



Rasp Mine Project - Modification 9

Extension of Underground Exploration

State Significant Development Modification Assessment (07_0018 MOD 9)

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1 Introduction

Broken Hill Operations Pty Limited (BHOP), a wholly owned subsidiary of CBH Resources, owns and operates the Rasp Mine (the mine), an underground zinc, lead and silver mine located within the City of Broken Hill local government area.

The mine has operated almost continually since the 1880s and is surrounded by the town of Broken Hill and two other mining operations, including Broken Hill North Mine and Southern Operations (see Figure 1).

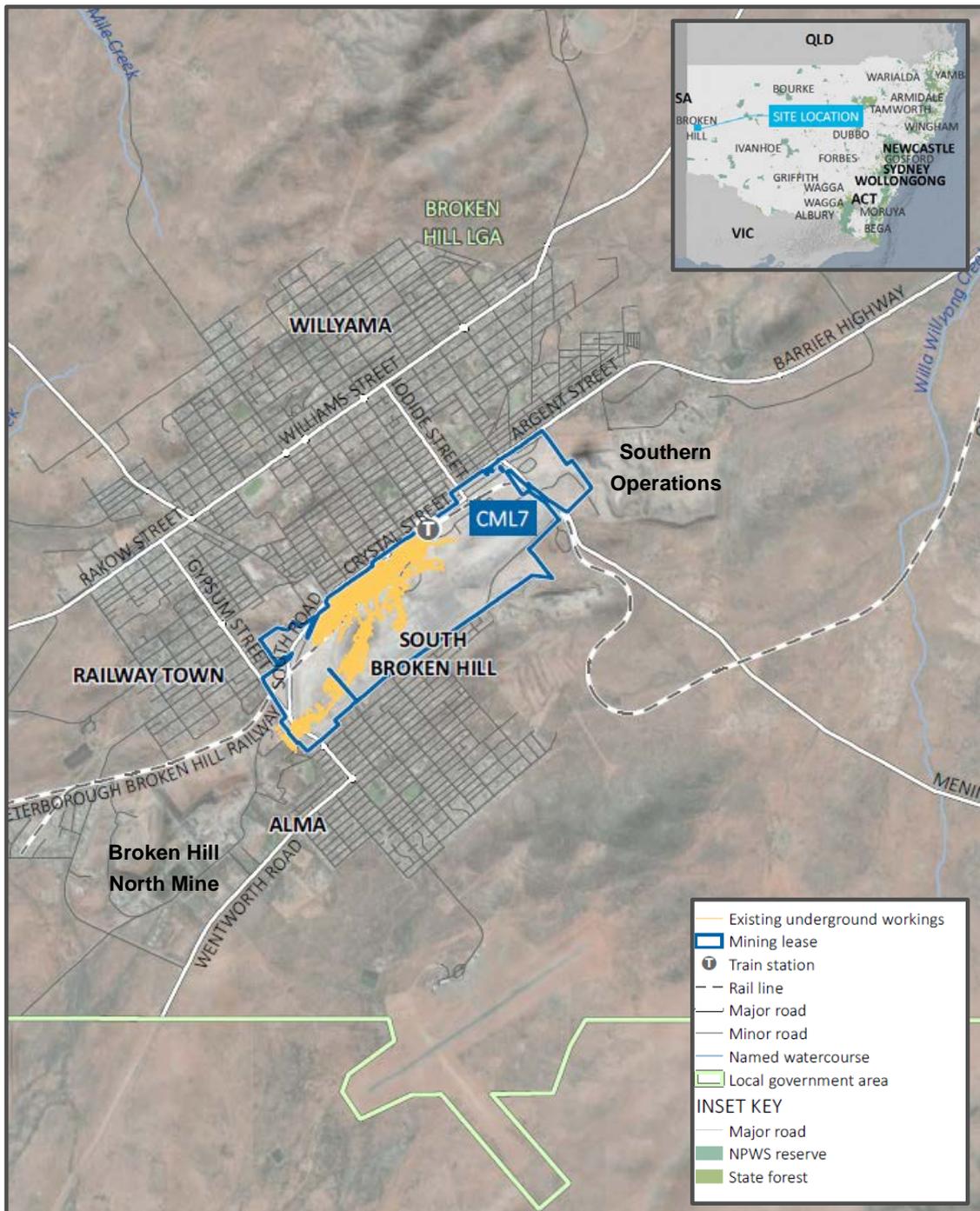


Figure 1 | Site Location

The mine operates under a Ministerial approval granted in January 2011. This approval has been modified on seven occasions and allows BHOP to:

- extract up to 8.45 Million tonnes (Mt) of ore from the mine at a rate of 750,000 tonnes (t) per annum;
- carry out mining operations until 31 December 2026;
- process ore at the on-site processing plant;
- operate two Tailing Storage Facilities (TSF);
- backfill underground voids with tailings and waste rock;
- conduct crushing and screening activities in either the Kintore Pit or BHP Pit;
- use stored waste rock to increase the capacity of TSF2;
- use waste rock material for various construction and rehabilitation activities on site; and
- transport ore concentrate via rail to Port Pirie in South Australia and Newcastle in New South Wales (NSW).

Operations at the mine are supported by a range of on-site facilities, including crushing and processing plants, a tailings backfill plant, rail siding facilities, as well as administration offices, workshops and a storage warehouse.

The mine is regulated under Mining Lease CML7 and BHOP is also permitted to mine a small section within ML1249 under a sublease arrangement with the adjoining mine operator (Perilya Limited).

Figure 2 presents the approved project layout and mining lease areas.

2 Proposed Modification

BHOP is seeking to modify the project approval to extend two development drives within the Main Lode mining area (see **Figure 3**). The drives would be developed for exploration purposes to connect existing workings to areas of potential future mineral extraction. One of the drives would also connect to a proposed new box cut and mine entry portal, in which an application has been submitted to the Department but has not yet been determined (Modification 6). No additional resource extraction is proposed.

The development drives (referred to as 'Blackwoods and 'Block 13' drives) would be located approximately 235 metres (m) below ground level (bgl) and have dimensions of approximately 5.0 x 5.8 m. BHOP propose to undertake the drives using conventional drill and blasting techniques which are already in use at the mine.

Secondly, BHOP propose to install an emergency egress ladderway (EEL) near the centre of the site connecting to underground workings approximately 150 m bgl (see **Figure 3**). The EEL would replace an existing emergency egress shaft from underground workings, allowing the site to comply with the requirements of the *Work, Health and Safety (Mines and Petroleum sites) Regulation 2014* (WHS Regulation).

BHOP propose to undertake both activities 24 hours per day, noting that development workings would be undertaken wholly underground and construction works for the proposed EEL would be undertaken in a banded location and be short-term in duration (i.e. 1 to 2 months).

A full description of the proposed modification can be found in BHOP's Modification Report (see **Appendix A1**).

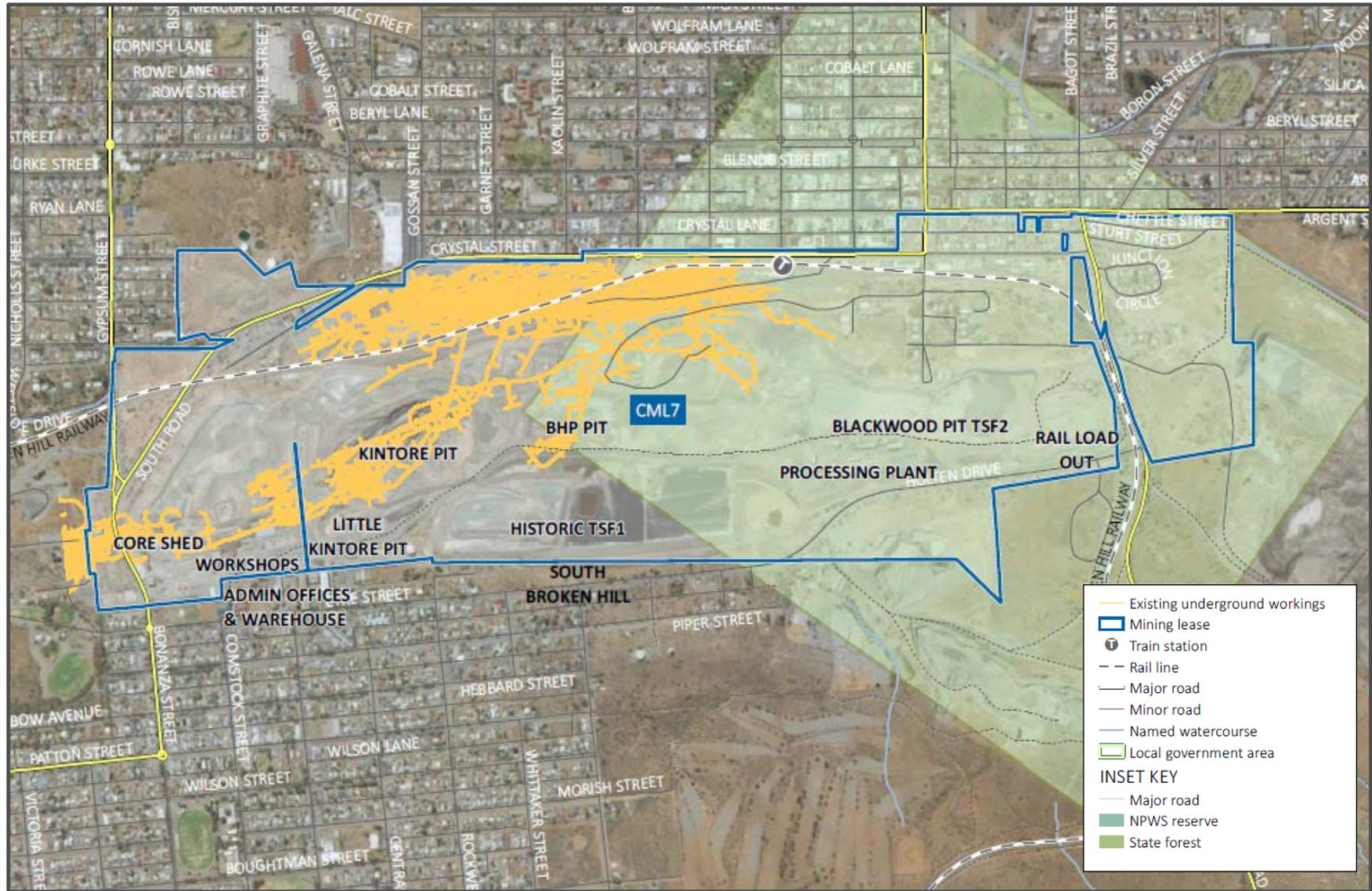


Figure 2 | Existing site layout and underground workings

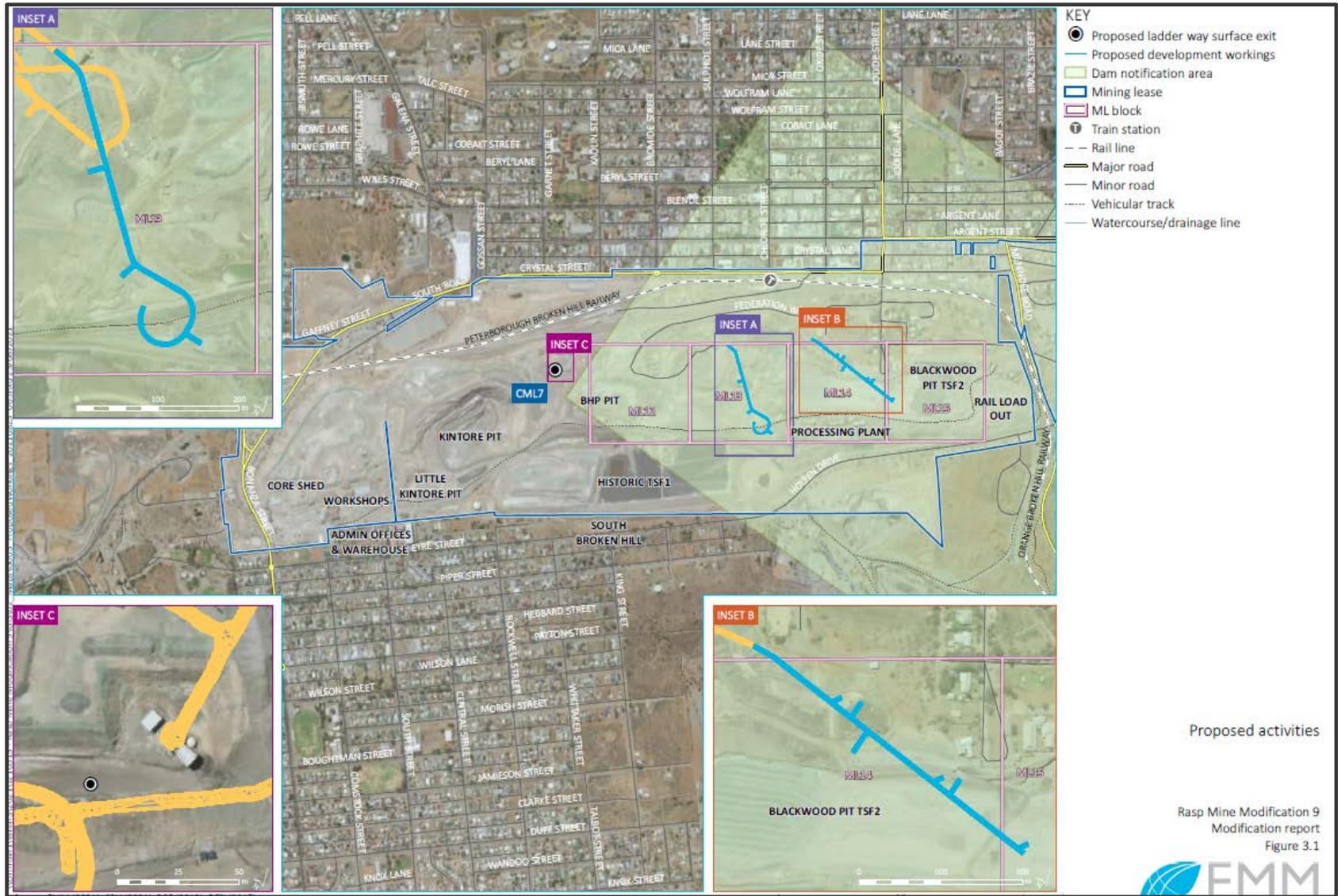


Figure 3 | Proposed development drives and EEL

3 Statutory context

3.1 Scope of modification

The project was originally approved under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Under clause 6 of Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*, the project was transitioned to State Significant Development by order, which took effect by publication in the NSW Government Gazette on 4 July 2018.

The modification application was lodged under Section 4.55(1A) of the EP&A Act, as a modification involving minimal environmental impact. The Department has reviewed the scope of the modification and considers that it meets this requirement as:

- there would be no change to key aspects of the project, including annual and total ore extraction;
- there would not be no significant change to the approved environmental impacts of the project; and
- there would be no additional surface disturbance outside areas already approved for disturbance.

Therefore, the Department is satisfied the proposed modification is within the scope of section 4.55(1A) of the EP&A Act.

3.2 Consent authority

The Minister for Planning is the consent authority for the modification application under Section 4.55 of the EP&A Act. However, under the Minister's delegation dated 26 April 2021, the Director, Resource Assessments, may determine the application. This is because BHOP has not made any reportable political donations, there were no objections from members of the public and Broken Hill City Council (Council) did not object to the proposal.

3.3 Mandatory Matters for Consideration

The Department has considered relevant required matters in accordance with section 4.15(1) of the EP&A Act including the objects of the Act, applicable environmental planning instruments, the likely impacts of the modification application, site suitability and the public interest. The Department has also considered the reasons for the granting of the original application in its assessment of the project and is satisfied that the proposed modification does not affect the decision that was previously made.

3.4 Impacts on Biodiversity Values

Under Clause 30A(2)(c) of the Biodiversity Conservation (Savings and Transitional) Regulation 2017, the Department considers that the proposed modification would not result in an increase in impacts on biodiversity values and is satisfied that a Biodiversity Development Assessment Report (BDAR) is not required to be submitted with the modification application.

4 Engagement

The Department is not required to notify or seek public submissions on the application because it involves minimal environmental impact. Nevertheless, the Department made the Modification Report available on its website and referred the application to relevant government agencies for comment.

No representations from members of the public were received and the advice received from government agencies (see **Appendix A2**) is summarised below.

The Department's Water Group (DPIE-Water) requested additional information regarding the predicted groundwater interception and water supply demands for the proposed modification to demonstrate that water take would be within the site's current water entitlement.

DPIE Water also provided other recommendations for BHOP to undertake post-determination, including updates to the Water Management Plan and accurate metering to inform the site water balance.

BHOP subsequently met with DPIE Water to discuss their approach assessing groundwater impacts and provided an additional assessment. These matters are further discussed in **Section 5**.

The **Resources Regulator** advised that the proposed modification has limited implications with regards to mine rehabilitation and noted that BHOP would be required to comply with rehabilitation requirements under the mining authorisation. Additionally, Resources Regulator advised that it may undertake assessments of BHOP's mining activities under work health and safety regulatory obligations.

The Environment Protection Authority (EPA) advised that the proposed modification would not require a variation to the sites' Environment Protection Licence (EPL) (EPL 12559) and that it had no further comments on the application.

Mining, Exploration and Geoscience within the Department of Regional NSW (MEG) and **Broken Hill City Council** (Council) raised no issues with the proposed modification.

5 Assessment

In assessing the merits of the modification application, the Department has considered the:

- modification application and supporting information;
- existing conditions of consent for the project;
- previous environmental assessments (EA) for the project;
- agency advice on the application;
- relevant environmental planning instruments, policies and guidelines; and
- requirements of the EP&A Act.

The Department considers the potential impacts associated with the proposed modification relate to underground development workings and amenity impacts from the construction of the EEL. The Department's consideration of these is provided in **Table 1** below.

Issue	Findings	Recommended Conditions
Geotechnical stability	<ul style="list-style-type: none"> • The location of the proposed development drives poses some geotechnical hazards due to their position partially below TSF2 (Blackwoods drive only – see Figure 3 Inset B) and historical workings (both drives). • Key potential hazards include: <ul style="list-style-type: none"> ○ liquefaction of tailings and damage to the TSF2 structure and spillway; and ○ water inrush from historical workings; • Potential instability was also identified in the upper section of the proposed EEL. • The Modification Report concluded that risks associated with the proposed development drives primarily relate to blast vibrations. However, BHOP advised that geotechnical risks would be minimal due to the size of pillars between development workings, TSF2 and historical workings. The Department’s assessment of blast impacts is considered further below. • BHOP advised that geotechnical probe drilling and monitoring would be undertaken in accordance with current site management protocols to detect and manage unexpected instability. • BHOP also propose to conduct a camera survey in the upper section of the proposed EEL location to confirm if any additional support is required. • MEG and Resources Regulator raised no issues regarding geotechnical stability. • The Department notes that mining operations and safety are regulated under the <i>Work Health and Safety (Mine and Petroleum Sites) Act 2013</i> and other Work Health and Safety legislation. • The Department considers that geotechnical risks associated with the proposed modification could be appropriately managed through careful design and control procedures. 	<ul style="list-style-type: none"> • No additional conditions required.

Issue	Findings	Recommended Conditions
Blasting	<ul style="list-style-type: none"> The proposed development drives involve the use of underground blasting methods, which has the potential to result in vibration impacts at sensitive receivers and infrastructure, including TSF2. A Blast Vibration Impact Assessment (BVIA) identified that average and peak ground vibration levels at all receivers would not exceed existing limits. Peak vibration impacts at TSF2 were predicted to be 1.2 mm/s, which is well below limits set by Dam Safety NSW for TSF embankments (ie 30 mm/s). BHOP advised that blasts required for the development drives require smaller charges than stope blasting and would be unlikely to affect sensitive receivers. BHOP propose to continue monitoring ground vibration impacts and modify blast design to ensure compliance with existing limits. Resources Regulator and EPA raised no concerns with the proposed blasting activities. Overall, Department considers that blasting associated with the proposed development drives could be safely managed under existing conditions of consent. 	<ul style="list-style-type: none"> No additional conditions required.
Noise	<ul style="list-style-type: none"> The construction of the EEL has the potential to increase noise emissions of the project and is proposed to be conducted 24 hours per day, for approximately 50 days. Pilot hole drilling and reaming were identified as the greatest potential noise sources, however, the works would be located in a bunded area (ie approximately 8 m high) which would mitigate noise impacts. Noise modelling concluded that additional noise generated during construction of the EEL would not result an exceedance of the existing noise limits specified in the consent for all periods. The EPA did not raise any concerns with the noise impacts of the proposed modification. BHOP propose to update the Noise and Blast Management Plan for its suitability to mitigate the noise impacts of the proposed works. 	<ul style="list-style-type: none"> Construction of the EEL to be permitted 24-hours per day, 7 days per week.

Issue	Findings	Recommended Conditions
	<ul style="list-style-type: none"> The Department considers that the noise impacts of the proposed modification are acceptable. 	
Water	<ul style="list-style-type: none"> Areas proposed for development workings have been previously dewatered and BHOP advise that there would be no additional impacts on the regional groundwater table. DPIE Water requested further analysis to demonstrate water take would remain within the site's existing entitlement and confirmation of water supply demands associated with the proposed modification. BHOP subsequently provided qualitative analysis of the site water balance which concluded that water usage required to carry out the proposed modification is 26.71 ML, which includes water for the EEL construction, dust suppression and development drilling. Incorporating existing activities, this would result in maximum water take of approximately 324 ML/year which is within the site's existing water entitlement of 370 ML/year. During the review of the site water balance, BHOP identified inconsistency in flow monitoring data, suggesting metering errors. The Department notes that these errors were accounted for in the water balance assessment, however, the Department agrees with DPIE Water that the water balance should be updated to include accurate water take and frequently reviewed against modelled predictions. 	<ul style="list-style-type: none"> The Department has recommended that BHOP provide detail of the methods to achieve accurate metering of water take in the site's Water Management Plan.
Waste and Health	<ul style="list-style-type: none"> Waste rock from development workings would be handled in accordance with existing site practices which includes preferential emplacement underground or testing the material for lead content prior to bringing it to the surface. Waste rock determined to have less than 0.5% lead content is permitted to be brought to the surface and is to be stored in approved locations. BHOP advise that proposed modification would not result in the exceedance of existing lead level criteria. 	<ul style="list-style-type: none"> No additional conditions necessary.

Issue	Findings	Recommended Conditions
Air Quality and Odour	<ul style="list-style-type: none"> • The proposed modification could generate some additional dust emissions as a result of: <ul style="list-style-type: none"> ○ the emplacement of waste rock on the surface; and ○ construction drilling of the EEL. • BHOP advise that these emissions would be negligible in comparison to existing operations. Additionally, BHOP advised that site dust suppression practices would be in place and construction drilling would be predominantly undertaken underground. • No exceedances of existing air quality criteria are predicted. • The EPA did not raise any concerns in relation to dust and dust emissions would continue to be regulated by the EPA under the sites' EPL. • The Department considers that the air quality impacts of the proposed modification are acceptable. 	<ul style="list-style-type: none"> • No additional conditions necessary.
Visual	<ul style="list-style-type: none"> • The proposed EEL would be located in an existing bunded area that is approximately 8 metres high and would not be visible from surrounding private receivers. 	<ul style="list-style-type: none"> • No additional conditions necessary.
Rehabilitation	<ul style="list-style-type: none"> • The proposed modification would not result in any changes to the approved conceptual final landform or rehabilitation methods. • Resources Regulator advised that there were limited implications of the proposed modification relating to rehabilitation. 	<ul style="list-style-type: none"> • No additional conditions necessary.
Biodiversity	<ul style="list-style-type: none"> • The proposed modification surface disturbance activities are within the approved disturbance footprint and therefore would not result in an increase in impact on biodiversity values. 	<ul style="list-style-type: none"> • No additional conditions necessary.

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 proposed modification seeks to undertake two additional development drives and to construct a replacement EEL to meet requirements of WHS legislation. The Department notes that the additional development drives would facilitate access to areas of potential future mineral extraction, which would be subject to future assessment and approval.

The Department considers that the proposed modification can be undertaken without any significant environmental impacts beyond those already assessed and approved, particularly as:

- geotechnical and blasting risks could be appropriately managed through careful design and control procedures;
- the site could continue to operate within its existing water entitlement and no changes to the regional groundwater table are anticipated; and
- noise, air and visual impacts would be negligible.

The Department has recommended minor updates to the conditions of consent and considers that the impacts of the proposed modification can be adequately managed and mitigated by the existing and updated conditions.

The Department has also updated incident reporting conditions consistent with contemporary requirements and administrative arrangements.

Overall, the Department considers that the proposed modification is in the public interest, and should be approved, subject to conditions.

7 Determination

The Department has drafted an Instrument of Modification (see **Appendix B**) for the proposed modification, as well as a consolidated version of the consent as modified (see **Appendix C**).

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 07_0018-MOD 9 falls within the scope of section 4.55(1A) of the EP&A Act;
- **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 07_0018;
- **signs** the attached approval of the modification (**Appendix B**).

Recommended by:



17.12.21

Kiran Ashby
Planning Officer
Resource Assessments

Recommended by:



22.12.21

Gen Lucas
Team Leader
Resource Assessments

The recommendation is **Adopted** by:



23/12/2021

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

Appendices

Appendix A – List of referenced documents

A1 – Modification Report

<https://www.planningportal.nsw.gov.au/major-projects/project/42236>

A2 – Submissions

<https://www.planningportal.nsw.gov.au/major-projects/project/42236>

A3 – Submissions Report

<https://www.planningportal.nsw.gov.au/major-projects/project/42236>

Appendix B – Notice of Modification

<https://www.planningportal.nsw.gov.au/major-projects/project/42236><https://www.planningportal.nsw.gov.au/major-projects/project/42236>

Appendix C – Consolidated Consent

<https://www.planningportal.nsw.gov.au/major-projects/project/42236><https://www.planningportal.nsw.gov.au/major-projects/project/42236>