



# **Rasp Mine**

Zinc – Lead – Silver Project

Project Approval No. 07-0018 SSD-014

## **SUPPLEMENTARY INFORMATION**

For

### **Statement of Environmental Effects**

#### **Modification MOD7**

#### **Utilising Rock Fill Material in BHP Pit for TSF2 Embankment Construction**

June 2019

**Broken Hill Operations Pty Ltd**

**BROKEN HILL**

**July 2019**



## 1.0 INTRODUCTION

Broken Hill Operations Pty Ltd (BHOP) has made an application to modify its Project Approval to utilise and crush material currently stored in BHP Pit for the construction of Blackwood Pit TSF2 embankments. A Statement Environmental Effects was completed by BHOP to support this application. The Department of Planning and Environment has requested the provision of the following additional information required for the assessment of this modification application (07\_0018 MOD 7):

- *a list of the heritage items surrounding the proposed modification area, and mitigation measures;*
- *updated Fig 1-2 of the modification report to include the information on Appendix A of the noise report and locations of the heritage items. Please ensure that the updated legend include all the relevant information and that the North sign and scale of the map are clearly shown on the map;*
- *source of the required material for TSF2 construction: would they all be sourced from the stored waste rock with less than 0.5% lead content in BHP Pit? If not, where the rest of the material would come from and please provide the required/available amount from each source; and*
- *further information to support that the proposed activities would not visible from City of Broken Hill.*

## 2.0 HERITAGE ITEMS LOCATED IN BHP PIT

The Department of Planning and Environment has requested the provision of the following additional information required for the assessment of this modification application (07\_0018 MOD 7):

- *a list of the heritage items surrounding the proposed modification area, and mitigation measures;*

There are a number of heritage items within BHP Pit. These items are remnants from mining around the turn of the last century and are listed as heritage items in the Broken Hill City Council (BHCC) Local Environment Plan 2013 (LEP) and include Building Foundation (I305), a Timber Chute (I309) and Four Concrete Piers (I306), located at distances from the proposed MOD7 works ranging from 25 m to 40 m. Also listed on the BHCC LEP and located within the Pit (at a further distance from the waste rock storage area proposed MOD7 activities) are remnants from BHP Headframe Ruins (I307) and part of a Stone Retaining Wall (I308). Details of all these items are provided below.

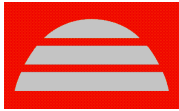
Mitigation measures to protect these heritage items are fencing and signage.

The following details provided for the heritage items have been taken from a heritage study undertaken by Austral Archaeology Pty Ltd, 2013.

### ***Heritage Item Number I305 - Building Foundation -***

This item (**Plate 1**) lies approximately 30 m to the south-east of the proposed MOD7 activities. It is a large concrete, brick and stone foundation. The south end has a section of brick wall (about 10 courses of brick high) still standing and a concrete floor apron.

The centre section has two east-west aligned stone walls with concrete floors either side with a dropped section in between possibly for a stairway. Each of these walls has steel reinforcing bolts through it as has the north end of the concrete floor. The east end of each of these walls has a number of stone piers with reinforcing bolts. The north end wall (also made of stone) is leaning heavily into the pit. There are some timber beams protruding from some of the wall sections. The far north walls are also made of stone standing c. 1.5 m high and have a concrete floor apron. All of this foundation is subsiding into the pit. On the north side of the central walls there is a semicircular groove cut into the stone for a machine footing.



There is no documentary evidence to help establish the exact historical background of this feature. From inspection of early company plans it appears to correlate with the position of the 1891 Amalgamating Mill which was demolished in 1896.

**Plate 1 - Building Foundation (I305)**



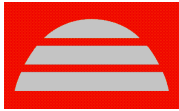
***Heritage Item Number I306 - Four Concrete Piers***

This item (**Plate 2**) lies approximately 45 m to the proposed MOD7 activities. It consists of four concrete piers approximately 1 m in height and each with a single central foundation bolt. The piers are 1 m x 1 m at the base and 70 cm x 70 cm at the top and are spaced 5 m apart to form the four corners of a square. Origin is unknown however, estimated to be between 1890s to early 1900s.

There is no documentary evidence to help establish the historical background of this feature although it would appear to date from the BHP open cutting period in the 1890's through to the early 1900's. The open cut was no longer in use after 1907.

**Plate 2 - Four Concrete Piers (I306)**



***Heritage Inventory Form Item Number I309 - 5 Timber Chute***

This item (**Plate 3**) is located on the northern upper slope of BHP Pit approximately 25 m from the proposed MOD7 activities. This feature consists of 20 m of a timber chute in two sections running down the inside of the pit from the top to approximately half way. It is 1 m wide with a slightly concave base and short single plank side walls. Each sloping section is approximately 8 m long with a short 4 m flat section in between them. With the original length unknown, this may only represent half of the structure, or it could be all of it. The extant section appears to be complete.

There is no documentary evidence to help establish the historical background of this feature although it would appear to date from the BHP open cutting period in the 1890's and early 1900's. The open cut was no longer in use after 1907.

**Plate 3 - Timber Chute (I309)**

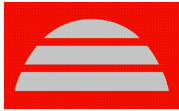


There are two other items listed in the BHCC LEP which are also located in BHP Pit, these are located at some distance from the proposed infill area. These include:

***Heritage Item Number I308 - Stone Retaining Wall***

The date of origin for this item (**Plate 4**) is unknown however it was identified as likely to be significant as it is a remnant of the early BHP era, estimated to be between 1890s to early 1900s. There is no documentary evidence to help establish the historical background of this feature although it would appear to date from the BHP open cutting period in the 1890's through to the early 1900's. The open cut was no longer in use after 1907. It is a 5 m high dry stone retaining wall oriented north / south for 10 m and then turning gradually to the east for 5 m.

This item lies adjacent to the access road into the Pit at a distance of 15 m, and 40 m distance to the proposed MOD7 works.



**Plate 4 - Stone Retaining Wall (I308)**



***Heritage Number I307 - BHP Headframe Ruins***

This item (**Plate 5**) is located approximately 80 m from the proposed MOD7 activities and 12 m from the access road to the Explosives Store. The remains of this early headframe are probably associated with the 1891 Wigg Shaft which dates from the earliest phases of BHP's mining operations and are therefore highly significant and consist of two concrete headframe footings with timber uprights and one crossbar. The north side upright has about 1 m remaining while the south upright has 2.5 m remaining and has a number of iron bolts protruding from it. Just north of these footings is another concrete footing with no timber uprights.

This headframe may belong to one of two different shafts. It may be associated with either Knox shaft sunk in 1885 or Wigg shaft which was sunk in 1891. It is more likely that it belongs to the latter as Company records of 1895 list the shafts inside the open cut and Wigg is one of them, while Knox is not mentioned. Conversely, Knox shaft is the closest to the Amalgamating Mill and would at some stage have fallen to the open cut.

**Plate 5 - BHP Headframe Ruins (I307)**







### 3.0 UPDATE OF LOCATION MAP

The Department of Planning and Environment has requested the provision of the following additional information required for the assessment of this modification application (07\_0018 MOD 7):

- *updated Fig 1-2 of the modification report to include the information on Appendix A of the noise report and locations of the heritage items. Please ensure that the updated legend include all the relevant information and that the North sign and scale of the map are clearly shown on the map;*

Figure 1-2 provides a view of:

- CML7 and MPLs boundaries and surface exclusions
- Project Area
- Its location within Broken Hill
- Rasp Mine facilities and infrastructure where relevant
- Willyama Common
- Perilya lease boundaries
- Tourist leases/permits located within CML7

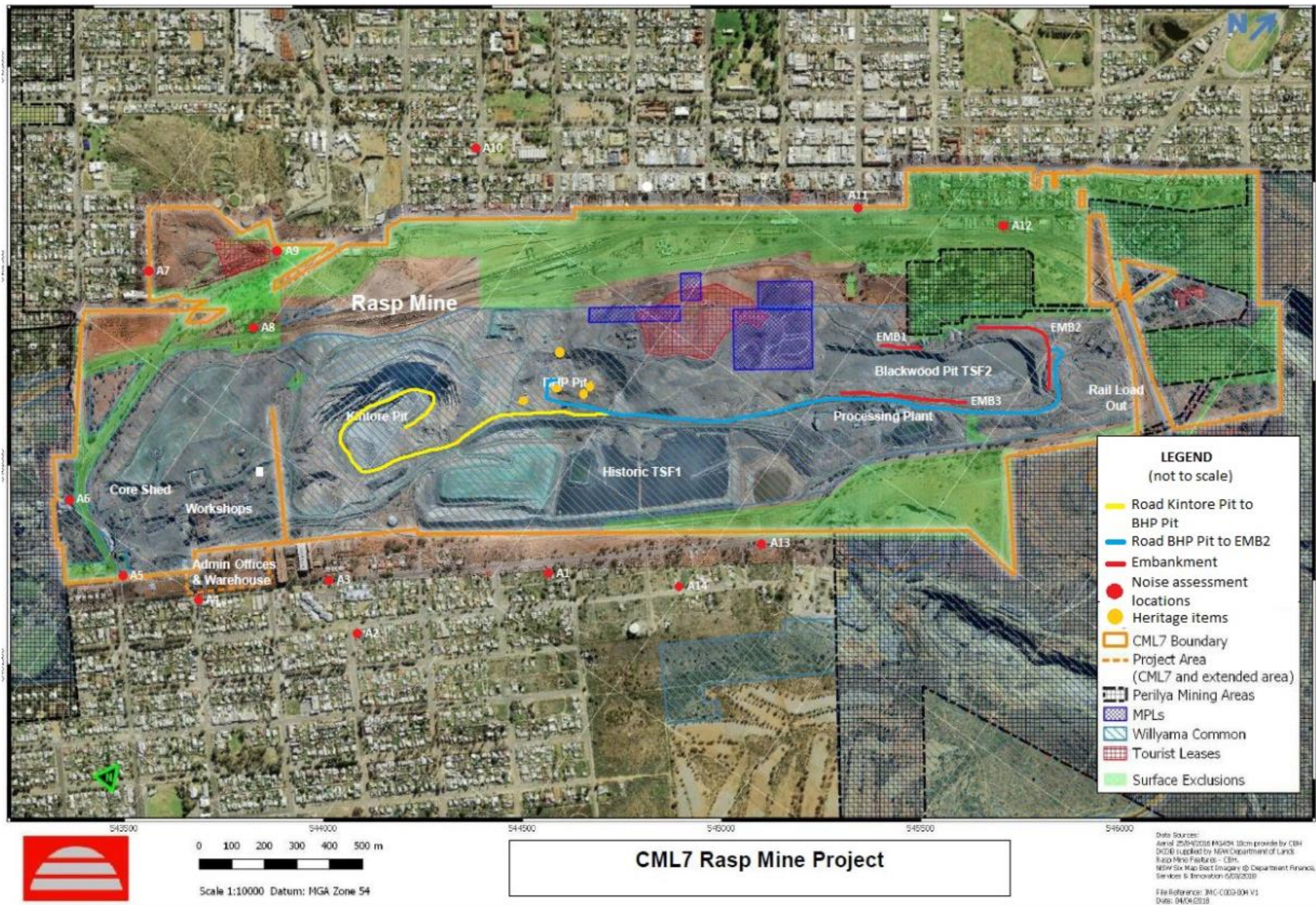
This figure was provided merely to show the location of the Rasp Mine within the City of Broken Hill and a summary of the site within CML7. The direction of north was included in the original Figure 1-2 and was indicated in the top right hand corner by a capital **N** and an arrow ↗

The following additions have been made to Figure 1-2:

- Noise assessment locations
- Access road from Kintore Pit to Embankment 2
- Access road from BHP Pit to Embankment 2
- Heritage items within BHP Pit
- Added to legend – Not to Scale



Figure 1-2 Updated – Location Map for Proposed MOD7





## 4.0 SOURCE OF OTHER CONSTRUCTION MATERIALS

The Department of Planning and Environment has requested the provision of the following additional information required for the assessment of this modification application (07\_0018 MOD 7):

- *source of the required material for TSF2 construction: would they all be sourced from the stored waste rock with less than 0.5% lead content in BHP Pit? If not, where the rest of the material would come from and please provide the required/available amount from each source;*

The construction of the embankments and associated works are outlined in MOD4. BHOP is not seeking changes to any other of the construction materials.

MOD7 proposes to utilise waste rock material currently stored in BHP Pit as excess from underground mine workings, approximately 180,000 t has been stored. It is proposed to use this material as rock fill for embankment wall construction and road base for capping the top of the embankment wall for continued access. This material will need to be crushed to sub-50 mm for road capping and sub-200 mm for rock fill. Only material identified as less than 0.5% Lead will be used.

The material required for all three embankments, the spillway and the road capping is approximately 140,000 t. It is proposed to use all the material within BHP Pit for this purpose. Where there is insufficient material identified the material currently stored in Kintore Pit will be utilised. The preference is to utilise all the material in BHP Pit to benefit from reductions in transport costs and time taken for each trip to place the material and return to the Pit.

## 5.0 VISUAL ASPECT INTO BHP PIT

The Department of Planning and Environment has requested the provision of the following additional information required for the assessment of this modification application (07\_0018 MOD 7):

- *further information to support that the proposed activities would not visible from City of Broken Hill.*

Consolidated Mine Lease 7 (CML7) is predominantly a hill surrounded by the City of Broken Hill and other mining and infrastructure. The CML7 hill consists mainly of waste rock and tailing deposits. It is one of the highest points in Broken Hill. BHP Pit is located centrally within CML7. It is a pit so the inside of the Pit is only visible from CML7, **Plates 1** provides a photograph of the 'hill' taken from the north side of Broken Hill. Plate 2 provides a view of the Pit from Federation Way located on CML7, the buildings that can be seen are the emulsion and explosives magazines. The area where MOD7 facilities will be located is in the foreground of the photograph and is not visible.

**Plates 3 to 9** are depict a sequence of 'snaps' altogether depicting a 360° view of Broken Hill from the top of the Hill on CML7. This 3D panorama is available on Google Earth.





**Plates 1 and 2 – Aspects of the Hill and BHP Pit**





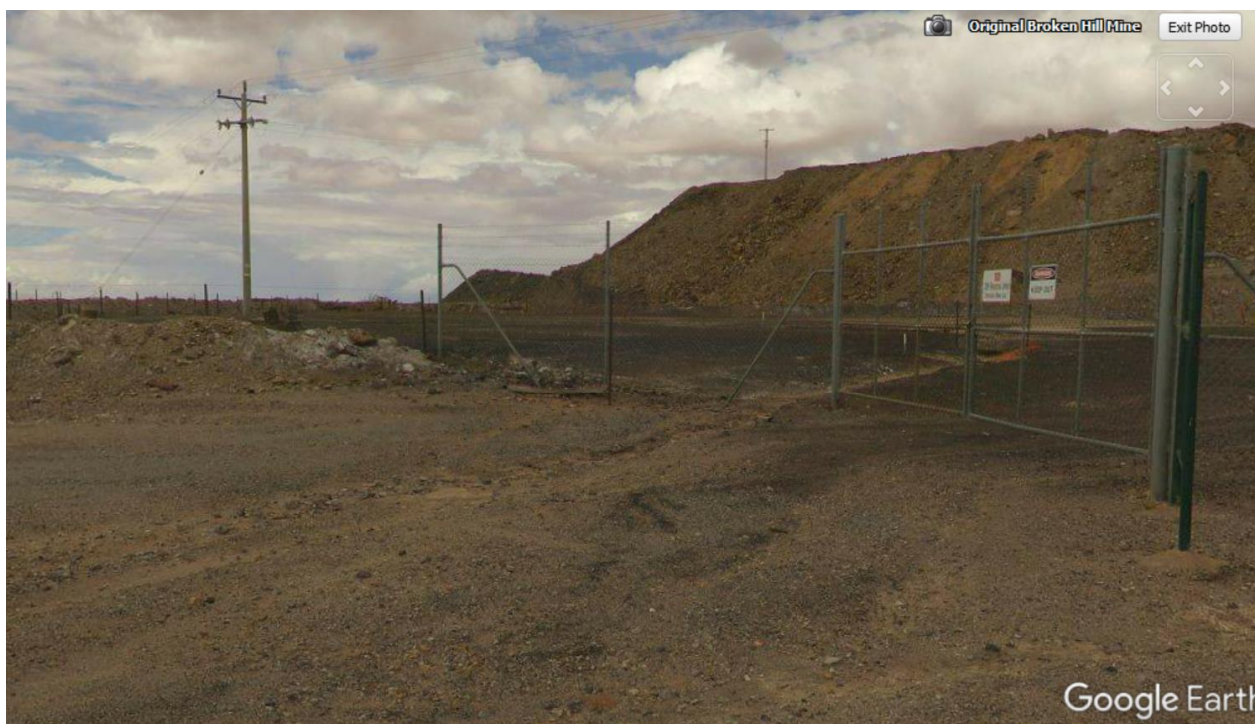
**Plates 3 to 9 – Provide a 360° View of Broken Hill from CML7 – Available on Google Earth**













**Gwen Wilson**  
**Group Manager – Safety Health Environment Community**  
**CBH Resources Ltd**  
**Broken Hill Operations Pty Ltd**  
**4 July 2019**