



Rasp Mine

Zinc – Lead – Silver Project
Project Approval No. 07-0018

Response to Submissions Modification 4 Concrete Batching Plant & TSF2 Extension

June 2017

Broken Hill Operations Pty Ltd
BROKEN HILL



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1 Background

Broken Hill Operations Pty Ltd, a wholly owned subsidiary of CBH Resources Ltd, is seeking approval from the Minister of Planning for a minor modification to its Rasp Mine PA 07_0018 under Section 75W of the EP&A Act to:

- install a Concrete Batching Plant (CBP) for the manufacture of fibrecrete and concrete for use at the Mine site, and
- extend the life of the Blackwood Pit Tailings Storage Facility (TSF2) by installing embankments and a retaining wall at low points along its perimeter.

The Modification is considered minor as:

- it does not change the current approved mining or production rates;
- it requires a minimum change to the Mine footprint (0.2 ha);
- it would result in potential impacts (predominantly from construction works) over a very short time span (15 months);
- the results of impact assessments, including those conducted by a range of specialist consultants, have found there are no significant impacts to the environment or community for health, noise, air quality, heritage, water seepage, surface water or visual amenity; and
- the changes to surface structures and landform would be consistent with the current mining landscape of Broken Hill.

An Environment Assessment (EA) providing a detailed description of these modifications and potential environmental impacts was placed on public exhibition by the Department of Planning and Environment (DP&E) from 22 April to the 11 May 2017. During this period, government agencies, non-government organisations, businesses and members of the public were invited to provide submissions on the EA to the DP&E.

Following exhibition of the EA, the DP&E received nine submissions, eight from government agencies and one from a community member.

2 Government Agency Submissions

Government agency submissions were received from:

- NSW Department of Transport, Roads and Maritime Services (RMS)
- Broken Hill City Council (BHCC)
- NSW Office of Environment and Heritage (OEH)
- NSW Heritage Division (HD)
- Division of Resources and Geoscience (DRG)
- Department of Primary Industries (including Lands and Water (DPI))
- NSW Health – Western NSW Local Health District (NSW Health)
- Environment Protection Authority (EPA)



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The matters raised in these submissions are summarised in **Table 1.1**.

3 Community Submissions

There was one anonymous community submission received.

The matters raised in this submission are summarised in **Table 1.1**.

Table 1.1 Summary of Matters Raised

Government Agency	Impact to Heritage Items	Construction Work	Air Quality	Noise	Water	Other	None
RMS							✓
BHCC		✓		✓			
OEH	✓						
HD	✓						
DRG						✓	
DPI					✓		
NSW Health			✓			✓	
EPA			✓	✓			
Community					✓	✓	

Matters raised in the 'other' category included comments on requirements for amending the MOP, underground backfill material, TSF failure assessment and purpose of the Modification.

4 BHOP's Response to Submissions

The following outlines BHOP's response to the submissions.

(1) Submission by NSW Roads and Maritime Services

The Department of Roads and Maritime Services (RMS) has indicated that it will not object to the proposed development.

BHOP Response:

Noted.



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(2) Submission by Broken Hill City Council

The Broken Hill City Council has indicated that the main issues of potential concern have been suitably addressed in the information submitted in the Modification Application and has requested consideration to inclusion of the following items for consent conditions:

- That a Construction Environment Management Plan be implemented and adhered to during the extent of construction activities related to the Concrete batching plant, embankments and retaining wall.
- That construction work/activities will only be undertaken during Monday to Friday 7am to 6pm, and Saturdays 8am to 1pm. No work on Sundays or Public Holidays.
- That a 6 metre high noise abatement bund be constructed at the perimeter of the Concrete batching plant to the north-west and south-west.

BHOP Response:

BHOP has addressed these points in its Proposed Statement of Commitments outlined in Section 11 of the EA, and has no objection to the inclusion of these points as consent conditions:

- *A 6 m high noise abatement bund will be constructed at the perimeter of the CBP to the north-west and south-west (dual purpose for noise and visual amenity);*
- *Prior to construction of the CBP and TSF2 extension incorporate into the Construction Environment Management Plan all identified reasonable and feasible measures to minimise noise during construction; and*
- *Construction work will only be undertaken during Monday to Friday from 7 am to 6 pm, Saturdays from 8 am to 1 pm, and no work on Sundays or public holidays.*

(3) Submission by NSW Office of Heritage and Environment

The Office of Heritage and Environment indicated it has no concerns in relation to impacts on biodiversity (including threatened species) from the proposed project and considers that potential for Aboriginal cultural heritage (ACH) to occur across the development footprint is very low.

OEH acknowledged there were no known indigenous heritage sites within the proposed project area however identified several outside the proposed footprint. OEH recognised that they do not appear at risk of harm by the proposed development activities however suggested that care should be taken to ensure those sites and any potential threats are adequately managed supporting mitigation measures recommended for those sites as identified by the Aboriginal and Historic Heritage Assessment (OzArk 2013) previously undertaken for the Mawsons Broken Hill Quarry.

The EA was provided to the NSW Heritage division as recommended by OEH.

BHOP Response:

Agree, the recommended management measures as outlined by OzArk are consistent with the management procedures for such finds used at the Rasp Mine.

**(4) Submission by NSW Heritage Division**

The NSW Heritage Division did not raise any objections to the proposed project and recommended that the following be included in new consent conditions:

If any unexpected historic archaeological deposits/relics are discovered during the course of works it is recommended that the Heritage Council in accordance with section 146 of the Heritage Act 1977. Notification(s) must be in writing and prior to works continuing in the affected area(s) mitigation strategies need to be agreed with by Senior Team Leader – Archaeology in the Heritage Division and implemented by the applicant.

HD also noted that BHCC is in the National Heritage List and is afforded protection under the *Environment Protection and Biodiversity Conservation Act 1999* which is administered by the federal Department of the Environment and Energy (DEE) and advised BHOP should liaise with DEE in relation to any likely impact on the national heritage values and with BHCC in relation to any potential impacts to the local heritage items.

BHOP Response:

BHOP has a procedure for the discovery of items at the Rasp Mine site that may be of heritage or historic value which includes stopping such work that may impact the items and providing appropriate notifications. BHOP has, and will continue to liaise with BHCC in regards to any potential for activities to impact on heritage values at the site.

(5) Submission by Division of Resources and Geoscience

The Division of Resources and Geoscience (DRG) raised no current concerns regarding land use or resource sterilisation by the proposed project. However DRG does not consider that the rehabilitation as outlined for TSF2 in the EA adequately addresses how the proposed TSF2 will be effectively rehabilitated to support final land use outcomes.

DRG suggests that modification will need to be integrated as part of the Rehabilitation Strategy for the entire Rasp Mine and requests that, should the application be approved, a condition be imposed requiring the submission of a Rehabilitation Strategy for the mine incorporating the area associated with this application. This will allow for a more suitable rehabilitation methodology for the TSF2 to be derived and implemented, in line with the rest of the mine. DRG requests drafting review of any condition prior to inclusion within any consent.

BHOP Response:

BHOP has outlined rehabilitation for TSF2 in line with PA 07_0018 consent conditions and consistent with the rehabilitation strategies outlined in the original EA. The proposed rehabilitation strategy for TSF2 is also consistent with the current approved Rehabilitation Calculation Estimate (January 2015 as provided by DRG following a Ministerial Review) where the principle objective for TSF2 is to provide a safe structure that minimises wind entrainment of lead dust. The strategy applied to achieve this is to cover the surface of TSF2 with waste rock. Studies were undertaken as part of this Modification to determine both the benefits of the use and suitability of waste rock for this purpose, refer MOD4 EA Appendices I and J, and Section 10.10 of the EA.

Current consent conditions already require BHOP to gain the approval of DRG to proposed rehabilitation objectives and strategies and BHOP continues to work with DRG to achieve this and would consider any new consent conditions in relation to rehabilitation requirements.



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(6) Submission by Department of Primary Industries (and Department of Industry – Lands)

The Department of Primary Industries (DPI) has indicated that the EA has adequately addressed any matters of regulatory interest to the Department, including the Department of Industry – Lands.

The DPI has requested that in the case that MOD4 is approved the Site Water Management Plan should be updated in consultation with DPI Water prior to commencement of activities.

BHOP Response:

Agreed, refer Section 11.5 of the EA, Proposed Statement of Commitments where BHOP has made the commitment to:

“Review and update the BHOP Site Water Management Plan to address stormwater management at the CBP and TSF2 embankments to collect and retain a 1:100 year, 72 hour rainfall event; “

As per current PA Approval Schedule 3 Condition 23, BHOP will consult with DPI – Water in regards to this review.

(7) Submission by NSW Health – Western NSW Local Health District (NSW Health)

NSW Health – Western NSW Local Health District (NSW Health) has indicated that the following items are required to be addressed:

1. Conduct an Air Quality Impact Assessment for both aspects of the modification application which identifies any potential impacts on air quality, in particular dust generation and include any proposed mitigation measures

BHOP Response:

An air quality impact assessment was completed by Pacific Environment Limited and is located at Appendix I, a summary is included at Section 10.2 with proposed mitigation measures outlined in Section 10.2.3. Section 11.3 details BHOP commitments to air quality management.

2. The provision of detailed information regarding the ability of the water sprayers to reach all parts of the TSF.

BHOP Response:

The conceptual design requirements for the water spray system to control dust at TSF2 are outlined in Section 10.2.3.1 of the EA and Appendix J(a). A more detailed design is also provided by Wet Earth Pty Ltd at Appendix B.

3. Provide a Geological Impact Assessment to identify any risk of failure of the TSF and potential environmental impacts.

BHOP Response:

Golder Associates completed a risk analysis, including mode failures, for the potential of a wall failure of the TSF to identify the required measures for control. The results of this analysis and the mitigating conditions, design controls and critical operating criteria are discussed in Section 10.4 and



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summarised in Table 10-7. Control measures are outlined in Section 10.4.2.1 of the EA. Golder confirmed that the controls and criteria are in-line with those required by the NSW Dam Safety Committee (and ANCOLD guidelines) who endorsed the design in December 2016 stating that the design conforms to the requirements.

4. That the proposed modifications to be considered in the next Updated Human Health Risk Assessment (Environmental Performance Condition No.14 of the original Project Approval).

BHOP Response:

Agreed. As part of the EA BHOP provided a health assessment review conducted by Dr Roger Drew, ToxConsult –Toxicology Consulting Australasia, Appendix L and summarised in Section 10.3 of the EA. ToxConsult concluded that:

“It is our opinion that these incremental exposures to Pb, due to the proposed Modification, are so small that a formal HHRA for the proposal is not warranted. Indeed a HHRA will not inform on the potential impact to human health from the proposed Modification any more than is deduced from the analysis provided in this letter report.”

BHOP has committed to this inclusion in its Proposed Statement of Commitments outlined in Section 11 of the EA.

(8) Submission by Environment Protection Authority

The Environment Protection Authority (EPA) has indicated it requires additional information in relation to potential air quality and noise impacts to enable an adequate assessment of the proposal.

BHOP response to the points listed in their submission can be found in:

- Appendix A - Response to Air Quality Points Raised by the EPA Submission, Pacific Environment Ltd, June 2017
- Appendix B - Response to Air Quality – Point 2 Raised by the EPA Submission, Wet Earth Pty Ltd, June 2017
- Appendix C - Response to Noise Points Raised by the EPA Submission, EMM Consulting Pty Ltd, June 2017

(9) Submission by Anonymous Public Submission

The Anonymous Public Submission raised the following concerns:

- (1) Why was there a change regarding tailings deposition into TSF2 from the original feasibility study to the current proposal?

BHOP Response:

Golder Associates Ltd was commissioned to complete both the original feasibility study for tailings placement and the design for the current TSF2 extension. During the feasibility study Golder commented that an increase in the storage capacity of TSF2 could be possible by installing a wall at the low point in the Pit rim at the northeast corner. Following a detailed study by Golder of the Pit rim,



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which included an extensive ground survey, it was found that there were three low points that would require in-filling to increase the storage capacity of the facility. Golder designed the proposed TSF2 extension around this more accurate data.

- (2) (a) How are the proposed works to be undertaken when the Pit looked 'near full' at the time of the independent audit report in February 2016?

BHOP Response:

At the time of the February 2016 audit there was 1.7 million tonnes of capacity remaining in TSF2.

The design proposed by Golder, as outlined in their report at Appendix J of the EA, provides the location for all proposed infrastructure. The decant pond and sump are located within the surface of the Pit.

- (b) Why have tailings not been used for underground backfill and what was used?

BHOP Response:

BHOP has had an excess of waste rock produced from development underground. It has chosen to place this as backfill in underground voids and stopes instead of tailings as it is more economic to dispose of waste rock underground rather than transporting waste to the surface. This is discussed in detail in Section 1.2.2 of the EA with Table 1-1 detailing the amount and location of waste rock and tailings placed since the commencement of operations.

- (c) Water disposal from a 1:100 year rain event will not fit into Horwood Dam.

Water management for TSF2 as part of the overall design by Golder provides that during operations of the TSF the TSF will be able to retain a 1:10,000 year rain event falling over a 72 hour period (or 334 mm of rain), as required by the NSW Dam Safety Committee guidelines. The average yearly rainfall in Broken Hill is 260 mm.

The NSW DSC also requires that rainfall from a 1:100 year, 72 hour rainfall event must be removed from the surface of the Pit within 7 days (to allow for another such rainfall event). BHOP have proposed to pump this water to either Horwood Dam and/or Mt Hebbard Gully storage (S22), as outlined in Section 10.9.10 of the EA and by Golder in their design report at Appendix J.

Horwood Dam has a current capacity of 18.2 ML (reduced from the original capacity of 30.3 ML to prevent potential for seepage) and is required to accommodate 7.7 ML during a 1:100 year, 72 hour rainfall event, giving a current excess capacity of 10.5 ML.

Mt Hebbard Gully (S22) has a current capacity of 40 ML and is required to accommodate 20.5 ML during a 1:100 year, 72 rainfall event, giving a current excess capacity of 19.5 ML.

The total combined excess capacity from these two storage facilities (30 ML) can easily accommodate the 21.5 ML of rainfall which would be on the surface of TSF2 in a 1:100 year, 72 hour rainfall event.

Post operations and capping of the TSF a 1:100 year, 72 hour rainfall event will be retained on the surface of the TSF any additional rainfall event will flow over the spillway, some may be captured within Horwood Dam and some may be released from site, depending on the size of the rain fall event.



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(d) Purpose of the proposed project is to 'sure up the northern and southern end of the pit for CML7 development plan stage (3).

BHOP Response:

The reason for the Modification and its justification are outlined in Sections 1.2, 8 and 12 of the EA. The CML7 Development Plan provided in the submission appears to be from historic plans prior to Project Approval (its date and source are unknown) and bears no resemblance to current mine development plans.

The current operating capacity of the processing mill is 720,000 tpa. Significant changes would need to be undertaken to achieve an expansion to 1 M tpa which would require a new modification to the Project Approval (current approved capacity is 750,000 tpa).

5 Revised Statement of Commitments

BHOP requests the following item to be added to its Proposed Statement of Commitments:

Community Health

The following measure will be implemented:

- *BHOP shall address relevant aspects of the proposed modification in the next Updated Human Health Risk Assessment.*



**Appendix A - Response to Air Quality Points Raised by the EPA
Submission, Pacific Environment Ltd, June 2017**

Attached



Appendix B - Response to Air Quality – Point 2 Raised by the EPA Submission, Wet Earth Pty Ltd, June 2017

Attached



**Appendix C - Response to Noise Points Raised by the EPA
Submission, EMM Consulting Pty Ltd, June 2017**

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