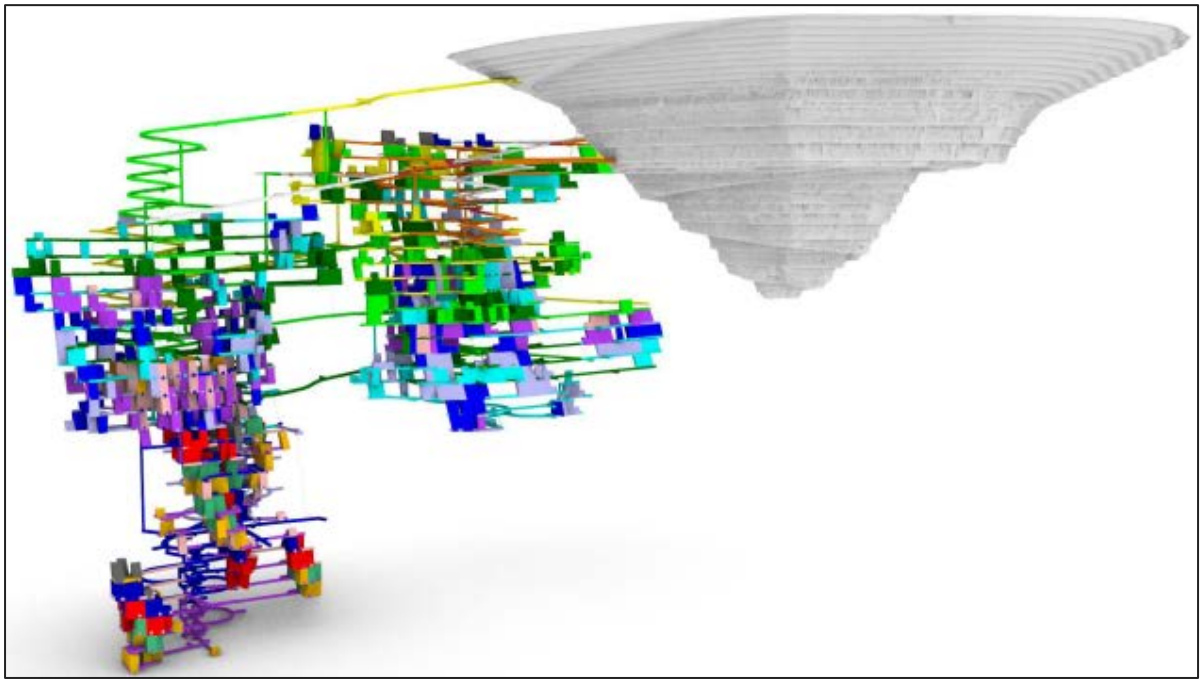
Cowal Gold Operations Underground Development Modification 1

Optimisation Modification

State Significant Development Modification Assessment
(SSD 10367 MOD 1)

November 2022



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Published by the NSW Department of Planning and Environment

dpie.nsw.gov.au

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Subtitle: Optimisation Modification

Cover image: Optimised CGO Underground Mine (Source: Evolution Mining (Cowal) Pty Limited)

Contents

1 Introduction

Evolution Mining (Evolution Mining) Pty Limited has approval to develop the Cowal Gold Operations Underground Development Project (the project) approximately 38 kilometres (km) north-east of West Wyalong (see **Figure 1**). The underground mining operation is located adjacent to the Cowal Gold Mine open cut pit (see **Figure 2**), and together these operations form the Cowal Gold Operations (CGO).

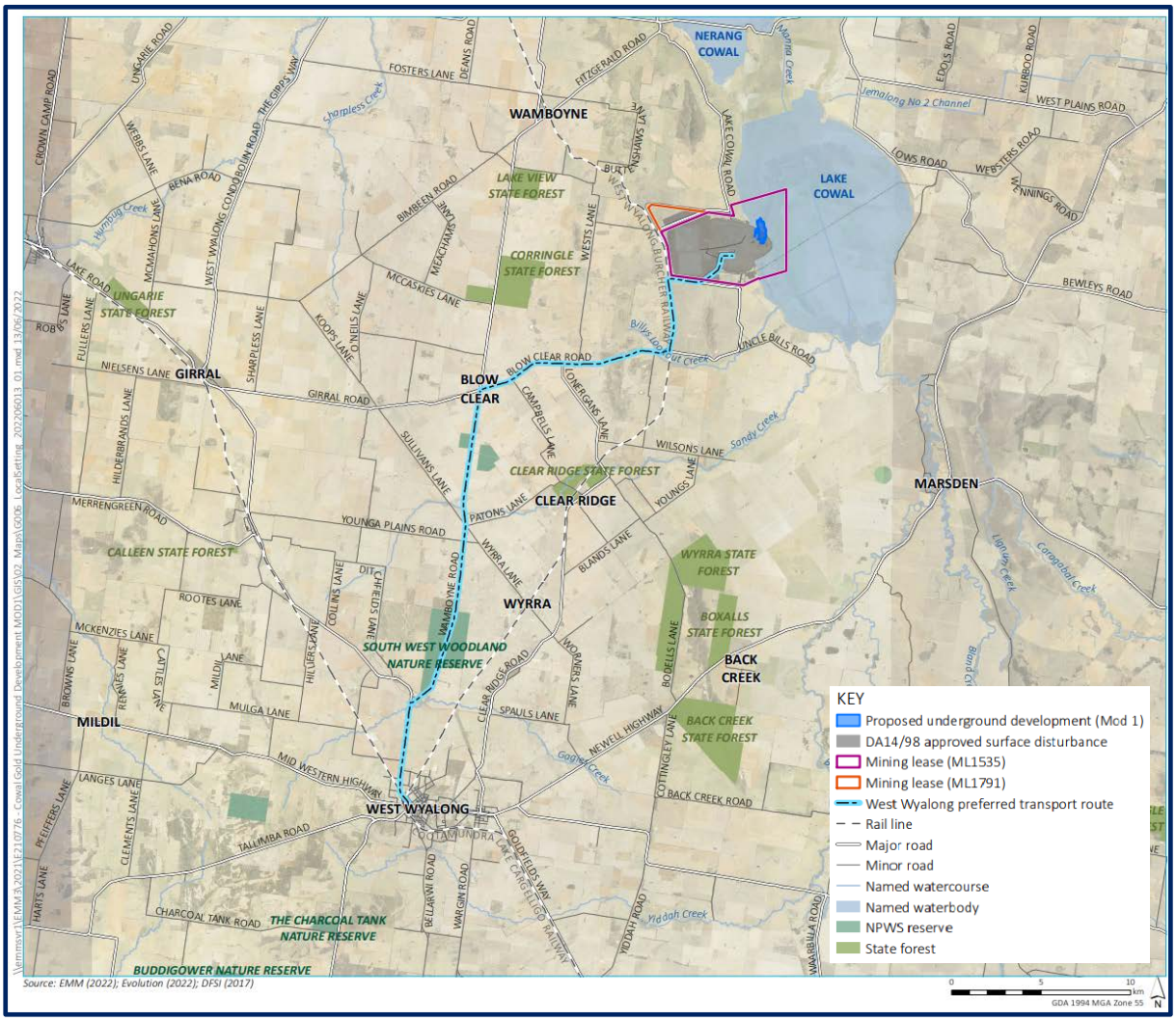

Figure 1 | Cowal Gold Operations local context map

CGO operates under two ministerial development consents, being:

- DA14/98 (granted in 1999), which regulates open pit mining and allows ore processing at a rate of 9.8 million tonnes per annum (Mtpa), waste and tailings emplacement on site and ancillary infrastructure.
- SSD 10367 (granted in 2021), which allows underground stope mining at a rate of up to 1.8 Mtpa, backfilling of stopes and delivery of ore from the underground mine to the processing plant and ancillary infrastructure associated with underground mining.

SSD 10367 currently allows two declines to be developed with six access points, including three primary access points (the main portal, the box-cut and the fresh air intake/haulage decline) and three secondary access points (two fresh air adits and an exhaust adit). Each access point has connecting drives to the main underground decline.

The main portal and box cut, which were both approved to be developed on the south side of the main open cut pit (inside and outside the pit respectively), were intended to be used as the main access to the underground mine for personnel and vehicles and to transport ore and waste rock to the surface. The fresh air intake/haulage declines were intended to provide ventilation and an alternative haulage pathway.

Personnel and services underground access is also provided by the Warraga decline portal. This decline, approved under Part 5 of the EP&A Act, was developed as part of earlier underground exploration.

Since gaining approval for the project, Evolution Mining has undertaken detailed mine design planning and determined that changes to the underground access points and access tunnel locations would allow it to extract ore more efficiently. Consequently, the company is seeking to modify its development consent to allow these changes, as described in more detail below.

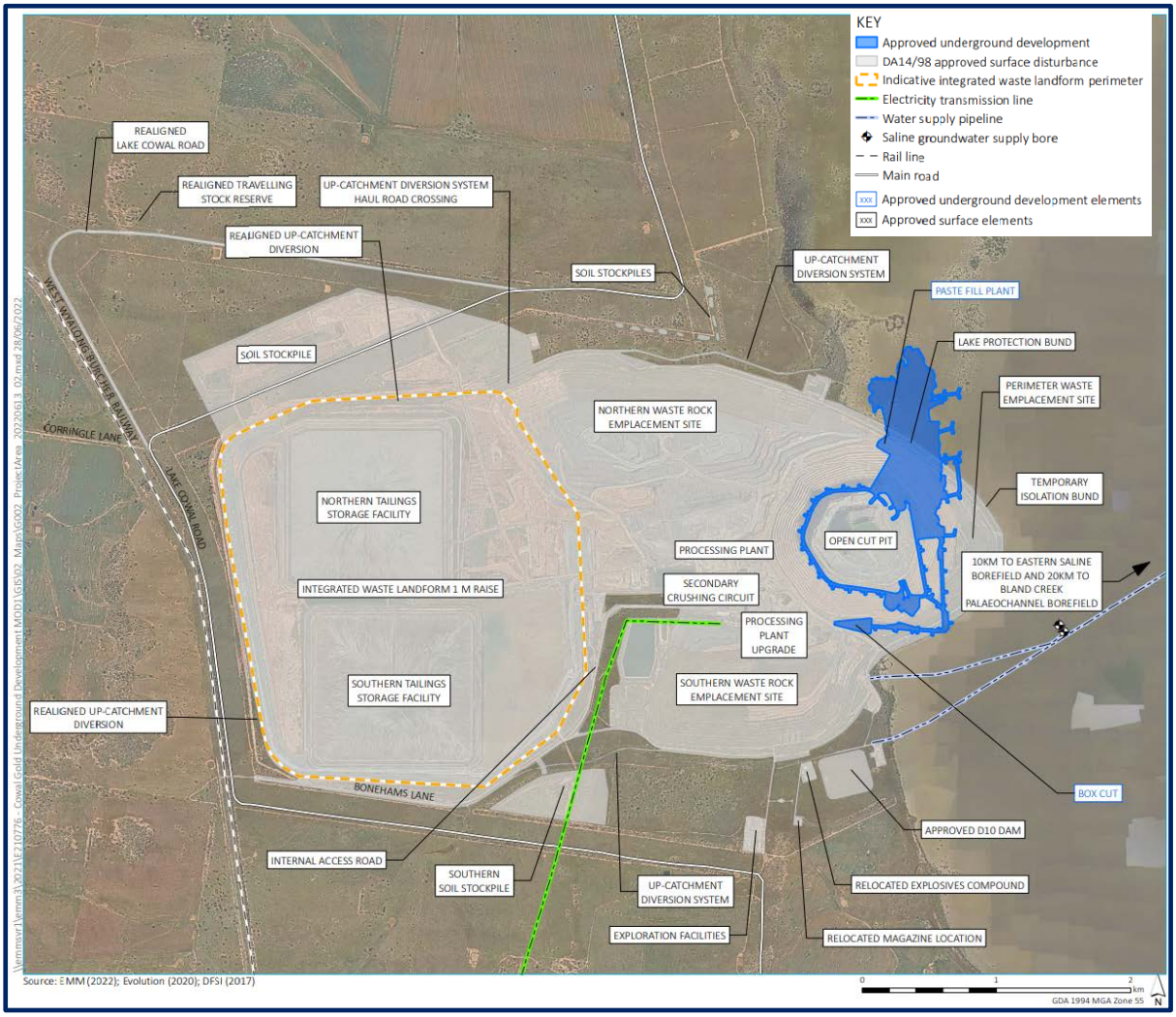

Figure 2 | Approved Cowal Gold Operations layout

2 Proposed Modification

Access Points

The modification proposes to develop a new portal in the north wall of the open cut pit that would provide personnel and maintenance access, as well as serving as an alternate ore and waste rock haulage route and providing ventilation to the underground workings. This portal would replace the box cut and fresh air intake/haulage decline portal (i.e. the box cut and fresh air intake/haulage decline portal would not be constructed).

The modification also proposes to expand the function of the Warraga decline portal to provide personnel and maintenance access to the underground, and for ore and waste rock haulage to the surface.

A summary of the access point changes associated with the proposed modification is presented in **Table 1** below.

Table 1 | Summary of Changes to Access Points

Access Point	Approved Purpose	Proposed Modification
Main Portal	Main service entry to the underground mine for personnel and vehicles.	Replaced by a new primary access portal in the north of the open cut pit which would provide worker access, ventilation, maintenance access, ore haulage and waste haulage.
Box-cut	Personnel, material and maintenance light vehicle access to the mine.	No longer planned to be developed. Access to the underground workings would be provided via the new primary access portal and the existing Warraga portal.
Fresh Air Intake/Haulage Decline Portal	Provides a fresh air connection for lower working areas, an emergency egress route from underground workings and an alternate haulage route.	No longer planned to be developed.
Warraga Decline Portal	Access to the exploration decline and provision of services and ventilation.	Now proposed to also be used for worker access, maintenance access, ore haulage and waste haulage.

The new portal would take around 2-6 months to construct and construction will involve standard excavation and tunnelling techniques. A comparison of the proposed modification and currently approved underground development footprints is shown in **Figure 3**. There are no proposed changes to the fresh air intake adits or the exhaust adit.

Access Tunnel Geometry

The modification also seeks to modify the location of access tunnels between the development declines and the stoping areas (see **Figure 4**). The key change would be to relocate development tunnels from the western side of the ore body to the eastern side, where they would be below the ore body rather than above it. The proposed location of the tunnels would be more geotechnically stable during

production activities and would also allow for potential future expansion of the current open cut pit as the separation distance between the pit and the tunnels would be larger.

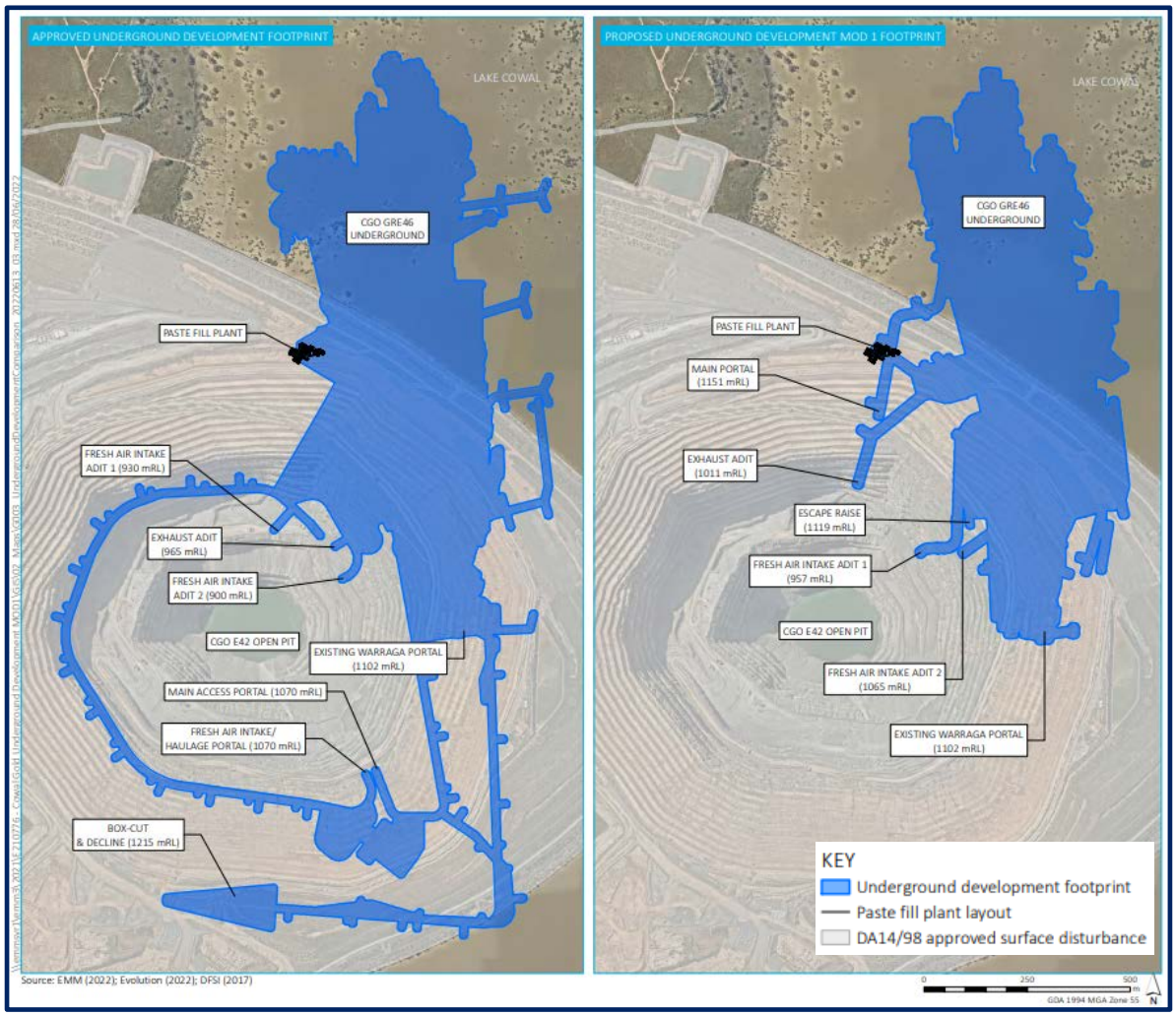

Figure 3 | Comparison of the approved and proposed modification footprints

Ore Production Rate

The proposed modification also seeks to increase the ore production rate from 1.8 Mtpa to 2.6 Mtpa. The increase in production would allow Evolution Mining to complete production earlier in the life of the project and reduce the overall number of years that the mine would be producing ore.

There would be no change to the total resource or the maximum amount of ore that would be extracted, no change to the mining method, and no change to the annual processing rate. The proposed modification relates wholly to SSD 10367 and would not require a modification to DA14/98,

The proposed modification is described in detail in the modification report (see **Appendix A**).

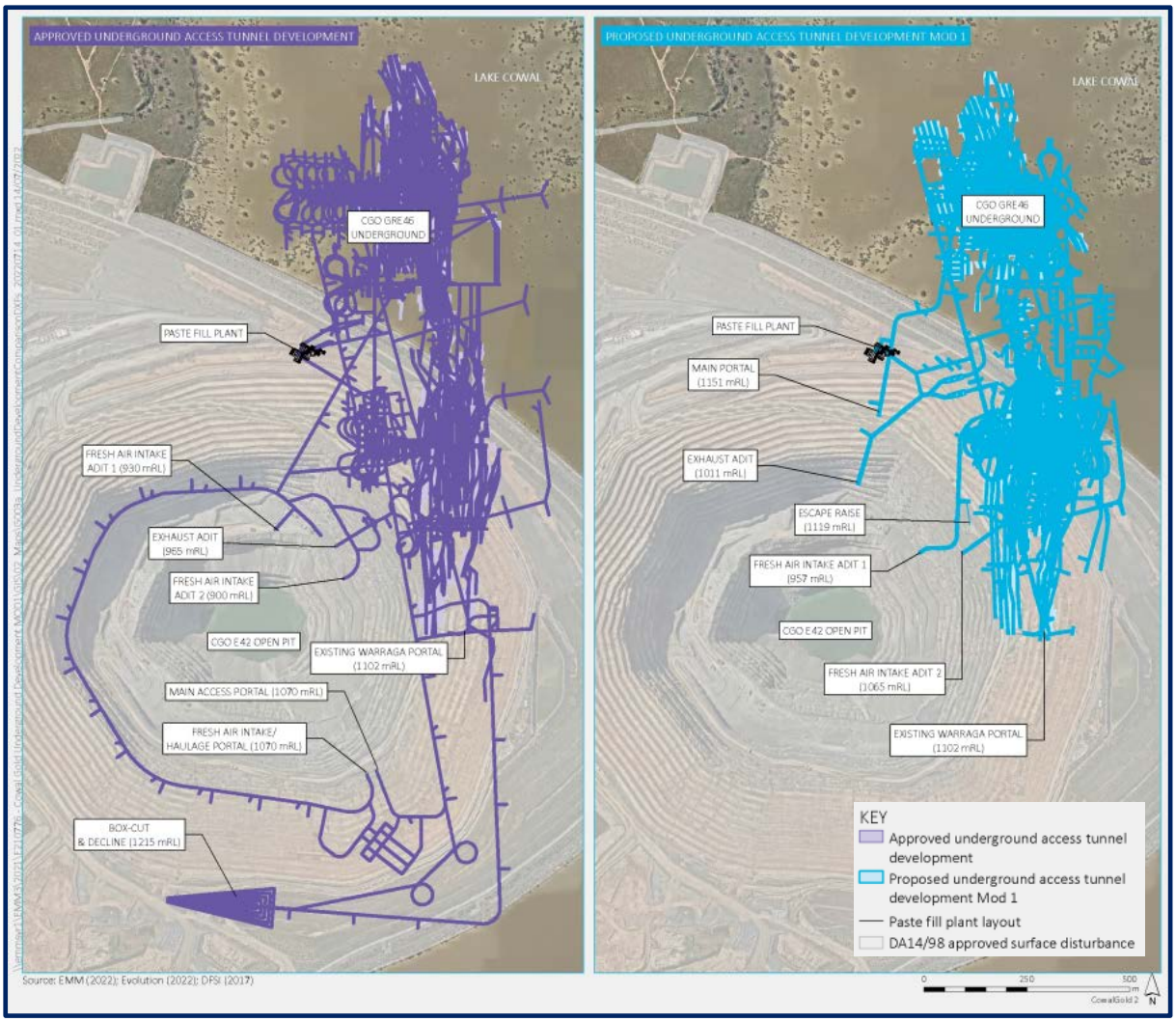

Figure 4 | Comparison of the approved and proposed modification access tunnels

3 Statutory Context

3.1 Scope of Modification

The modification application and modification report were lodged under Section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The department has reviewed the scope of the modification application and considers that:

- the proposed changes are relatively minor in comparison to the approved project;
- there would be no change to the approved mine life or processing rates;
- the impacts of the development as modified would be similar to the impacts of the approved project; and
- the development would remain substantially the same development as approved under the most recent modification.

Therefore, the department is satisfied the proposed modification is within the scope of section 4.55(2) of the EP&A Act and does not constitute a new development application. Accordingly, the department considers that the application should be assessed and determined under section 4.55(2) of the EP&A Act rather than requiring a new development application to be lodged.

3.2 Consent Authority

The Minister for Planning (the Minister) is the consent authority for the modification application under section 4.5(a) of the EP&A Act. However, under the Minister's delegation of 9 March 2022, the Director, Resource Assessments, may determine the application. This is because Evolution Mining has not made any reportable political donations, there were no community submissions objecting to the modification, and Bland Shire Council did not object to the proposed modification.

3.3 Mandatory Matters for Consideration

The department conducted an assessment of the project against the mandatory matters for consideration as part of the original assessment of SSD 10367. The department considers this modification application does not result in significant changes that would alter the mandatory matters for consideration under section 4.15 of the EP&A Act and conclusions made as part of the original assessment.

3.4 Objects of the EP&A Act

The objects of the EP&A Act are the underpinning principles for all decision making under the act. They must be considered by the consent authority when determining a development application under the act. The department has assessed the modified project against the objects found in Section 1.3 of the EP&A Act.

3.5 Impacts on Biodiversity Values

Section 7.17 of the *Biodiversity Conservation Act 2016* specifies that if the approval authority is satisfied that a modification would not increase the impacts of a development on biodiversity values, a biodiversity development assessment report (BDAR) is not required.

The department considers that there would be no increase in impacts on biodiversity values from the modification and consequently a BDAR report is not required.

4 Engagement

4.1 Department's Engagement

The modification report was exhibited on the department's website from Friday 19 August 2022 to Thursday 1 September 2022. Previous submitters were notified of the modification application and invited to make a submission and the modification report was referred to Bland Shire Council, Forbes Shire Council, Lachlan Shire Council and relevant State government agencies for advice.

The department received advice from four agencies and from Bland and Forbes Shire Councils. The department did not receive any submissions from the public and Lachlan Shire Council advised they would not be making a comment on the proposed modification.

4.2 Summary of Advice

The Department of Planning and Environment Water (DPE Water) did not raise concerns but requested clarification about the project's water requirements.

The **Department of Regional NSW – Mining, Exploration & Geoscience** (MEG) noted that the project represents an efficient development and utilisation of minerals resources and considers that the modification would provide economic benefits to the state sooner than previously anticipated.

The **Environment Protection Authority** (EPA) did not raise concerns about the modification.

The **Resources Regulator** had no specific comments regarding the proposed modification and noted that CGO would be required to undertake a risk-based approach to achieving the required rehabilitation outcomes.

Bland Shire Council (BSC) did not object to the proposed modification but noted that consideration should be given to housing and traffic impacts.

The department notes that the proposed modification would not result in any changes to the number of workers at the mine or the amount of traffic on the road network, and there would be no changes to housing or traffic impacts as a result.

Forbes Shire Council (FSC) referred to their comments made on the original application for the project and requested that these matters be considered again for the proposed modification.

The department notes that FSC's comments on the original application related to the impacts on the roads from mine employees using the roads, and that these were comprehensively considered during the assessment of that application. The current modification does not change the number of workers at the mine or the amount of traffic on the road network, and there would be no change to the road impacts due to the modification.

5 Assessment

The department has assessed the modification application and supporting information in accordance with the relevant requirements of the EP&A Act, including the matters for consideration set out in section 4.15(2) of the EP&A Act.

The department considers that the key assessment issue for the modification relates to groundwater, which is discussed in **Section 5.1**.

The department's consideration of noise, air quality and subsidence issues associated with the proposed modification are discussed in **Section 5.2**.

The department considers that other issues associated with the proposed modification, such as transport, biodiversity and rehabilitation impacts would not increase and can be adequately managed under the existing approval.

5.1 Water

Groundwater

Impacts to groundwater levels for the approved project were predicted to be minor during underground mining. The groundwater model was updated to account for the changes associated with the modification and shows that impacts to groundwater levels during operations and post closure would be very similar to the approved project.

Peak combined groundwater inflows into the open-cut pit, proposed stopes and access tunnels within the underground development is predicted to increase from 2.8 ML/day to 3.2 ML/day in 2031. Inflow

into the open-cut pit is predicted to be 0.5 ML/day in 2035, which is similar to the approved project (0.5 ML/day between 2031 and 2038).

Following mine closure, groundwater inflow to the open-cut pit is still expected to rise to 0.9 ML/day by the mid-2060s, with inflow gradually falling to, and remaining at approximately 0.65 ML/day. This is similar to the rate modelled for the approved project, which was approximately 0.6 ML/day.

Drawdown would be within +/-5 m of that modelled for the approved project, and is still predicted to mostly be contained around the open-cut and underground mining developments during mining and post closure.

Drawdown is predicted to be less pronounced in the south-east section of the mining lease due to the removal of the box cut and underground access points on the east of the open cut.

The impact of mine groundwater inflow on the water levels of Lake Cowal is still considered to be negligible and water in the completed mine workings beneath Lake Cowal are predicted to remain at similar levels to those predicted for the approved project 200 years after the end of mining at CGO (i.e. below the level of the bed of Lake Cowal).

The two-metre drawdown contour would be located closer to the mine site than was predicted for the approved project, and impacts to third-party bores are still predicted to be less than two metres.

Minor changes to the amount of water requiring licencing under the relevant water sharing plans include:

- a reduction of 293 ML/year to 285 ML/year (maximum) from the Upper Lachlan Alluvial Zone 7 Management Zone; and
- an increase of 759 ML/year to 802 ML/year (average), or 1,004 ML/year to 1,152 ML/year (maximum) from the Lachlan Fold Belt groundwater source

Surface Water

The site water balance model for the mine (which models the impacts from both the open cut and underground operations) was updated to account for the changes associated with the modification.

The updated site water balance indicates that the demand from external water sources would reduce, from an average of 2,744 ML/year to 2,524 ML/year. These changes are mainly a result of the increased groundwater inflow rates.

External water demand would be met from the Bland Creek Palaeochannel Borefield, the Eastern Saline Borefield and the Lachlan River. A comparison of the average water demand modelled for the proposed modification and approved project is shown in **Table 2** below.

Table 2 | Approved and Predicted Water Demand for the Project

Water Source	Modelled Water Demand for the Approved Project (average)	Modelled Water Demand for the Proposed Modification (average)
Bland Creek Paleochannel Borefield	1,685 ML/year	1,511 ML/year
Eastern Saline Borefield	431 ML/year	421 ML/year
Lachlan River	713 ML/year	592 ML/year

Evolution Mining does not yet have sufficient licensed entitlement from the Lachlan River but expects to be able to purchase this on the open market, and no supply shortfalls were predicted in any of the water balance model climatic scenarios.

The predicted maximum open-cut pit water level of 806 m is lower than the elevation of the lowest proposed access point (957 m), and therefore the risk of underground inrush through the proposed access portals is expected to be negligible.

No additional impacts on inflows to Lake Cowal is expected to occur as a result of the proposed modification.

Conclusion

The department is satisfied that the proposed modification is unlikely to significantly change the surface water or groundwater impacts of the project and that the strict water management performance measures set out in the conditions are adequate to manage any potential impacts to water resources.

5.2 Other Issues

The department considers that additional assessment issues relate to noise, air quality and subsidence as a result of the increased processing rate and changes to tunnel and access geometry. The department's assessment of these issues is summarised in **Table 3** below.

Table 3 | Other Issues

Issue	Findings	Recommendations
Noise	• Noise emissions from construction of the new primary access portal are expected to be much lower than those predicted for the box-cut construction, and consequently overall construction noise is not predicted to increase. • The increase in ore production would require additional haulage of material from underground. However, this additional haulage would only represent a 1% increase in total materials handling for the combined open cut and underground operations, which is unlikely to change total noise at receivers. • The haulage distances between the processing area and the proposed primary access portal is greater than between the processing area and the box cut. However much of the route	No changes to conditions.

Issue	Findings	Recommendations
	would be deeper in the pit, which would negate any potential increase in noise emission from the truck movements. • There is no proposed increase in the transport of materials offsite and therefore road traffic noise at the nearest residential dwellings is anticipated to be consistent with the approved project. • The department considers the noise impacts are unlikely to be significantly different from the approved impacts, and that the existing conditions of consent, which include strict noise limits for the site, are adequate to manage noise.	
Air Quality	• Dust and air emissions are not predicted to be significantly different to the approved project. • Materials hauled from underground would increase overall materials handling on site by 1%, which would generate additional dust on site. However, haulage distances to the waste dump from the new access portal would be shorter than from the box cut, which would result in less dust generation, largely offsetting the impacts from more trucks. • The largest predicted contribution to greenhouse gas emissions from the approved project was from the construction of the box cut. Given that that would no longer be constructed, and given total production over the life of the project would not be increasing, greenhouse gas emissions are predicted to be slightly lower compared to the approved project. • The department considers that an increase in adverse air quality impacts is unlikely and that the conditions of consent, which include strict limits on dust and particulate matter, are adequate to manage air quality impacts.	No changes to conditions.
Subsidence	• The original EIS concluded that subsidence impacts would be negligible on the surface. Numerical modelling prepared for the modification indicates that the proposed mine plan is unlikely to result in instability and that subsidence risks would remain as approved. • The existing conditions of consent require Evolution Mining to prepare a subsidence monitoring program that includes a requirement to validate subsidence predictions and detail the measures and controls to avoid and minimise subsidence, including a trigger action response plan for subsidence. • The department considers the conditions are adequate to manage any subsidence risks.	No changes to conditions.
Biodiversity and Heritage	• There would be no impacts to biodiversity or Aboriginal or historic heritage from the modification as there would be no additional surface disturbance.	No changes to conditions.

6 Evaluation

The department has assessed the modification application and supporting information in accordance with the relevant requirements of the EP&A Act, including the relevant matters for consideration.

The department considers that the proposed modification would allow Evolution Mining to operate more efficiently and with greater operational flexibility without any significant change to the environmental impacts of the project.

The modification would also be in the public interest as the increase in annual production rate would potentially shorten the duration of the project, reducing the duration of any adverse amenity impacts. It would also allow Evolution Mining to continue to provide significant taxes and royalties to NSW and the Australian government, including $556.6 million in additional revenue through personal income tax, fringe benefits, company tax and GST; and $174.8 million in additional revenue to NSW through royalty payments.

The department considers the project can be carried out in an environmentally sustainable manner and should be approved.

The department has drafted a recommended instrument of modification (see **Appendix D**) and consolidated version of the project approval, as modified (see **Appendix E**).

7 Determination

It is recommended that the Director, Resource Assessments as delegate of the Minister for Planning:

- **considers** the findings and recommendations of this report
- **determines** that the application (SSD 10367 MOD 1) falls within the scope of section 4.55(2) of the EP&A Act
- **forms the opinion** under section 7.17(2)(c) of the *Biodiversity Conservation Act 2016* that a BDAR is not required to be submitted as the application would not increase the impacts of the project on biodiversity values
- **accepts and adopts** all of the findings and recommendations in this report as the reasons for making the decision to approve the modification
- **modify** the consent (SSD 10367 MOD 1)
- **signs** the attached approval of the modification (**Appendix D**).

Recommended by:

07/11/2022

Brittany Golding
Planning Officer
Resource Assessments

Recommended by:

07/11/2022

Rose-Anne Hawkeswood
Team Leader
Resource Assessments

The recommendation is **Adopted / ~~Not adopted~~** by:

7/11/2022

Stephen O'Donoghue
Director
Resource Assessments
as delegate of the Minister for Planning

Appendices

Appendix A – Modification Report

Refer to “Modification Report” folder on the department’s website at https://pp.planningportal.nsw.gov.au/major-projects/projects/cowal-gold-underground-mod-1-optimisation-modification

Appendix B – Agency Advice

Refer to “Agency Advice” folder on the department’s website at https://pp.planningportal.nsw.gov.au/major-projects/projects/cowal-gold-underground-mod-1-optimisation-modification

Appendix C – Additional Information

Refer to “Additional Information” folder on the department’s website at https://pp.planningportal.nsw.gov.au/major-projects/projects/cowal-gold-underground-mod-1-optimisation-modification

Appendix D – Notice of Modification

Refer to “Determination” folder on the department’s website at https://pp.planningportal.nsw.gov.au/major-projects/projects/cowal-gold-underground-mod-1-optimisation-modification

Appendix E – Consolidated Consent

Refer to “Consolidated Consent” folder on the department’s website at https://pp.planningportal.nsw.gov.au/major-projects/projects/cowal-gold-underground-mod-1-optimisation-modification