



Rasp Mine

Modification 7

(Additional Crushing and Screening)

*State Significant
Development
Modification Assessment
(07_0018 MOD 7)*



July 2019

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Cover photo

Broken Hill Old Junction Mine (2018)

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1. Introduction

1.1 Background

Broken Hill Operations (BHO), a wholly owned subsidiary of CBH Resources, owns and operates the Rasp Mine, an underground zinc, lead and silver mine located centrally within the City of Broken Hill.

Mining has occurred almost continually at the Rasp Mine since the 1880s. The site and surrounds are dominated by mining infrastructure, including historic mining buildings and structures. The area surrounding the site has also been shaped by mining activities and includes a range of infrastructure, commercial and residential developments immediately adjacent to the mine (see **Figure 1**).

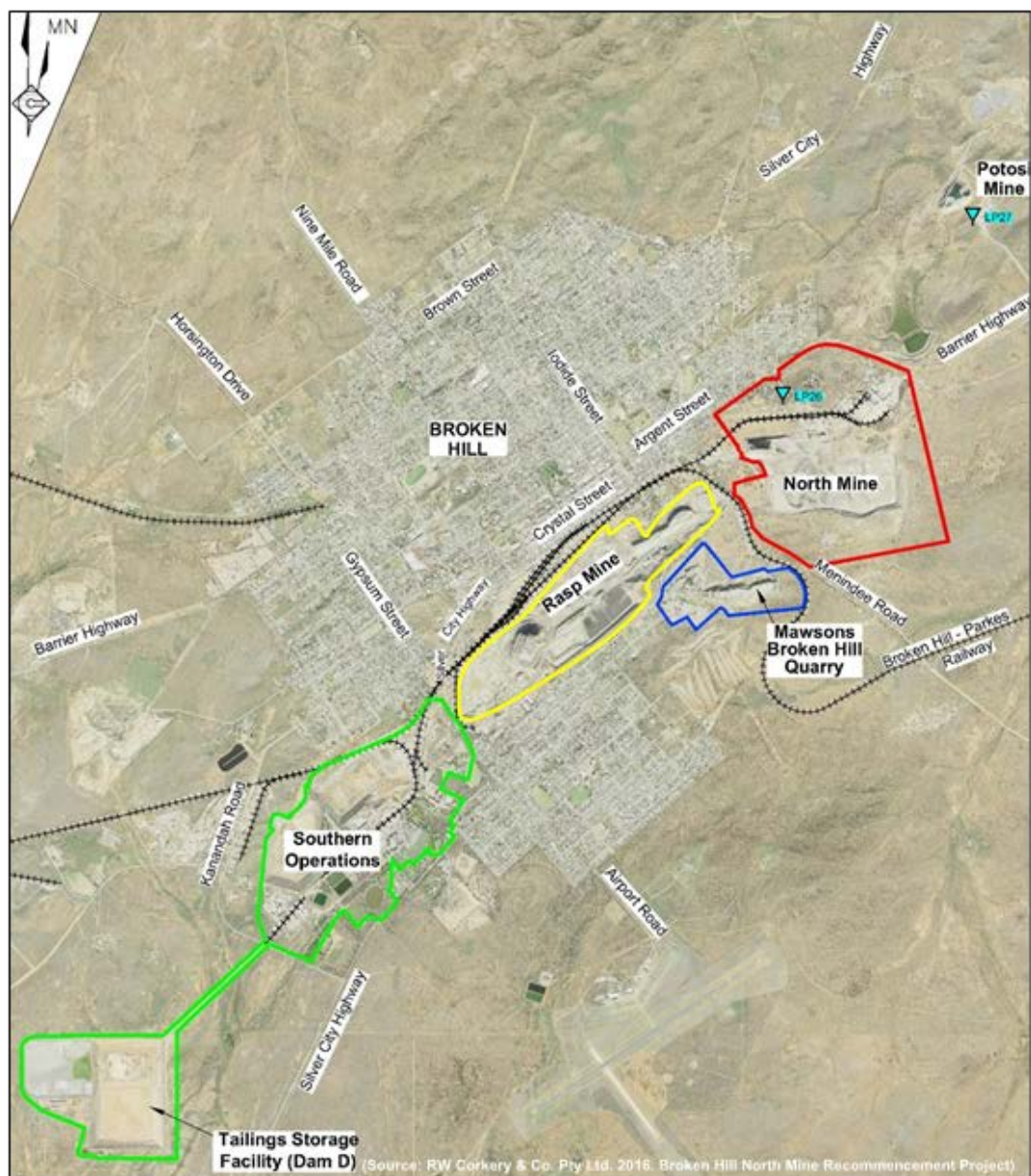


Figure 1 | Location of the Rasp Mine.

1.2 Approved Project

BHO purchased the Rasp Mine in 2001 and operates the mine under a Ministerial approval granted in January 2011. This approval has been modified five times, and allows BHO to:

- extract 750,000 tonnes (t) of ore per year until 31 December 2026, and no more than 8,450,000 t in total;
- process ore at the on-site processing plant;
- operate 24 hours a day, 7 days a week; 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 numerous 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.

Tailings and Waste Management

In accordance with the existing approval, BHO is allowed to:

- store tailings material generated from the ore processing at a historic Tailing Storage Facility (TSF1) and Blackwood Pit – TSF2 (TSF2);
- backfill underground voids with tailings and waste rock; and
- use waste rock material with less than 0.5% lead content for road repair and bunding within the project area, and for rehabilitation and closure of the site.

Following on Modification 4 (MOD 4) project approval, BHO is allowed to conduct crushing and screening activities in Kintore Pit and to use the stored waste rock material in Kintore Pit for increasing the capacity of TSF2 from 4 to 5 million t by constructing three embankments and a retaining wall at low points along its perimeter.



2. Proposed Modification

BHO proposes to revise its approved project to optimise the TSF2 embankment construction by temporarily operating a mobile crushing and screening plant either in the BHP Pit or in the already approved location of Kintore Pit, at any given time but not concurrently at the two locations (see **Figure 2**).

The proposed modification is described in detail in the modification report (see **Appendix B**), BHO's additional information (see **Appendix C**), and summarised below.

2.1 Construction material for Blackwood Pit TSF2 embankment

BHO seeks to modify the existing project approval to temporarily source the required waste rock material for construction of the TSF2 embankments from the BHP Pit, instead of Kintore Pit. This is because BHP Pit is closer to the embankment construction area and would shorten the overall truck haulage time between the two sites by about 1 km (see **Figure 2**). The reduced haulage distance would shorten the construction time and enable BHO to use more trucks each day for transporting the material; and in turn, would reduce the associated construction costs.

It was previously estimated in MOD 4 that a total of approximately 140,000 t of material would be required for this construction work. The stored waste rock material in BHP Pit as excess from underground mine workings is estimated as 180,000 t. Consistent with the MOD 4 approval, it is proposed to utilise the material with less than 0.5% lead content for the TSF2 embankment construction. BHO expects that BHP Pit material would be sufficient for TSF2 embankment construction; and would only source the required waste rock material with less than 0.5% lead content from Kintore Pit, if the BHP Pit material was identified as insufficient.

2.2 Crushing and screening activities within BHP Pit

To prepare the waste material in BHP Pit for TSF2 embankment construction, BHO is proposing to temporarily operate a mobile crushing and screening plant in the BHP Pit, instead of the approved location of Kintore Pit under MOD 4.

The waste rock would be screened to separate the material with less than 0.5% lead content and then crushed to sub-50 mm to be used for road capping, and to sub-200 mm for embankment construction. For this purpose, BHO proposes to create three stockpiles within BHP Pit: Stockpile 1 for untested material, Stockpile 2 for material with less than 0.5% lead content (suitable for crushing and screening activities and embankment construction), and Stockpile 3 for material with lead content of more than 0.5% (to be returned to the deeper section of BHP Pit and capped).

Crushing in BHP Pit is proposed when the waste rock material is identified as larger than 200 mm and anticipated to occur over up to 12 days of the estimated total TSF2 embankment construction period of 18 weeks.

The proposed crushing and screening activities involve use of a dozer and excavator located at a depth of 15 m below surface in BHP Pit, instead of the currently approved location in Kintore Pit at a depth of 70 m below surface. Unlike Kintore Pit, the proposed crushing, screening and associated transport activities within BHP Pit would be conducted at the same level that the waste rock material is stored.

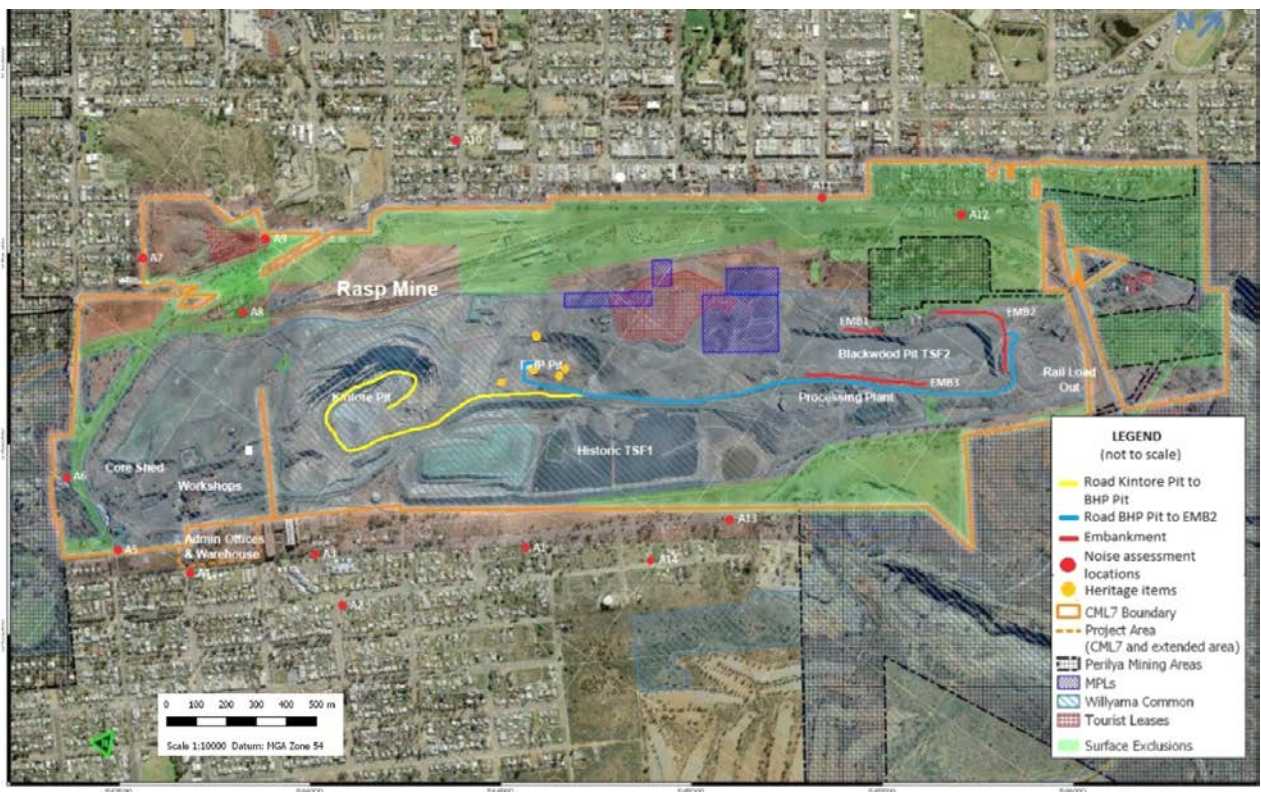


Figure 2 | Layout of the Rasp Mine and Proposed Modification.



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 (SSD) by order, which took effect by publication in the NSW Government Gazette on 4 July 2018.

A modification application under Section 4.55 (1A) for a modification involving minimal environmental impact was submitted to the Department of Planning, Industry and Environment (the Department) on 28 June 2019.

The Department considers that the application can be characterised as a modification involving minimal environmental impact, as the proposal:

- would not significantly increase the environmental impacts of the project as approved;
- is substantially the same development as originally approved in 2011 prior to transition from Part 3A; and
- would not change the approved mining areas, mining, processing or transport methods.

Consequently, the Department considers that 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 and Public Spaces (the Minister) is the consent authority for the modification application. However, under the Minister's delegation dated 11 October 2017, the Director, Resource Assessments, may determine the application. This is because BHO has not made any reportable political donations, Broken Hill City Council did not object to the proposal, and there were no objections from the community.



4. Engagement

In accordance with the requirements for 4.55(1A) modification involving minimal impact, the proposal was not formally exhibited. Nevertheless, the Department referred the modification application to key government agencies for advice and made it publicly available on its website from 1 July 2019.

The Department received advice from five government agencies, none of which objected to the proposal. A copy of the agency advice is available in **Appendix D**, and a summary of the agency advice is provided below.

The **Resources Regulator** (RR) within the Department questioned the adequacy of the adopted 0.5% lead content criterion for the waste rock material required for the embankment construction. The Department notes use of this criterion was assessed and approved in MOD 4, and that this criterion is referenced in BHO's approved Mining Operation Plan, and Environment Protection Licence, issued by the **Environment Protection Authority** (EPA). This issue is to be addressed through the mine's broader rehabilitation strategy context, which is being assessed by BHO in consultation with the key agencies and Broken Hill Rehabilitation Steering Committee.

The Department's **Division of Resources and Geoscience** (DRG) noted that the application does not propose any changes to the approved mining and ore processing methods, extraction rate, mine life or mineral

resources/ore reserves, and was satisfied that the modification can be effectively managed through the existing conditions of the project approval. It also noted that this modification would improve environmental outcomes of the project in relation to noise and dust.

The Department received advice from **Broken Hill City Council** (Council), EPA, and **Heritage Division** within the NSW Department of Premier and Cabinet, which raised no concerns and made no recommendations about the proposed 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, as set out in section 4.15(1) of the EP&A Act.

A list of the key documents that informed the Department's assessment are provided in **Appendix A** and **Appendix C**.

Given the close proximity of the Rasp Mine to surrounding receivers, the key issues concerning the proposed modification relate to any potential incremental noise and air quality impacts from operating the crusher in BHP Pit, instead of Kintore Pit.

5.1 Noise

Noise impacts from crushing and screening in Kintore Pit and relevant mitigation measures were assessed and approved in MOD 4. The only change to the approved BHO activities as a result of this proposal is to relocate waste rock crushing and screening from Kintore Pit to BHP Pit and allow for these activities to occur in either BHP Pit or Kintore Pit.

BHO included a noise assessment in its modification application, which found that total noise from the proposed modification and TSF2 embankment construction would result in up to 2 dB increase in noise for most of the sensitive receivers compared to MOD 4.

It is noted that an increase of 2 dB is generally indiscernible to humans and would only occur for short-term during the standard construction hours (up to 12 days within the estimated 18 weeks to complete TSF2 embankment construction).

The Department has assessed the noise associated with the proposed modification against the *Interim Construction Noise Guideline* (ICNG) and the existing project approval, which set a framework for dealing with noise generated by construction and atypical activities that are discrete and short-term in nature and may exceed the limits in the existing approval.

Noise management and mitigation

Consistent with the existing project approval and requirements of the ICNG, the proposed crushing and screening activities would be limited to the approved construction hours of 7 am to 6 pm Monday to Fridays, 8 am to 1 pm Saturdays, and no works on Sundays or public holidays.

Summary

The Department has recommended additional conditions requiring BHO to notify the Department prior to commencement and upon completion of crushing and screening activities associated with construction of TSF2

embankments, minimise the noise generated by the proposed crushing and screening activities in accordance with the best practice requirements outlined in the ICNG, and ensure that the noise generated by the development would not cause exceedances of the amenity noise criteria of 65 dB(A) $L_{Aeq(day)}$ specified for an urban/industrial interface area in the *NSW Industrial Noise Policy* (INP). These conditions ensure construction noise is appropriately managed.

Consequently, the Department considers that relocation of the crusher to BHP Pit would not significantly increase noise impacts during construction of the TSF2 embankments.

5.2 Air Quality

Dust and diesel emissions would be generated during the proposed modification, including crushing and screening activities using a dozer to reclaim material, an excavator to manage product stockpiles and crusher within BHP Pit, trucking the material from BHP Pit to TSF2, and TSF2 embankment construction works.

The Department notes that BHP Pit is more centrally located and closer to the TSF2 (see **Figure 2**) and the proposed activities in BHP Pit:

- would be conducted at the same level that the waste rock material is stored, which would improve the efficiency and avoid additional transport and double-handling of the required feed material and product stockpiles;
- would shorten the associated truck haulage route by about 1 km (1.6 km as opposed to 2.5 km); and
- would reduce the annual and worst case 24-hour particulate matter emissions associated with truck haulage of waste rock by about 50%, compared to the estimated emissions for the same activities that were approved to be undertaken in Kintore Pit.

Dust management and mitigation

The existing dust mitigation measures would continue to apply for the proposed modification activities, including:

- real-time dust monitoring and an automatic alarm system to inform BHO when dust levels are approaching the relevant criteria;
- restrictions on dust-generating activities during adverse meteorological conditions; and
- use of water trucks and in-situ and mobile water sprays for dust management, including chemical suppressants on unsealed haul roads and “free areas”.

Furthermore, BHO proposes an additional mitigation measure by installing water sprays on the mobile crusher and managing dust generated from material reclaim and stockpiles using 15,000 L water tanks.

Summary

The Department notes that the proposed modification seeks to temporarily relocate undertaking of the approved activities following MOD 4 approval from Kintore Pit to BHP Pit, and that it would not change the nature or methods of the already approved activities.

With the proposed dust mitigation measures and requirements of the existing approval, the Department considers that the proposed modification would not increase air quality impacts above those already assessed and approved at the mine.

5.3 Other Issues

Table 1 summarises the Department’s consideration of other issues related to the modification.

Table 1 | Assessment of other issues

Issue	Consideration	Recommendation
Heritage	<ul style="list-style-type: none"> Two State heritage items near BHP Pit are the <i>Broken Hill Railway Station and yard group</i> (SHR 01101) and <i>BHP Chimney Ruin of First Offices</i> (SHR 01820), which are substantially separated from the proposed activities and would not be impacted. There are some remnants from historic mining within the already active BHP Pit that are listed as heritage items in the <i>Broken Hill Local Environmental Plan 2013</i>. The local heritage items within BHP Pit are 25 m away from the proposed crushing and screening activities, are protected by fencing and use of signage, and would not be impacted. The City of Broken Hill is listed on the National Heritage Register for its history as a mining city. The proposed modification would occur on disturbed mine land and would have no impact on the national heritage values of the city. Under the existing approval, BHO is required to protect the heritage items within the project area, cease works and notify the Heritage Division if any unexpected historic archaeological relics are identified, and review and revise its Conservation Management Plan following the approval of any modification. The Department, Council and Heritage Division consider that the requirements of the existing approval would mitigate any potential heritage impacts. 	<ul style="list-style-type: none"> Comply with existing conditions.
Water	<ul style="list-style-type: none"> The proposed crushing and screening activities are within the controlled drainage system of the mine. The existing stormwater management and collection system would accommodate operation of the modified project. 	<ul style="list-style-type: none"> Comply with existing conditions.
Visual and Land Disturbance	<ul style="list-style-type: none"> The proposed new location for the crusher in BHP Pit is within a previously disturbed and cleared land within the project area and no additional disturbance or vegetation clearing would be required. The proposed crushing and screening activities on BHP Pit would not be visible from sensitive viewing locations. Under the existing approval, BHO is required to minimise the visual impacts of the project. The Department considers that the proposed modification would be consistent with the character of the existing site and would not result in any significant additional visual amenity impacts. 	<ul style="list-style-type: none"> Comply with existing conditions.
Biodiversity	<ul style="list-style-type: none"> The proposed new location for the crusher in BHP Pit is within a highly disturbed and cleared land within the project area. The proposal would not require clearing of any native vegetation and would not impact the habitat of any threatened species. The Department is satisfied that the proposed modification would not increase the impact on biodiversity values and the proposal does not trigger the requirements for a Biodiversity Development Assessment Report under the <i>NSW Biodiversity Conservation Act 2016</i> (BC Act). 	<ul style="list-style-type: none"> Comply with existing conditions.
Rehabilitation	<ul style="list-style-type: none"> The existing approval requires BHO to progressively rehabilitate the project site and review and revise the project's Rehabilitation Management Plan following a modification to the project approval. In a broader context, the Department also notes that BHO is in the process of developing a Rehabilitation Strategy for the Rasp Mine in consultation with key government agencies and Broken Hill Rehabilitation Steering Committee. 	<ul style="list-style-type: none"> Comply with existing conditions.



6. Evaluation

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

Use of the mobile crushing plant and material screening in Kintore Pit were previously approved in MOD 4, and are proposed to occur in either BHP Pit or Kintore Pit in this modification application. Undertaking of the proposed crushing and screening activities in BHP Pit would be part of the mine’s construction work and would not require any additional plant or equipment, land disturbance, vegetation clearing or site preparation. Furthermore, BHP Pit site is more centrally located within the current disturbance footprint, would reduce associated truck haulage route and air quality impacts, and would not significantly increase noise impacts compared to MOD 4.

The Department also notes that BHO is already required to review and revise its environmental monitoring program and environmental management plans, following any modifications to its existing approval. With the proposed dust mitigation measures, the Department considers that the proposed modification can be undertaken with minimal incremental impact on the environment or surrounding residences, compared to the approved project.

Consequently, the Department considers that the proposed modification is in the public interest, and recommends that it should be approved, subject to the revised conditions.



7. Recommendation

The Department has drafted a Notice of Modification (see **Appendix E**) for the proposed modification, as well as a consolidation version of the project approval as modified (see **Appendix F**).

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

- **considers** the findings and recommendations of this report;
- **determines** that the application (07_0018 MOD 7) 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 grant approval to the application;
- **modifies** the approval (07_0018); and
- **signs** the attached modification of approval (**Appendix E**).

Recommended by:

M. Mazaheri 26/7/19

Mandana Mazaheri

Senior Environmental Assessment Officer
Resource Assessments



8. Determination

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

29/7/19

Steve O'Donoghue

Director
Resource Assessments



Appendices

Appendix A – List of Documents

Broken Hill Operations (April 2017) *Environmental Assessment – Modification 4, Concrete Batching Plant Blackwood Pit TSF2 Extension*.

Broken Hill Operations (June 2017) *Response to Submissions – Modification 4, Concrete Batching Plant & TSF2 Extension*.

Appendix B – Modification Report

Appendix C – Additional Information

Appendix D – Agency Advice

Appendix E – Notice of Modification

Appendix F – Consolidated Approval

See the Department's website and search for "Rasp Mine" at:

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