

ASSESSMENT REPORT

RASP ZINC-LEAD-SILVER PROJECT 24 Hour Crusher Modification (07_0018 Mod 2)

1 BACKGROUND

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

Mining on the site has occurred almost continually since the 1880's. Mining activities have significantly altered the natural landscape of the site, and influenced the area immediately surrounding the site, which is dominated by infrastructure, commercial and residential land uses (see Figure 1).



Figure 1: The Rasp Mine

The Rasp Mine operates under a project approval (PA 07_0018) granted by the Director-General, as delegate of the Minister for Planning and Infrastructure, on 31 January 2011. This approval has been modified once (in 2012), and allows BHO to:

- extract up to 750,000 tonnes of ore a year for 16 years (until 31 December 2026);
- extract a maximum of 8.45 million tonnes of ore over the life of the project;
- carry out mining operations 24 hours a day, 7 days a week, including:
 - crushing between 7:00 am and 7:00 pm;
 - shunting of concentrate wagons between 7:00 am and 6:00 pm; and
 - blasting between 6:45 am and 7:15 pm; and
- transport ore concentrate by rail to the port of Newcastle.

Since commencing operations under PA 07_0018, BHO has identified that the constraints on crushing hours have led to periods where insufficient crushed ore is available to continuously operate the processing plant. The location of the crusher is shown in Figure 2.

2 PROPOSED MODIFICATION

The proposed modification involves changing the approved operating hours of the crusher to 24 hours a day, to generate enough crushed ore to enable continuous operation of the processing plant (which is allowed under the existing approval). BHO does not propose to increase the amount of ore extracted each year, and there would be no change to the operating hours of shunting and blasting activities.

In addition, BHO's modification application initially sought approval to transport up to 60,000 tonnes of low grade ore via road for processing at an offsite facility each year. However, BHO has since removed this aspect of its application due to the need to carry out further environmental assessment.

The modification is described in full in the Environmental Assessment (EA) and BHO's Response to Submissions report (RTS) (see **Appendices C and E**).

3 STATUTORY CONTEXT

3.1 Section 75W

The Rasp Project was approved under the former Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Although Part 3A was repealed on 11 October 2011, the project remains a "transitional Part 3A project" under Schedule 6A of the EP&A Act. The proposed modification may therefore be considered under Section 75W of the EP&A Act, in accordance with the relevant savings provisions.

3.2 Approval Authority

The Minister for Planning is the approval authority for the modification application. However, under the Minister's delegation of 14 September 2011, the Executive Director, Development Assessment Systems and Approvals, may determine the application. This is because Broken Hill City Council did not object to the proposal, BHO has made no reportable political donations, and less than 25 public submissions on the proposal were received during the public exhibition.

3.3 Modification

The Department is satisfied that the proposal can be characterised as a modification to the project approval because, with the exception of the extended operating hours of the crusher, all operations on site would remain substantially the same as currently approved. Additionally, there would be no increase to the amount and rate of ore extracted, processed and transported on site in any given year. Consequently, the Department is satisfied that the proposed modification is within the scope of Section 75W of the EP&A Act.



Figure 2: Location of the Crusher and Representative Receivers

3.4 Environmental Planning Instruments

BHO has considered the relevant environmental planning instruments in the EA and the Department is satisfied that none of these instruments substantially govern the carrying out of the proposal.

4 CONSULTATION

The Department exhibited the application from 8 February until 24 February 2014, and made the EA publicly available on its website, at its Information Centre and at Broken Hill City Council.

The Department received submissions from 6 government agencies and 2 community members. A summary of issues raised in submissions is provided below, and full copies are included in **Appendix D**.

24 Hour Crusher Operations (Noise Impacts)

None of the submissions objected to BHO's proposal to operate the crusher 24 hours a day.

The **Environment Protection Authority** (EPA) and **Broken Hill City Council** (Council) submissions noted the noise from the existing operations were above the noise criteria in the project approval, and were concerned with the potential additional noise impacts from night time operation of the crusher.

The EPA sought a revised noise assessment to fully assess cumulative noise impacts and to identify appropriate noise mitigation and management measures for both existing and proposed operations. Council also requested that BHO undertake monitoring at additional receiver locations, and that the proposed modification not be approved unless all existing operations were compliant.

In response, BHO completed additional attended noise monitoring and assessment to the satisfaction of the EPA. BHO also agreed to the EPA's request for quarterly noise monitoring to validate the results of the assessment if the modification is approved. The EPA has also advised the Department of its intention to place a Pollution Reduction Program (PRP) on the mine's Environment Protection Licence (EPL) to address noise compliance issues more broadly.

Trucking of Low Grade Ore

The **Roads and Maritime Services** (RMS) submission and both community submissions objected to BHO's proposal to transport low grade ore via road, and the EPA and Council also raised significant concerns about trucking of the ore.

However, as BHO has removed its request to transport low grade ore via road this matter has not been considered further in the assessment.

The **Department of Primary Industries** (DPI), the **Division of Resources and Energy** (DRE) and the **Office of Environment and Heritage** (OEH) raised no issues and made no recommendations about any aspect of the proposed modification.

5 ASSESSMENT

In assessing the merits of the proposal, the Department has considered:

- the EA for the original project;
- the existing conditions of approval;
- the EA for the modification, submissions and RTS;
- relevant environmental planning instruments, policies and guidelines; and
- the objects of the EP&A Act.

Based on its assessment, the Department identified noise emissions as the key issue associated with the proposed modification.

All other potential issues have been reviewed by the Department and are considered to have negligible environmental impacts over and above those already assessed and approved for the project, and do not warrant discussion in this report or further management measures or amendments to the conditions.

Noise Impact Assessment

An assessment of the noise impacts of the proposed modification was undertaken by EMGA Mitchell McLennan (EMM) and includes:

- predictive noise modelling of the operations including the night time crushing; and
- attended noise monitoring of existing operations and a trial of night time operation of the crusher.

The project approval sets operational noise criteria at 14 representative receivers surrounding the site (see Figure 2), with the existing night time operational noise limits at these locations either 35 or 39 dB(A) $L_{eq, 15 \text{ min}}$ as shown in Table 1.

Table 1: Night Time Operational Noise Criteria

Location	Criteria (dB(A) $L_{eq, 15 \text{ min}}$)
A1 – Piper Street North	35
A2 – Piper Street Central	
A7 – Carbon Street	
A10 – Barnet and Blende Streets	
A13 – Eyre Street North 2	
A14 – Piper Street North	
A3 – Eyre Street North	39
A4 – Eyre Street Central	
A5 – Eyre Street South	
A6 – Bonanza and Gypsum Streets	
A8 – South Road	
A9 – Crystal Street	
A11 – Crystal Street	
A12 – Crystal Street	

Predictive Noise Modelling

Modelling accounted for all existing noise sources on site and additional noise from night time operation of the crusher, which also included operation of the front end loader on the run-of-mine (ROM) pad adjacent to the crusher.

Under worst case meteorological conditions, the noise modelling predicts that the operation of the crusher during the night, in combination with the approved mining operations, would not exceed BHO's operational noise criteria at any representative receiver (see Table 2).

The noise assessment also modelled potential impacts on sleep disturbance, which found that the noise generated by the modified operations would not exceed the minimum assumed criteria of 45 dB(A) L_{max} .

Table 2: Modelled Night Time Noise Impacts

Receiver	Night Time Operational Noise $L_{eq, 15 \text{ min}}$	
	Criteria	Predictive Modelling
A1 – Piper Street North	35	35
A2 – Piper Street Central		
A7 – Carbon Street		
A10 – Barnet and Blende Streets		
A13 – Eyre Street North 2		
A14 – Piper Street North	39	38
A3 – Eyre Street North		35
A4 – Eyre Street Central		
A5 – Eyre Street South		
A6 – Bonanza and Gypsum Streets		
A8 – South Road		
A9 – Crystal Street		
A11 – Crystal Street		39
A12 – Crystal Street		

Attended Noise Monitoring

To confirm the modelling predictions for the operation of the crusher, BHO also carried out attended noise monitoring at night during 3 trial periods between September 2013 and March 2014. Each trial lasted 4 or 5 consecutive days and included various operating scenarios and meteorological conditions. The attended monitoring locations are shown in Figure 3 and include additional monitoring locations (shown in pink in Figure 3).

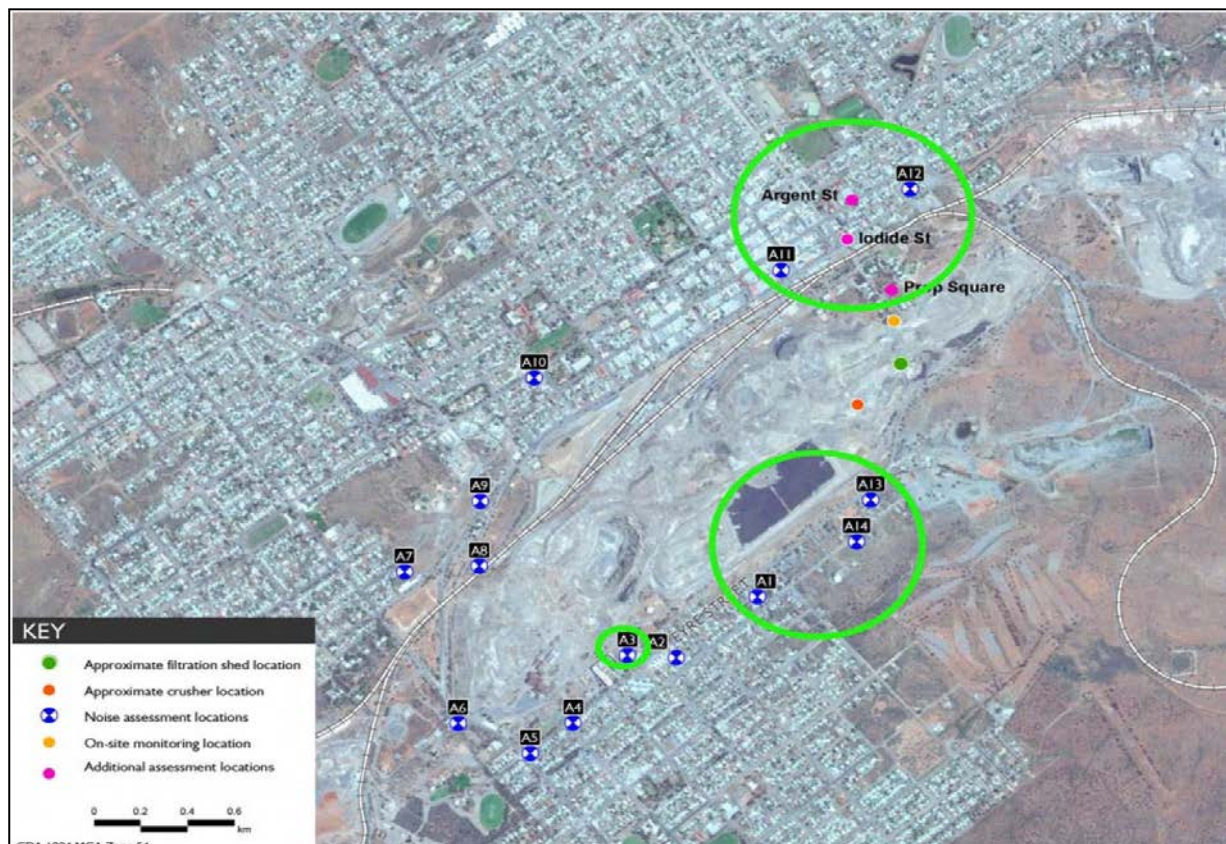


Figure 3: Attended Monitoring locations

The monitoring results from each trial period indicate that noise from the crusher did not significantly increase existing noise emissions from the site, which confirms the modelling results.

However, the monitoring also identified audible noise from other elements of the mine, specifically the filtration shed and haul trucks, which exceeded the criteria by 1-2 dB at four attended monitoring locations (see Table 3).

Table 3: Predicted Night Time Noise Impacts and Attended Monitoring Results

Receiver	Night Time Operational Noise $L_{eq, 15 \text{ min}}$		
	Criteria	Predictive Modelling	Attended Monitoring
A1	35	35	35 – 36
A13	35	35	34
A14	35	35	37
A3	39	38	<33
A11	39	35	39
A12	39	39	38 – 40
#Iodide Street	39	-	40 – 41

Additional monitoring location for which noise criteria is assumed.

With regard to the measured exceedances, the Department notes that BHO implemented a number of noise management and mitigation measures based on the results of the trial periods, including:

- redesigning pipework within the filtration shed, and installing a tyre wall around the structure to provide attenuation;
- extending the length and height of existing noise bunds along the southern haul road;
- optimising haul truck speed and gear changing;
- training of plant and equipment operators;
- installing noise abatement material in the crusher building; and
- maintaining the crusher bin volume to reduce noise from rockfall.

The Department notes that the implementation of these management and mitigation measures has reduced noise emissions from approved operations by up to 5 dB.

Additionally, the EPA has advised that it intends to place a PRP on BHO's EPL. This will require quarterly monitoring of the mine's operations, and require BHO to implement additional measures to reduce operational noise, where possible.

The Department notes that the elevated noise levels from other parts of the site is a compliance matter, and is satisfied that a PRP is the most appropriate means of reducing operational noise from the mine over time.

Based on these results, both the Department and the EPA are satisfied that the night time operation of the crusher would not significantly affect the amenity of nearby residents, and would not be discernable from the existing noise generated by the mine.

6 RECOMMENDED CONDITIONS

The Department has drafted a recommended notice of modification (see **Appendix A**) for the proposal as well as a consolidated version of the project approval as modified (see **Appendix B**).

These conditions allow BHO to operate the crusher 24 hours a day, 7 days a week. The Department has also taken the opportunity to update the agency names in the project approval.

BHO has reviewed the proposed conditions and has raised no objections.

7 CONCLUSION

The Department has assessed the modification application and supporting information in accordance with the relevant requirements of the EP&A Act.

The Department acknowledges that the proposed modification would allow the site to operate more efficiently, preventing a shortfall in the ongoing supply of crushed ore to the processing plant.

The Department's assessment has shown that the proposed modification would not result in any significant environmental impacts. Additionally, the Department acknowledges that as a result of the 3 trial periods, BHO has reduced noise emissions from approved operations by up to 5 dB and it has identified areas of the operations that can be managed to further reduce noise impacts on surrounding receivers.

Consequently, the Department believes that the proposed modification is in the public interest, and should be approved.

8 RECOMMENDATION

It is RECOMMENDED that the Executive Director, Development Assessment Systems and Approvals, as delegate of the Minister:

- **consider** the findings and recommendations of this report;
- **determine** that the modification falls within the scope of section 75W of the Act;
- **approve** the application under section 75W, subject to conditions; and
- **sign** the notice of modification in **Appendix A**.



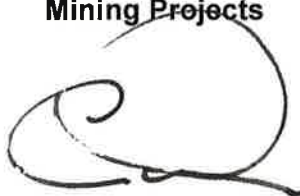
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APPENDIX A: NOTICE OF MODIFICATION

APPENDIX B: CONSOLIDATED PROJECT APPROVAL

APPENDIX C: ENVIRONMENTAL ASSESSMENT

APPENDIX D: SUBMISSIONS

APPENDIX E: RESPONSE TO SUBMISSIONS