

NPM also has mineralised inventory in the proposed E31, E31N, E28 and E28N open cut pits that can potentially be extracted and processed with the waste rock utilised as material for the construction TSF 3. The proposed open cut mining within E26 would access ore outside of E26 Lift 1 underground mine surrounding the existing subsidence zone. This inventory is small in the scale of the project (approximately 7 Mt). Mineralised inventory represents zones of mineralisation which are not adequately defined at this point to be stated as either resource or reserve.

### 2.3.2 Key Features of the Step Change Project

The conceptual design of the Project has been developed to maximise recovery efficiency and is based on detailed geological exploration, engineering design and detailed analysis of potential environmental and community constraints. A description of the key features that comprise the Project are summarised in **Table 2.5**. The existing and approved operations were described in **Section 2.2**. The following sections describe the continued operations in further detail, and must be read in conjunction with the summary guidance in **Table 2.5**, and the existing and approved operations in **Section 2.2** to provide a complete description of the Project.

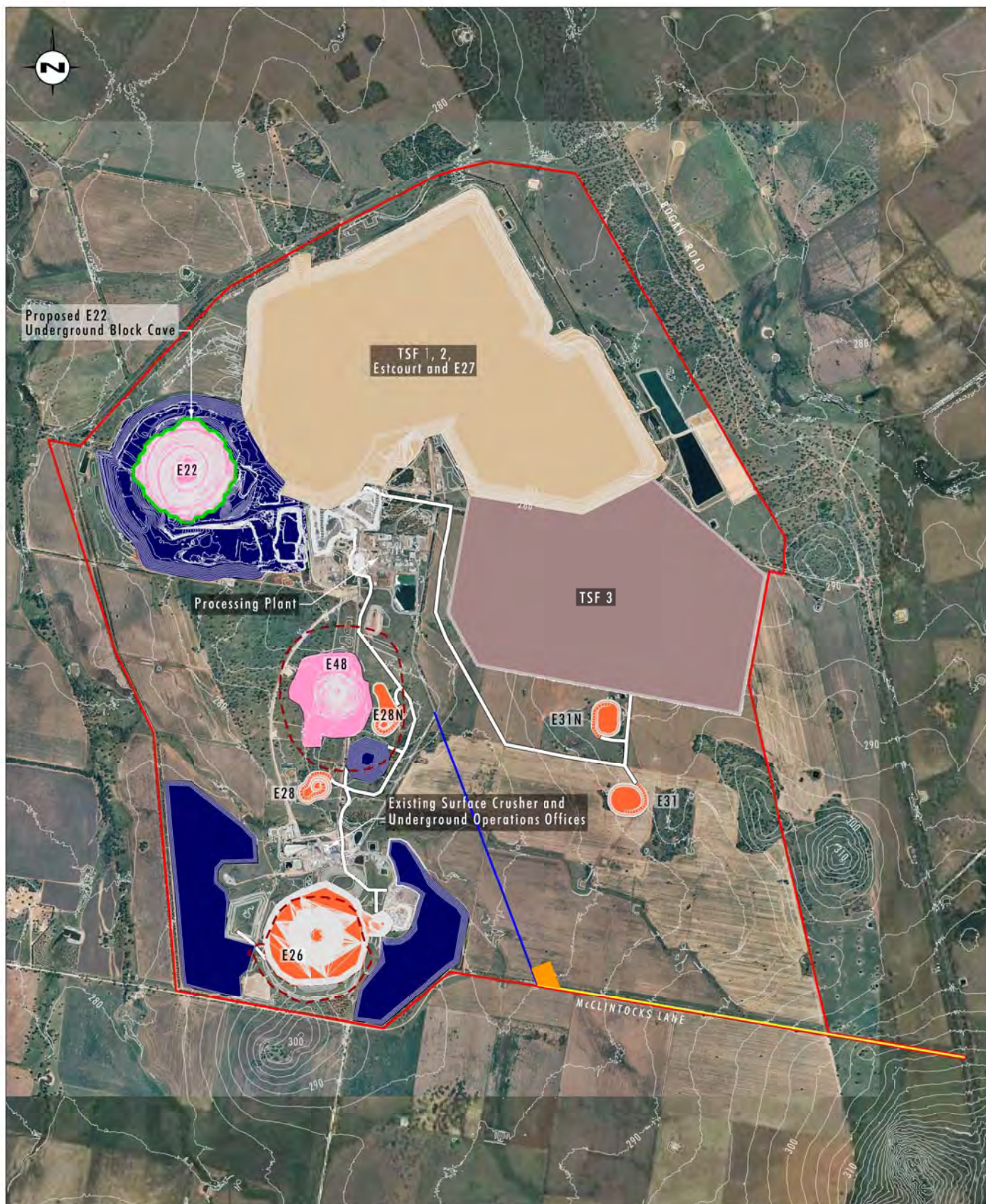
**Table 2.5 – Key Features of the Project**

Major Project Components/ Aspects	Existing and Approved Operations	Proposed Operations
<b>Mining Areas</b>	<ul style="list-style-type: none"> <li>Underground block cave mining of E26 and E48 ore bodies.</li> <li>Open cut mining of E22 and E27 (ceased in 2010).</li> </ul>	<ul style="list-style-type: none"> <li>Continued block caving of the E26 and E48 ore bodies (as per current approval).</li> <li>Development of block cave mining in the E22 resource (previously subject to open cut mining).</li> <li>Development of open cut mining area in existing mine subsidence zone for E26.</li> <li>Development of four small open cuts to extract ore from E28, E28N, E31 and E31N.</li> <li>All proposed open cut mining areas are located within the existing PA 06_0026 Project Area and existing Mining leases.</li> </ul>
<b>Ore Processing</b>	<ul style="list-style-type: none"> <li>Up to 8.5 Mtpa of ore, sourced from underground and open cut mining areas.</li> </ul>	<ul style="list-style-type: none"> <li>Continuation of processing up to 8.5 Mtpa of ore through the existing processing plant sourced from underground and open cut mining areas.</li> </ul>
<b>Mine Life</b>	<ul style="list-style-type: none"> <li>Until 2025.</li> </ul>	<ul style="list-style-type: none"> <li>Extension of mining by seven years until end of 2032.</li> </ul>
<b>Operating Hours</b>	<ul style="list-style-type: none"> <li>24 hours a day, seven days per week.</li> </ul>	<ul style="list-style-type: none"> <li>No Change.</li> </ul>
<b>Number of Employees</b>	<ul style="list-style-type: none"> <li>Approximately 700 full time equivalents.</li> </ul>	<ul style="list-style-type: none"> <li>No Change.</li> </ul>

**Table 2.5 – Key Features of the Project (cont.)**

Major Project Components/ Aspects	Existing and Approved Operations	Proposed Operations
<b>Mining Methods</b>	<ul style="list-style-type: none"> <li>Multiple Underground Block Cave.</li> <li>Campaign open cut mining yielding up to 2 Mtpa for stockpiling and processing as required.</li> </ul>	<ul style="list-style-type: none"> <li>Multiple Underground Block Cave.</li> <li>Campaign Open cut mining of up to 7 Mtpa for stockpiling and processing as required.</li> </ul>
<b>Infrastructure</b>	<b>Operation of:</b> <ul style="list-style-type: none"> <li>TSF 1 - 4.</li> <li>Ore processing plant including surface crusher, crushed ore stockpiles, active grinding mills, froth flotation area and concentrate storage.</li> <li>Site offices, training rooms and workshop facilities.</li> <li>Road haulage of concentrate to the Goonumbla rail siding for transport to Port Kembla.</li> <li>An overland conveyor to transport ore from the hoisting shaft to the ore processing plant stockpiles.</li> <li>Operation of four wastewater treatment plants.</li> </ul>	<b>Construction and operation of:</b> <ul style="list-style-type: none"> <li>TSF to be augmented to connect existing and approved tailings facilities, through the development of TSF 3 southward from the existing southern embankment of TSF 2. The proposed TSF 3 will substantially include the approved TSF 3 (known as Rosedale).</li> <li>Establishment of new waste stockpiles to store waste material generated during open cut mining campaigns including a vehicle wash down area.</li> <li>Continued operation of existing processing plant, site offices, underground access, water supply infrastructure and logistics connections.</li> <li>Continued road haulage of concentrate to Goonumbla rail siding for transport to Port Kembla.</li> <li>Closure of the existing site access road through the development of TSF 3.</li> <li>Provision of an upgraded site access road along a new alignment from McClintocks Lane.</li> <li>Development of an access control and visitors car parking at the intersection of the proposed site access and McClintocks Lane.</li> <li>Upgrade/sealing of McClintocks Lane between the NPM access road and Bogan Road.</li> <li>Upgrades as required to the intersection of McClintocks Lane and Bogan Road.</li> </ul>
<b>Block Cave Knowledge Centre</b>	Onsite Rio Tinto Block Cave Knowledge Centre operates for the domestic and international training of underground block cave mining methodology.	Continued operation of the Rio Tinto Block Cave Knowledge Centre.

**Figures 2.8 to 2.11** depict the representative stages of the conceptual Project design including construction and operational activities over the proposed 19 year life of the Project.



Source: NPM (2013), Google Earth (2006)

Note: Contour interval 2m

0 0.5 1 2 km

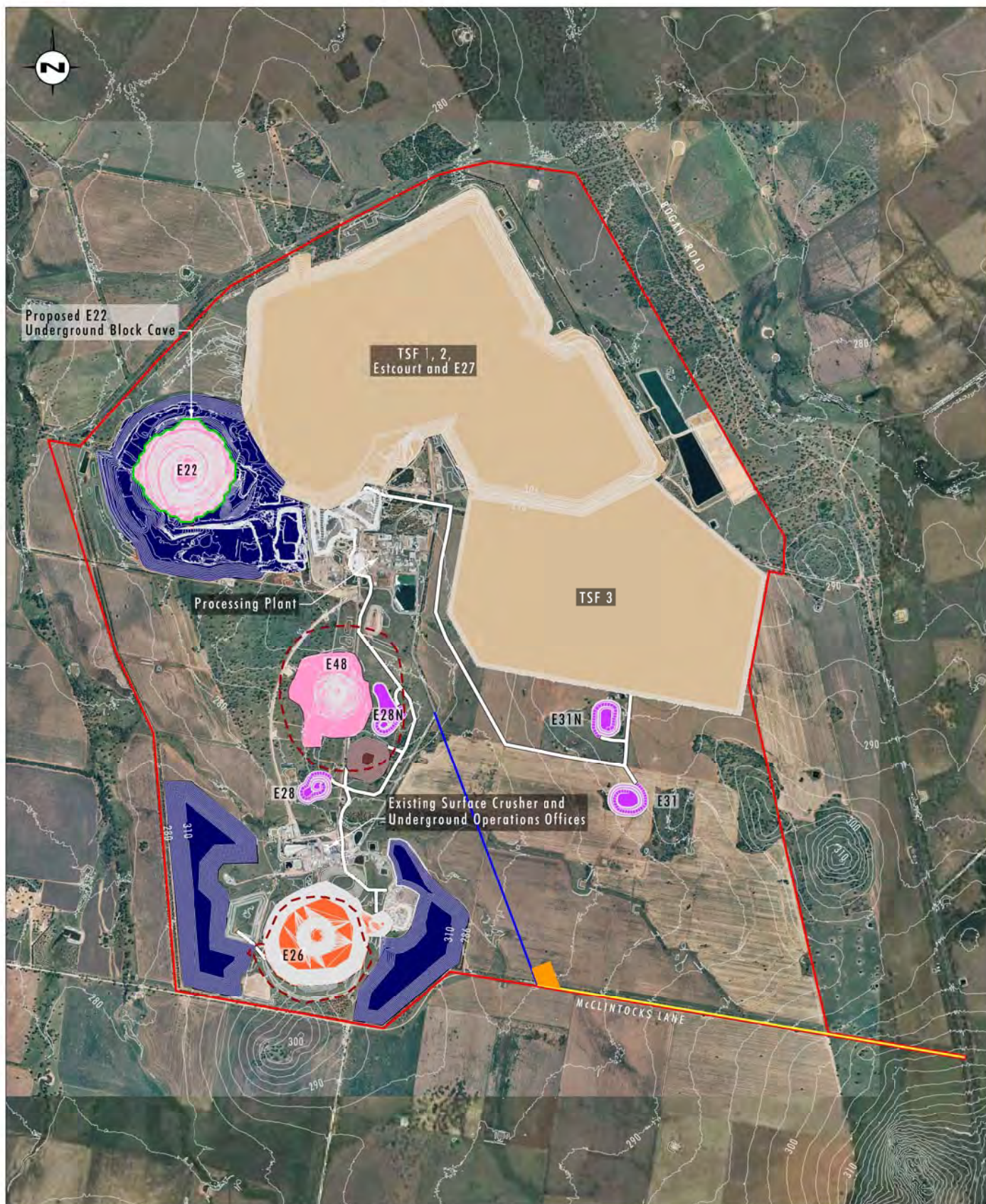
### Legend

- Project Area
- Active Material Stockpile
- Active Open Cut
- Active Tailings
- Active Underground
- Haul Road
- Tailings Construction
- - - Approved Subsidence Management Area
- Proposed Access Road
- McClintocks Lane Upgrade
- Proposed Access Control and Visitor Carpark

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FIGURE 2.8  
Conceptual Mine Plan  
Stage 1





Source: NPM (2013), Google Earth (2006)  
Note: Contour interval 2m

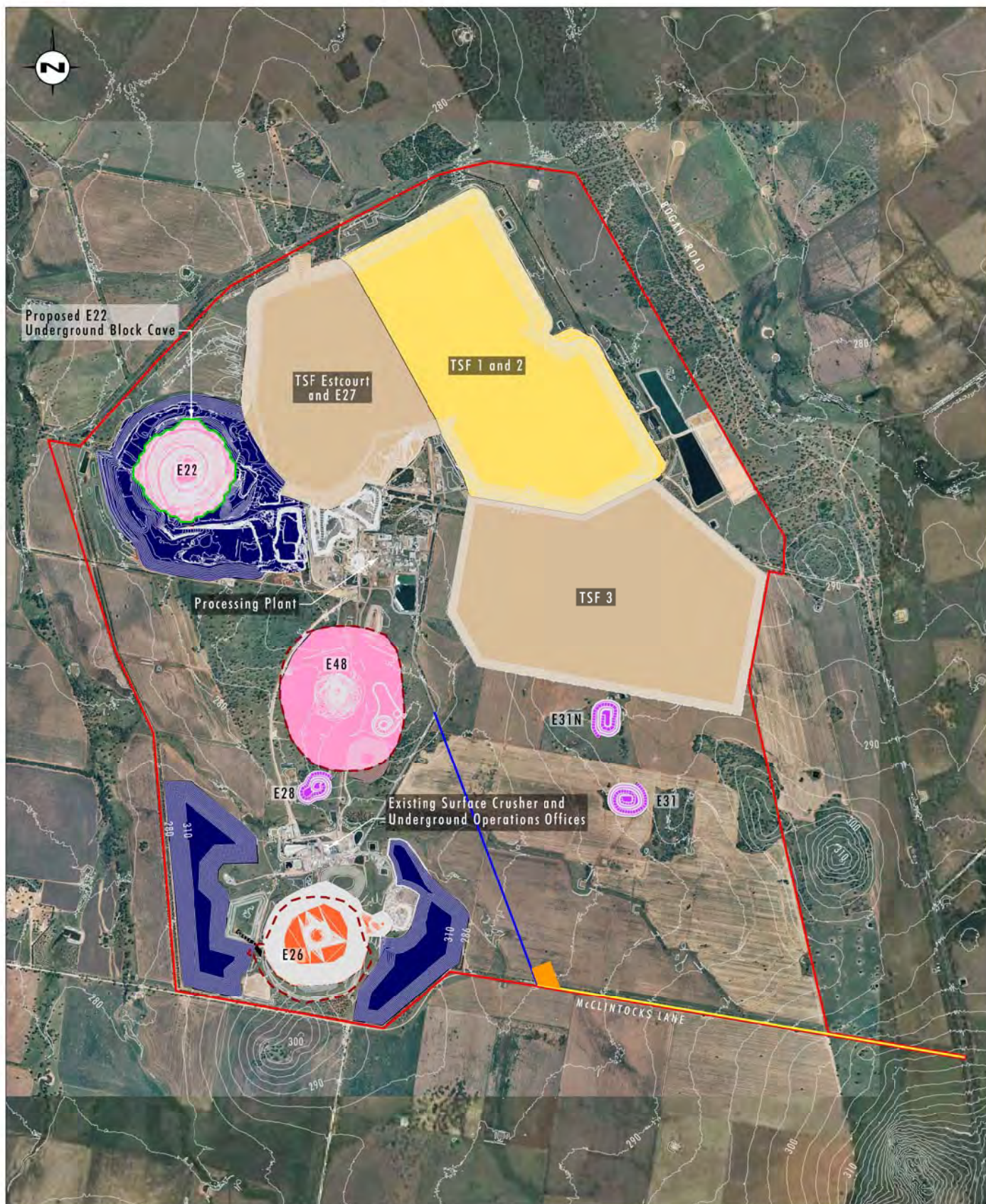
#### Legend

- |  |   |
|--|---|
| <span style="border: 1px solid red; display: inline-block; width: 20px; height: 10px;"></span> Project Area                        | <span style="border: 1px dashed red; display: inline-block; width: 20px; height: 10px;"></span> Open Cut Void                                 |
| <span style="background-color: blue; display: inline-block; width: 20px; height: 10px;"></span> Active Material Stockpile          | <span style="border: 1px dashed red; display: inline-block; width: 20px; height: 10px;"></span> Approved Subsidence Management Area           |
| <span style="background-color: orange; display: inline-block; width: 20px; height: 10px;"></span> Active Open Cut                  | <span style="border: 1px solid blue; display: inline-block; width: 20px; height: 10px;"></span> Proposed Access Road                          |
| <span style="background-color: tan; display: inline-block; width: 20px; height: 10px;"></span> Active Tailings                     | <span style="border: 1px solid yellow; display: inline-block; width: 20px; height: 10px;"></span> McClintocks Lane Upgrade                    |
| <span style="background-color: pink; display: inline-block; width: 20px; height: 10px;"></span> Active Underground                 | <span style="background-color: orange; display: inline-block; width: 10px; height: 10px;"></span> Proposed Access Control and Visitor Carpark |
| <span style="background-color: brown; display: inline-block; width: 20px; height: 10px;"></span> Decommissioned Material Stockpile |   |
| <span style="border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> Haul Road                         |   |

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20130705 11.21

FIGURE 2.9  
Conceptual Mine Plan  
Stage 2





Source: NPM (2013), Google Earth (2006)  
Note: Contour interval 2m

0 0.5 1 2 km  
1:40 000

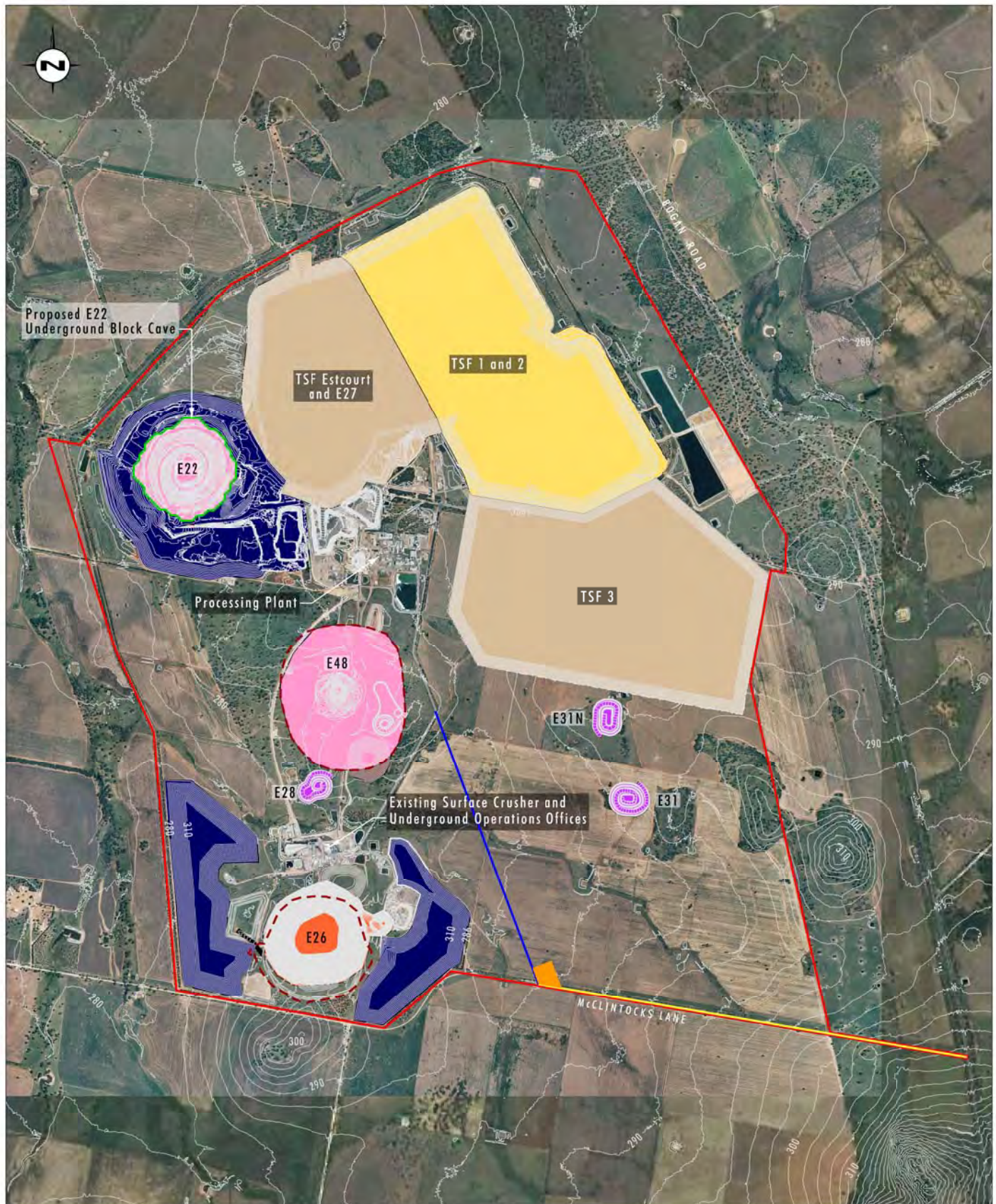
### Legend

- |  |   |
|--|---|
| <span style="border: 1px solid red; display: inline-block; width: 20px; height: 10px;"></span> Project Area                        | <span style="border: 1px solid purple; display: inline-block; width: 20px; height: 10px;"></span> Open Cut Void                               |
| <span style="background-color: blue; display: inline-block; width: 20px; height: 10px;"></span> Active Material Stockpile          | <span style="border: 1px solid blue; display: inline-block; width: 20px; height: 10px;"></span> Haul Road                                     |
| <span style="background-color: orange; display: inline-block; width: 20px; height: 10px;"></span> Active Open Cut                  | <span style="border: 1px dashed red; display: inline-block; width: 20px; height: 10px;"></span> Approved Subsidence Management Area           |
| <span style="background-color: brown; display: inline-block; width: 20px; height: 10px;"></span> Active Tailings                   | <span style="border: 1px solid blue; display: inline-block; width: 20px; height: 10px;"></span> Proposed Access Road                          |
| <span style="background-color: pink; display: inline-block; width: 20px; height: 10px;"></span> Active Underground                 | <span style="border: 1px solid yellow; display: inline-block; width: 20px; height: 10px;"></span> McIntocks Lane Upgrade                      |
| <span style="background-color: brown; display: inline-block; width: 20px; height: 10px;"></span> Decommissioned Material Stockpile | <span style="background-color: orange; display: inline-block; width: 20px; height: 10px;"></span> Proposed Access Control and Visitor Carpark |
| <span style="background-color: yellow; display: inline-block; width: 20px; height: 10px;"></span> Inactive Tailings                |   |

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20130705\_12.24

FIGURE 2.10  
Conceptual Mine Plan  
Stage 3





Source: NPM (2013), Google Earth (2006)  
Note: Contour interval 2m

### Legend

- |  |  |
|--|--|
| <span style="border: 1px solid red; display: inline-block; width: 20px; height: 10px;"></span> Project Area                        | <span style="border: 1px solid purple; display: inline-block; width: 20px; height: 10px;"></span> Open Cut Void  |
| <span style="background-color: yellow; display: inline-block; width: 20px; height: 10px;"></span> Active Material Stockpile        | <span style="border-bottom: 1px solid grey; display: inline-block; width: 20px;"></span> Haul Road   |
| <span style="background-color: orange; display: inline-block; width: 20px; height: 10px;"></span> Active Open Cut                  | <span style="border: 1px dashed red; display: inline-block; width: 20px; height: 10px;"></span> Approved Subsidence Management Area                                    |
| <span style="background-color: pink; display: inline-block; width: 20px; height: 10px;"></span> Active Tailings                    | <span style="border: 1px solid blue; display: inline-block; width: 20px; height: 10px;"></span> Proposed Access Road   |
| <span style="background-color: lightpink; display: inline-block; width: 20px; height: 10px;"></span> Active Underground            | <span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> McClintocks Lane Upgrade                    |
| <span style="background-color: brown; display: inline-block; width: 20px; height: 10px;"></span> Decommissioned Material Stockpile | <span style="background-color: orange; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> Proposed Access Control and Visitor Carpark |
| <span style="background-color: yellow; display: inline-block; width: 20px; height: 10px;"></span> Inactive Tailings                |  |

File Name (A4): R10/2949\_333.dgn  
20130705\_12.33

FIGURE 2.11  
Conceptual Mine Plan  
Stage 4

Further details of these activities are provided in the following sections.

### 2.3.3 Mining Operations

The mining philosophy employed by NPM is one of 'mill feed' whereby the goal of mining activities is to maintain a constant supply of available ore to put through the processing plant to maintain consistent copper concentrate production. As outlined in **Section 2.2** above, this philosophy has historically occurred through underground block cave mining of the E26 and E48, resources, with campaign open cut mining in E22 and E27 and stockpiled reserves used to provide a supplementary lower grade resource as a contingency ore supply to be blended with the higher grade underground ore as required. The Project will maintain this strategy, by extracting additional open cut resources on a campaign basis and establishment of block cave mining in E22, whilst retaining underground block cave mining in E26 and E48 as the principal method for ore extraction.

**Figures 2.12 to 2.15** provide cross sections of existing and proposed underground and open cut mining operations depicting the approximate extent and scale of the conceptual mine plan.

#### 2.3.3.1 Underground Block Cave Mining

The Project will continue to use the NPM block cave mining method within the three ore bodies (one new extraction location) at E26, E48 and E22, as shown in **Figures 2.13 to 2.15**. All underground block caves associated with the Project are located in areas where either block cave subsidence has broken through to surface (E26 and E48) or where previous open cut mining (E22) has resulted in an existing mine void. Ongoing block cave mining of both the E26 and E48 resources will continue in accordance with approved underground operations (refer to **Section 2.2.1**).

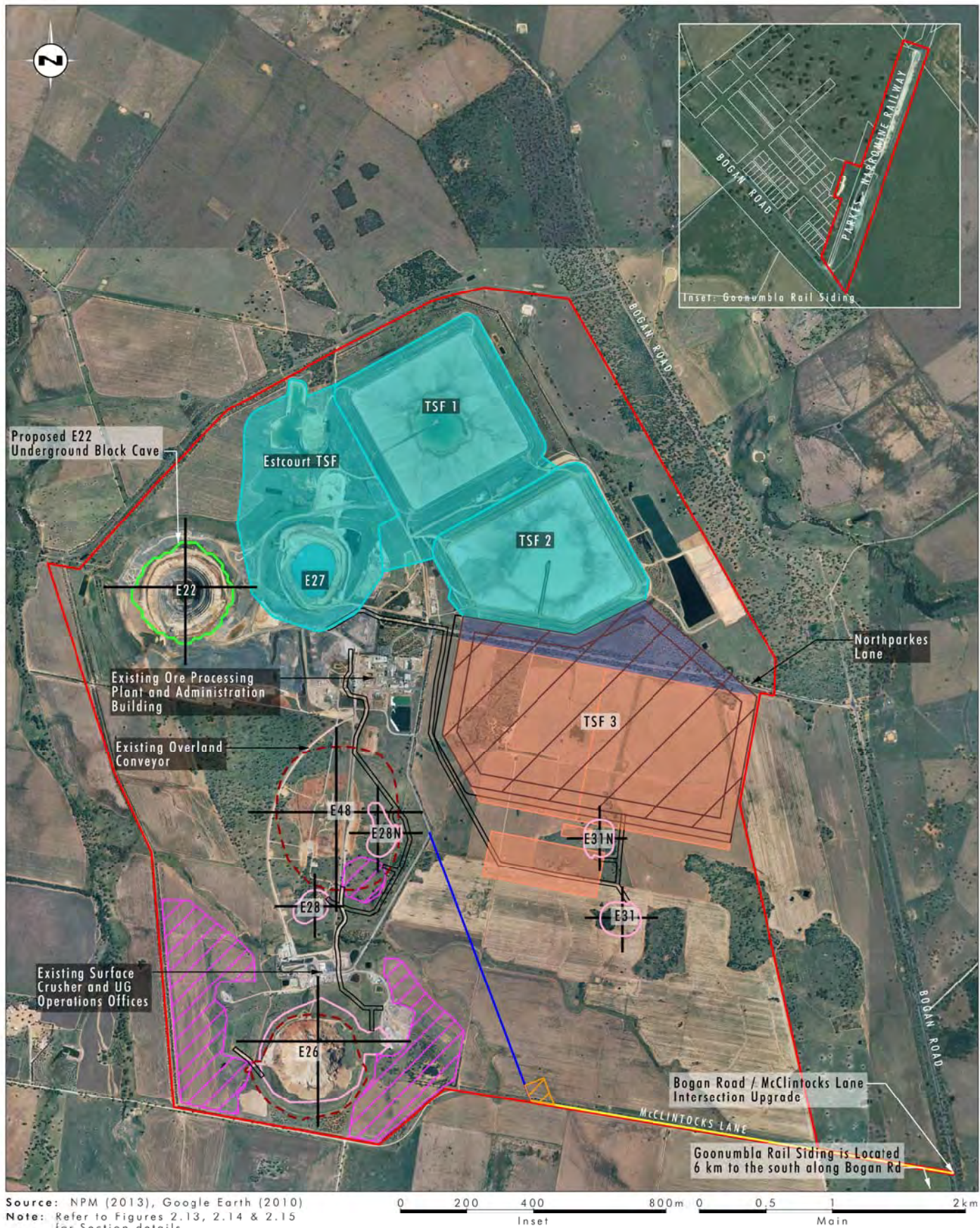
Development of the E22 block cave will be predominantly through drill and blasting, and will be complimented by the underground tunnel boring system (TBS) trial currently being undertaken at NPM. The TBS involves Rio Tinto proprietary technology which includes an underground tunnelling system to cut underground access tunnels, stabilise the host material, develop a road surface and convey waste material away from the cutting face through an integrated machine similar to units used for road tunnel construction. The system reduces the need for multiple underground development crews to construct underground access with significant reduction in safety risks.

The TBS has begun its trial in the E48 underground area and will progress toward the E22 resource. Following roadway completion (approximately 2 kilometres), an additional extraction level will be developed beneath E22 through either the established drill and blast techniques or use of the TBS at an approximate level of 580 metres below surface. Supporting infrastructure including access and conveyors to surface will be built to connect to the existing E26 and E48 extraction levels.

#### 2.3.3.2 Open Cut Mining

Throughout the Project a number of open cut pits will be developed and operated on a campaign basis within the existing mining leases. The proposed extension of open cut mining areas will target ore bodies that are currently mined at NPM and ore bodies located in close proximity to these areas. Accordingly, the majority of the proposed mining areas are located in the current active operational areas which avoid and minimise areas of additional disturbance associated with the Project.





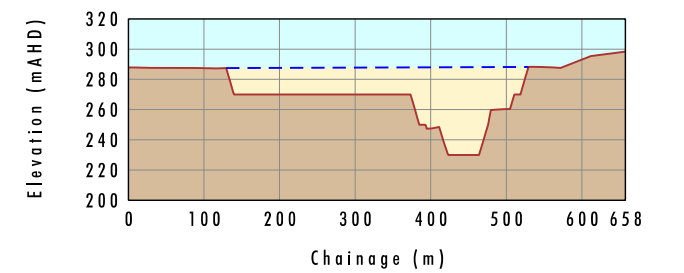
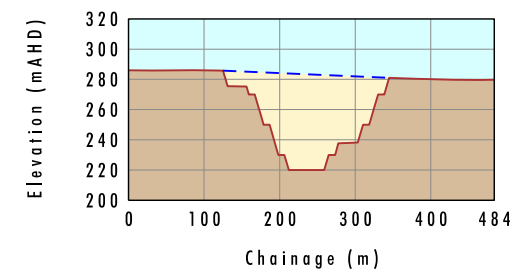
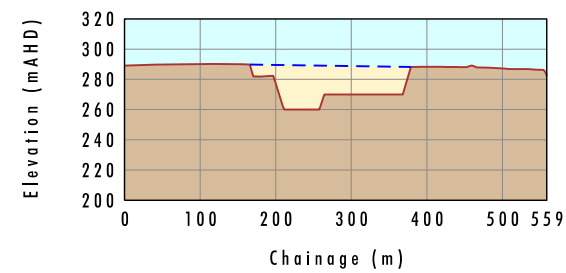
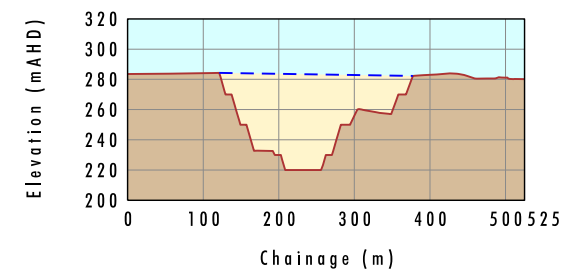
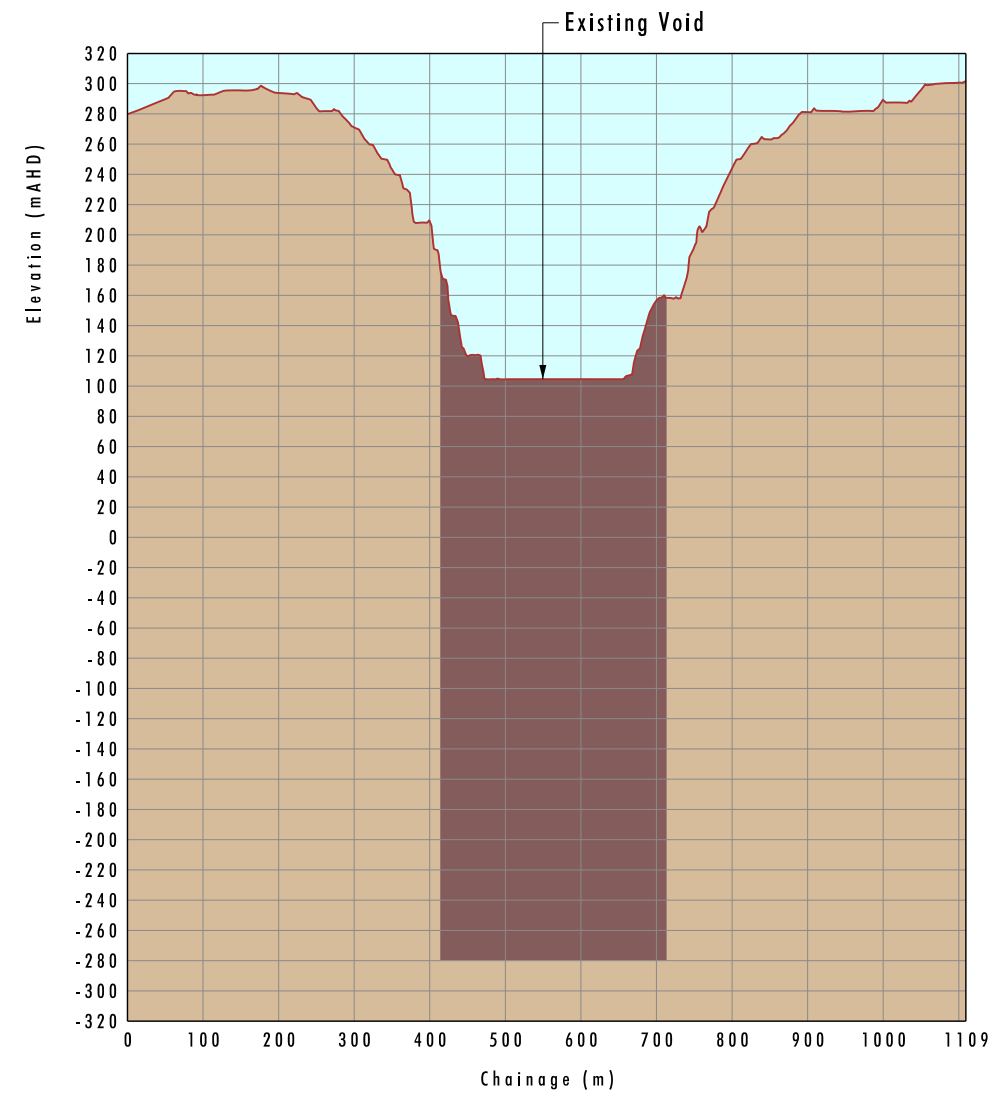
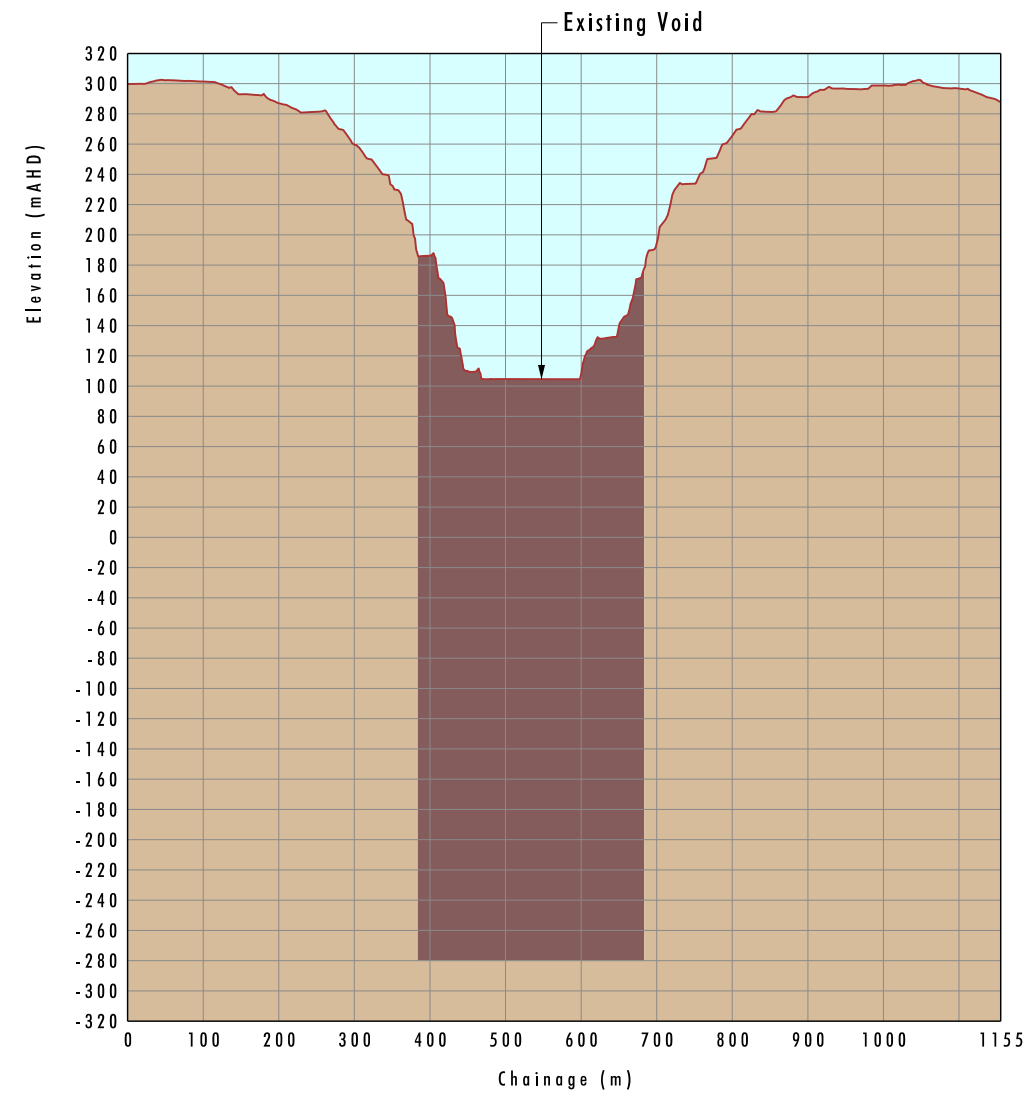
#### Legend

- Project Area
- Approved Tailings Storage Facility (Rosedale)
- Approved Subsidence Management Areas
- Existing Tailings Storage Facility
- Proposed Tailings Storage Facility Extension
- Proposed TSF3
- New Underground Block Cave Mining Area
- Proposed Open Cut Areas
- Proposed Upgrade to McClintocks Lane
- Proposed Access Control and Visitor Car Park
- Proposed Waste Dumps
- Proposed Site Access Road
- Proposed Haul Road
- Transect

FIGURE 2.12

Conceptual Mine Plan Cross Section Locations





### Legend

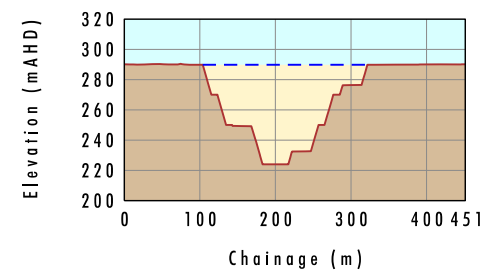
- Existing Surface Level
- Open Cut
- Underground Block Cave (Approximate Extent)
- Predicted Conceptual Open Cut Final Void

0 50 125 250m  
Vertical Scale

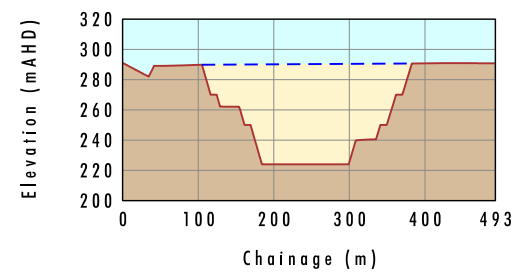
0 100 250 500m  
Horizontal Scale

**FIGURE 2.13**  
Conceptual Mine Plan Cross Sections

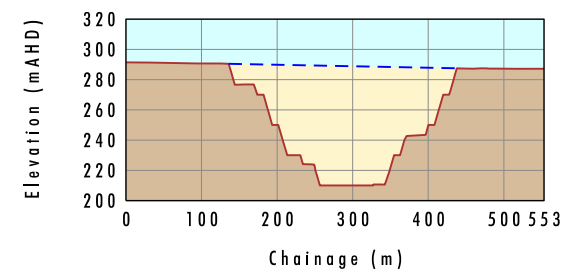




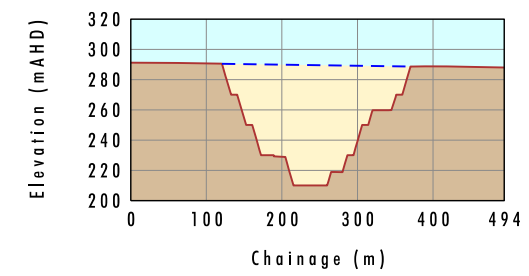
**E31N East-West**



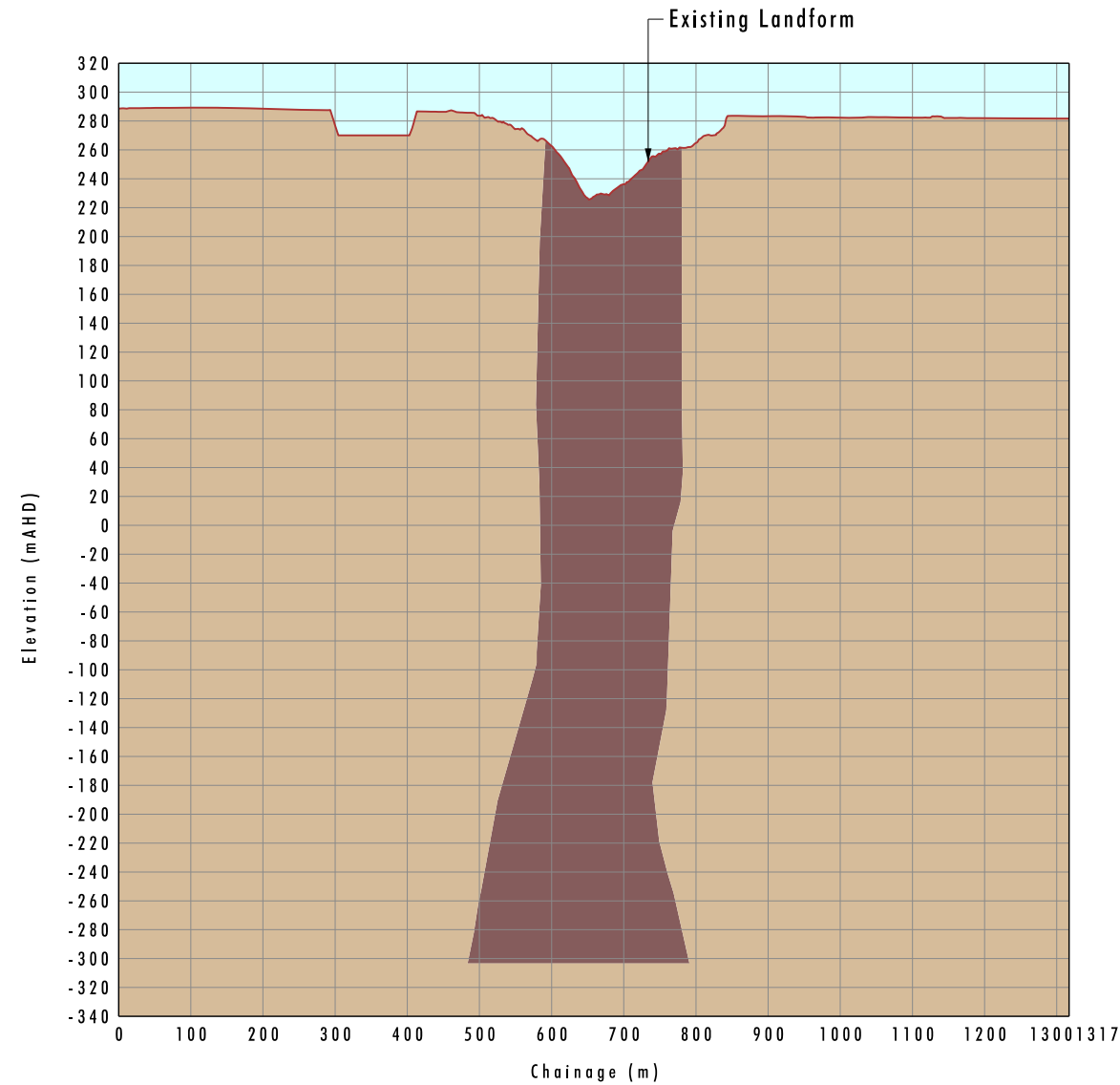
**E31N North-South**



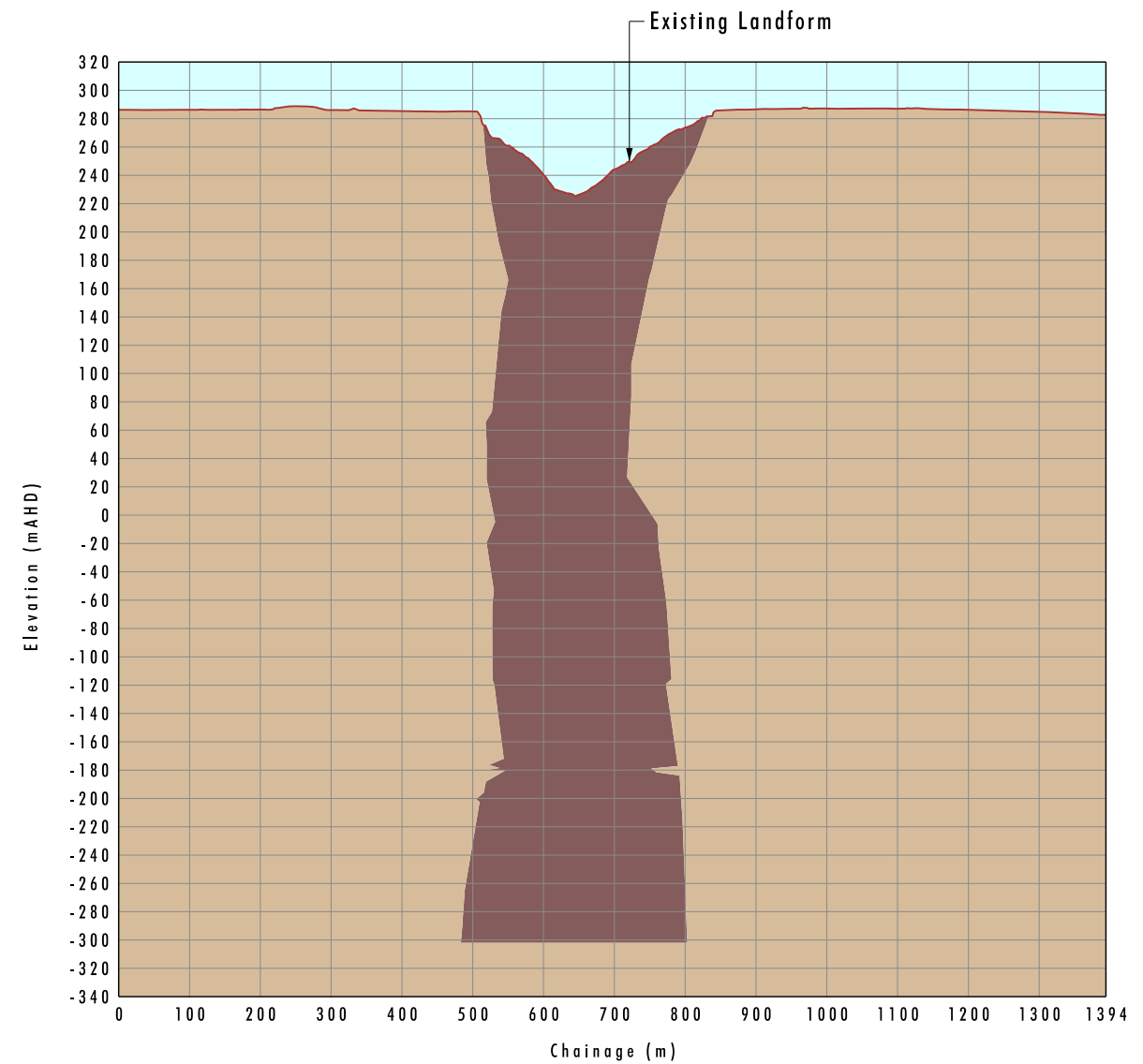
**E31 East-West**



**E31 North-South**



**E48 East-West**



**E48 North-South**

### Legend

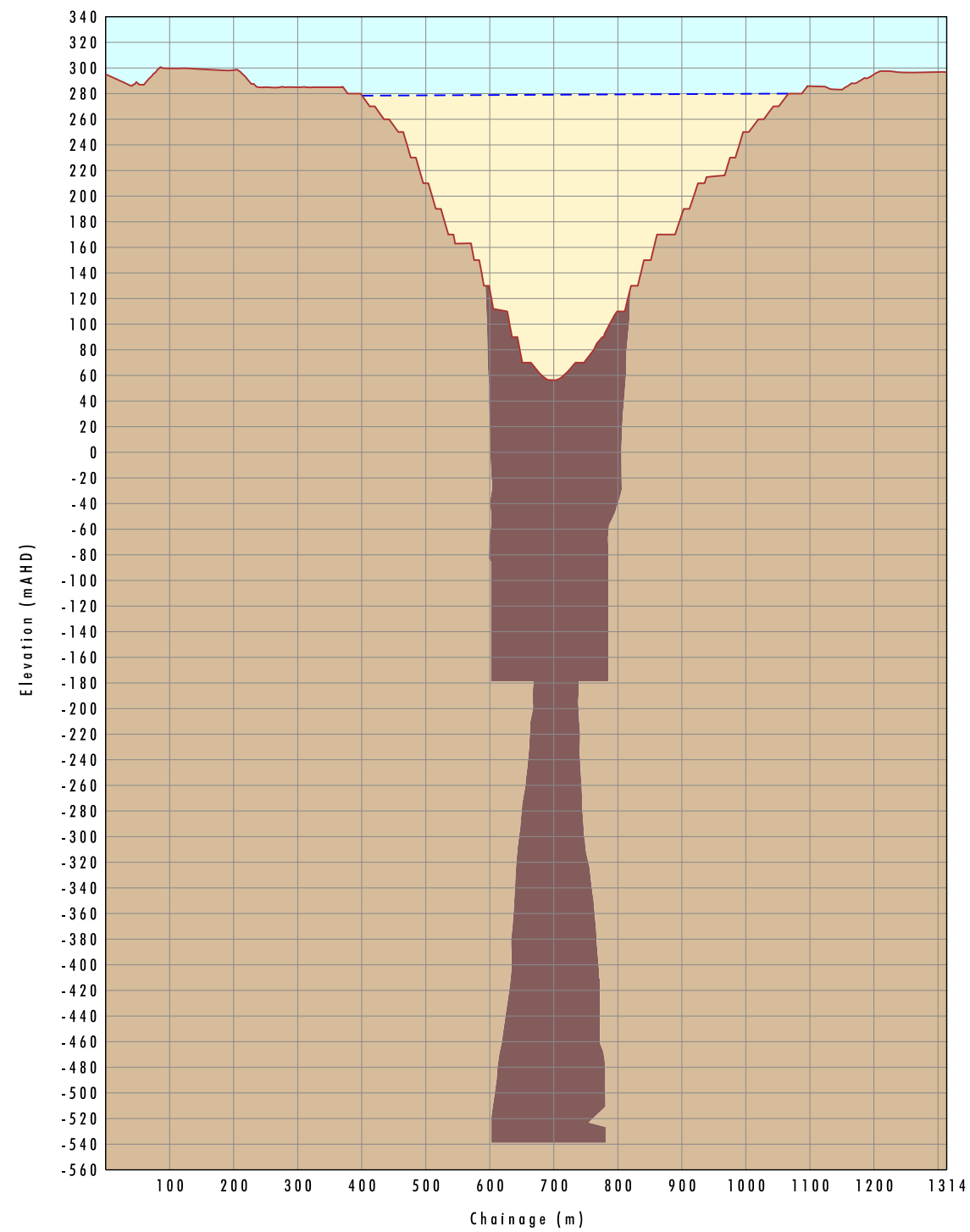
- Existing Surface Level
- Open Cut
- Underground Block Cave (Approximate Extent)
- Predicted Conceptual Open Cut Final Void

0 50 125 250m  
Vertical Scale

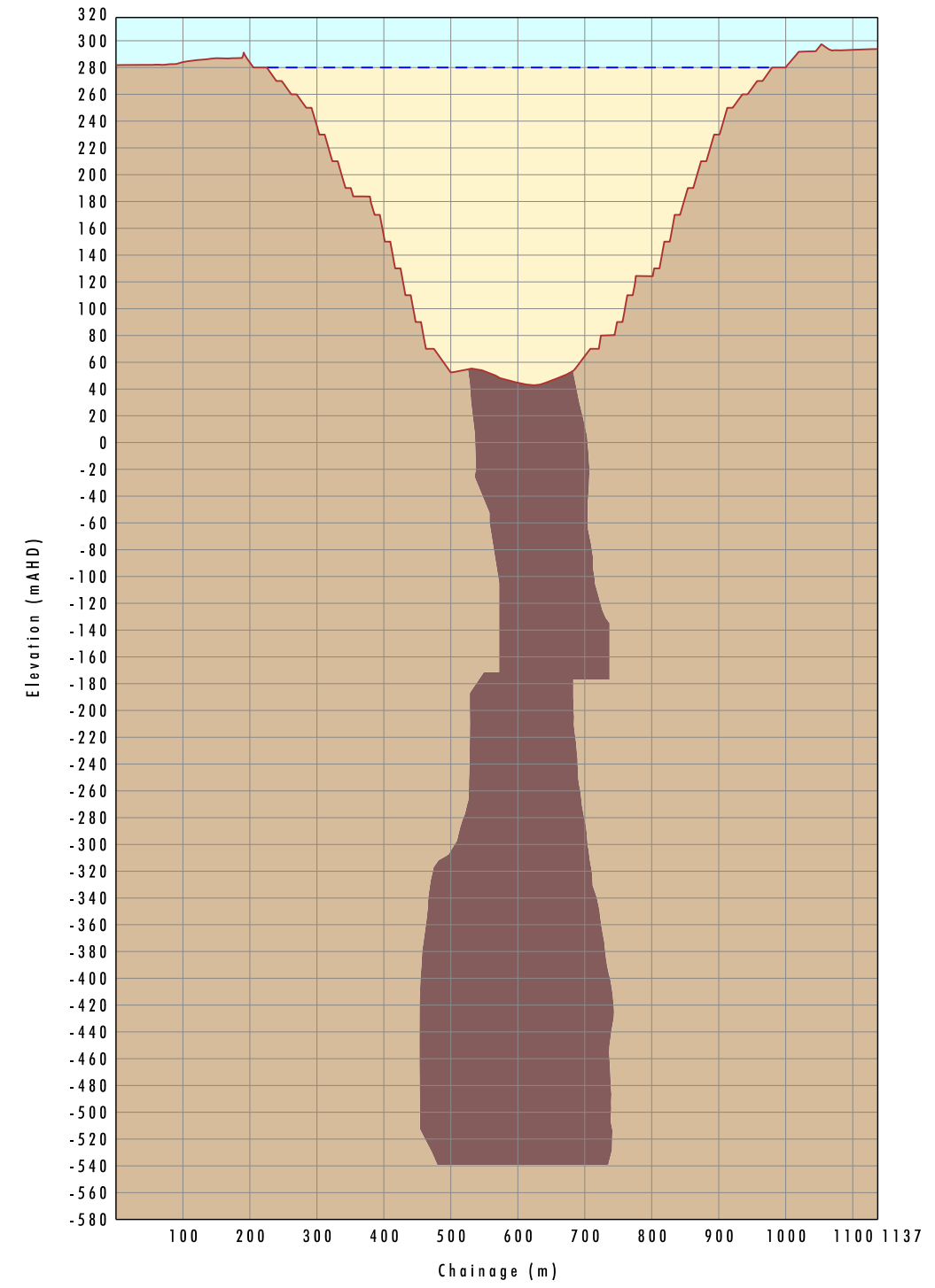
0 100 250 500m  
Horizontal Scale

**FIGURE 2.14**  
**Conceptual Mine Plan Cross Sections**





**E26 East-West**



**E26 North-South**

**Legend**

- Existing Surface Level
- Open Cut
- Underground Block Cave (Approximate Extent)
- Predicted Conceptual Open Cut Final Void

0 50 125 250m  
Vertical Scale

0 100 250 500m  
Horizontal Scale

**FIGURE 2.15**  
**Conceptual Mine Plan Cross Sections**



A brief description of the proposed open cut pits are provided below, with their locations onsite depicted in **Figure 1.2** and approximate extents shown in **Figures 2.13** to **2.15**:

- E26: The E26 open cut will be developed within the existing E26 subsidence zone. The E26 open cut will have an area of approximately 51 hectares, a depth of approximately 300 metres and will result in the resource extraction of approximately 17 Mt of ore on a campaign basis.
- E28/E28N: The E28 open pits are located adjacent to the existing E48 subsidence zone. The E28/E28N open cuts will have an area of approximately 5.9 hectares and 6.2 hectares respectively, to a depth of approximately 60 metres and will result in the resource extraction of approximately 3 Mt of ore on a campaign basis.
- E31/E31N: The E31 and E31N pits are located adjacent to the approved Rosedale TSF, to the south Northparkes Lane. The E31/E31N open cuts will have an area of approximately 6.3 hectares and 5.4 hectares respectively, to a depth of 80 metres and will result in the resource extraction of approximately 3 Mt of ore on a campaign basis.

Open cut methodologies, including blasting practices, will be carried out in accordance with previously approved open cut campaign operations as described in **Section 2.2.2**.

During blasting activities there may be a need for the closure of surrounding public roads where blasting is to be undertaken within 500 metres of the road. This will affect McClintock's Lane during periods of blasting activities within open cut areas. Further details on blasting activities and road closure management procedures are provided in **Section 5.5**.

### 2.3.4 Ore Handling, Processing, Stockpiling and Transport

The Project will not result in an increase in processing production rates, rather the development of additional resources (E31, E31N, E22, E28, E28N and E26 open cut) are proposed to maintain mill feed, and provide for an extension of the operating life of the Project. The Project will maintain its existing ore handling, processing, stockpiling and transport processes including maintenance of all existing connections between underground operations and the surface (i.e. access, ventilation, ore conveying/lifts, electricity reticulation and ancillary underground infrastructure). Existing stockpiles will be augmented as and when required to accommodate varying ore stockpile volumes (refer to **Section 2.2.3**). The location of the ore stockpiles will remain unchanged from the existing approved operations (refer to **Section 2.2**).

Copper concentrate generated by ore processing will continue to be transported to the Goonumbla rail siding via road haulage. As a result of the closure of Northparkes Lane (refer to **Section 2.3.9**) copper concentrate will be transported via a new mine access road connecting to Bogan road via an upgraded intersection for delivery at Goonumbla. From Goonumbla containers will continue to be exported via Port Kembla as described in **Section 2.2.3**.

### 2.3.5 Tailing Storage Facilities

A consolidated tailings strategy has been developed for the Project which is shown on **Figure 1.2** and includes:

- continuation of tailings disposal to existing and approved TSFs (TSF 1, 2, and TSF 1/TSF 2 infill) to the approved height of approximately 28 metres above ground;

- development of a new TSF 3, which will extend to the south from the southern embankment of TSF 2 to incorporate the approved TSF 3 (Rosedale) footprint to a height of approximately 28 metres above ground (refer to **Figure 1.2**); and
- development of additional raises on the approved TSF 4 (Estcourt) to be constructed to a height of approximately 28 metres above ground consistent with other TSFs.

TSF 3, which will commence construction in the initial stages of the Project (three to five years), will be developed in two cells. The northern cell will be developed to operate in conjunction with the Estcourt TSF on an alternating arrangement consistent with the existing onsite deposition strategy as described in **Section 2.2.4** above. This staged development will allow sufficient time for the E31 open cut resource to be extracted by campaign open cut mining and the use of the waste material from E31 to be used for the construction of TSF3 embankment walls. TSF 3, like previous onsite TSF's has been designed to provide:

- safe and permanent containment of all tailings solids;
- the recovery of free water for reuse within the processing plant;
- containment of all water under extreme rainfall conditions;
- maximum structural strength through the deposited tailings; and
- containment of all chemical residues.

Starter embankments for the proposed tailings facilities will be developed to an approximate height of 10 metres. The starter embankment will be excavated to an approximate depth of 1 metre in order to provide a suitable base for the development of tailings. Soil material stripped during construction of the tailings facility will be retained in stockpiles for use as part of rehabilitation and closure works. The stockpiles will be located within the disturbance footprint for the TSF 3 and/or within the existing disturbed areas on site.

TSFs will be raised using upstream construction methods. Each raise will consist of an approximate 3 metre high and 10 metre wide rock fill with a upstream slope of 2 horizontal: 1 vertical and a 3 horizontal: 1 vertical downstream slope. A cross-section of the typical construction design for the TSF is shown on **Figure 2.16**. The TSF walls are designed to adequately contain emplaced tails and seepage to an appropriate design level, in accordance with relevant requirements. As part of the construction of the TSF additional water management structures will be established to effectively capture and convey TSF seepage to the existing water management system. Further details on these controls are outlined in **Section 5.8**.

### 2.3.6 Waste Management

Existing waste stockpiles (refer to **Figure 2.4**) will continue to be utilised over the life of the Project. Additional waste material generated through the recommencement of onsite open cut mining will be incorporated into the existing waste emplacement and management system at NPM. The locations of proposed waste stockpiles are shown on **Figure 1.2**, and include:

- E31/E31N waste material will generally be directly relocated from the open cut mining area to the development of TSF 3 embankment walls (refer to **Section 2.3.5**);
- E26 waste material will generally be stockpiled adjacent to the existing E26 subsidence zone to a maximum height of approximately 25 metres above ground level; and



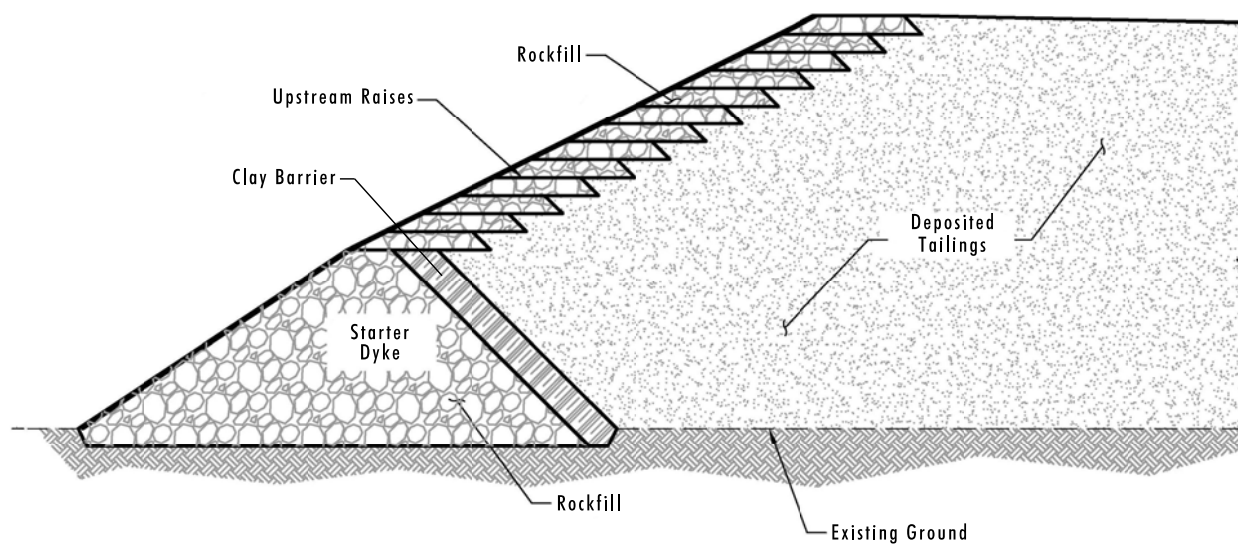


FIGURE 2.16

Conceptual Cross Section Typical TSF Construction

Source: Adapted from URS Australia Pty Ltd (2012)

Note: Not to scale

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- E28/E28N waste material will generally be stockpiled between the E28 and E28N open cut pits to a maximum height of approximately 30 metres above ground level.

The proposed waste stockpiles have been located within and/or in close proximity to existing operational areas to minimise areas of additional disturbance associated with the Project. Consistent with existing operations the materials stockpiled will be utilised as an alternate low grade ore for processing plant feed (as required), construction materials and/or remain stockpiled and rehabilitated upon cessation of use.

### 2.3.7 Water Management and Use

NPM will continue to obtain water from its existing access arrangements with PSC as described in **Section 2.2**. The Project does not result in increased processing rates and therefore water required from the Lachlan Valley borefield is not anticipated to increase above current levels.

NPM will continue to operate in accordance with its existing onsite water management system (WMS). The existing WMS at NPM will continue to be implemented to control and treat runoff from the site, with all pit water and mine surface runoff directed to the mine water management system. The existing WMS will be extended to incorporate the additional disturbance areas located within the Referral Area, integrating these areas into the existing surface water management control measures at NPM. Further details on the WMS for the Project are provided in **Section 5.8**.

### 2.3.8 Site Infrastructure and Services Infrastructure

NPM will continue to utilise existing site infrastructure (offices, workshops and car parking facilities) and services (telecommunications, electricity and waste water) as described in **Sections 2.2.7** and **2.2.8**. There are a number of services that will require relocation through the development of the Project. The relocation of these services, including power lines, will be located within existing disturbance footprints in consideration of engineering and environmental constraints. The conceptual location for relocated linear infrastructure (electricity and telecommunication services) is for co-location with the amended site access alignment (refer to **Section 2.3.9** and **Figure 1.2**) or otherwise located within existing and approved disturbance areas. The relocation of services will be designed and constructed in consultation with relevant service providers.

### 2.3.9 Site Access

Development of TSF 3 will result in the closure of the Northparkes Lane, the principal mine site access, in the initial stages of the Project (approximately one to five years). The existing mine access road will be replaced with an alternative site access to the south which will connect the existing McClintock's Lane to the existing internal access road between ore processing plant and underground operations offices (refer to **Figure 1.2**). The proposed access road will be approximately 25 metres wide and will consist of a sealed two way road, and provision of necessary services corridor (refer to **Section 2.3.8**).

McClintock's Lane, currently a non-sealed local road will require upgrades to facilitate increased traffic movements resulting from all mine site vehicles (including copper concentrate trucks) accessing site via McClintock's Lane to Bogan Road. In order to facilitate access to Bogan Road from McClintock's Lane upgrades to the Bogan Road/McClintock's Lane intersection will be undertaken. This will include widening and sealing of the existing section of McClintock's Lane between the proposed site access road and Bogan Road. Further details of the traffic infrastructure upgrades required for the Project is provided in **Section 5.9**.



Onsite car parking for staff will be retained in existing locations, adjacent to site offices. A new access control and visitor car parking facility will be developed at the intersection of McClintock's Lane and the relocated site access road (refer to **Figure 1.2**). The visitor car parking areas will comprise a sealed area containing approximately 25 marked car parking spaces.

### 2.3.10 Rehabilitation and Mine Closure

Mine closure planning has been a key consideration in the design of the Project, with the objective of maximising opportunities to achieve a sustainable rehabilitated landform post closure. The proposed base case mine closure strategy for the Project, as discussed in this section and detailed in **Appendix 4**, has been developed in consideration of the opportunities and constraints associated with the existing local and regional environment as well as operational considerations.

Rio Tinto has implemented a proactive approach to rehabilitation and mine closure by integrating closure planning into the life of mine planning process. Closure planning takes into consideration economic, social and environmental factors so that each of Rio Tinto's operations meet statutory requirements and achieves a sustainable post-closure land use.

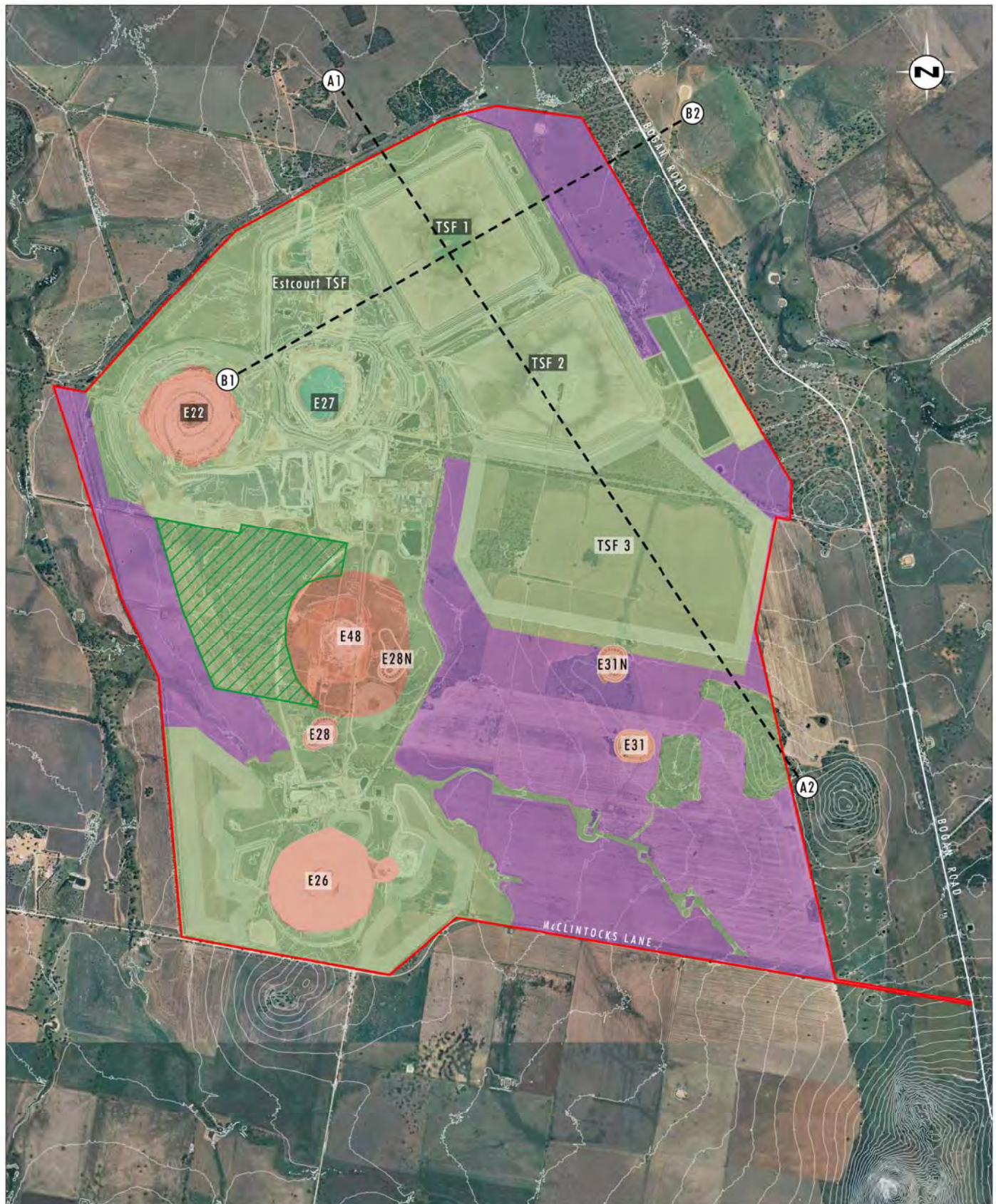
As an existing operation, a Closure Strategy and Closure Plan have been developed for NPM. It is envisaged that these documents will be updated following the approval of the Project to incorporate commitments outlined in this EA. It is noted that given the nature of NPM operational activities there is limited potential for an ongoing approach to progressive rehabilitation, aside from that required to manage specific environmental aspects (e.g. dust minimisation) and/or specific safety issues on site. This is primarily due the nature of the mining process, which is necessary to restrict access to subsidence areas, the availability of use of material stockpiles and the need for TSFs to remain 'open' for the life of the Project.

It is the intention that the Closure Strategy and Closure Plan will form the basis of the Decommissioning Plan. The Decommissioning Plan will be prepared five years prior to the estimated date of ceasing production and will provide an outline of the additional closure studies required to be undertaken in order to achieve successful closure of the site. As part of the development of the Decommissioning Plan, opportunities for parts of the Project Area to be used for other land uses will also be considered.

#### 2.3.10.1 Post Mining Land Use

There are a number of end land use options available to NPM. Based on site constraints and opportunities and for consistency with adjacent land uses, it is considered that the most sustainable final land use option for the majority of disturbed areas across the Project Area will be the establishment of native vegetation, with areas of native grassland as shown on **Figure 2.17**. As shown in draft conceptual final land use plan (refer to **Figure 2.17**) the final land use will also involve the maintenance of agricultural land, primarily for cropping. As shown on **Figure 2.17**, there are a number of restricted areas identified which are associated with the subsidence and open cut mining voids. As part of site decommissioning, NPM will ensure that these areas are geotechnically stable, with appropriate buffer areas maintained, and access appropriately restricted.

There are no specific regional strategic plans or resource management plans that define specific policy objectives for rehabilitation and/or land use within the Project Area or surrounds. The proposed final land use has been designed to be consistent with surrounding land uses, which are dominated by agricultural land uses, with isolated areas of native vegetation. The Project Area and surrounds is currently zoned RU1 Primary Production under the Parkes Local Environmental Plan (LEP). The proposed final land use is considered consistent with the objectives and intent of this land use zoning.



Source: NPM (2013), Google Earth (2010)

Note: Contour Interval 2m.

Refer to Figure 2.18 for Section Details.

0 0.5 1 2 km  
1:40 000

### Legend

- Project Area
- Agricultural Land Use
- Native Vegetation
- Restricted Land Use
- Limestone State Forest
- Cross Section Location

FIGURE 2.17

Proposed Final Land Use



The proposed final land use has been designed to contribute and enhance the rehabilitation activities currently completed by NPM, which include revegetation of drainage lines and paddock margins within NPM landholdings. In addition the proposed areas of native vegetation with open grassland are designed to contribute to the existing biodiversity offset area and vegetation corridors (including Travelling Stock Reserves (TSRs)) immediately east of the Project Area.

### 2.3.10.2 Post Mining Land form

The development of the proposed post-mining landform at NPM will aim to create a safe and stable landform that is generally compatible with the surrounding landscape. By the very nature of mining, there will be a variation created between the final landform and the surrounding otherwise flat and generally featureless topographic environment with the proposed final landform associated with TSFs and stockpiles likely to consist of low (15 metres to 30 metres) flat-topped mounds that will be locally prominent (refer to **Figure 2.17** and **2.18**).

The extent of open cut voids based on the conceptual mine plan are shown on **Figures 2.13** to **2.15**. The extent of subsidence associated with continued underground mining operations in E26 and E48 will be consistent with current approvals. The predicted extent of subsidence associated with the proposed E22 underground operations will remain within the existing disturbed areas associated with historical open cut mining of the E22 resource. As outlined further in **Section 5.14**, NPM will continue with extensive subsidence monitoring process to ensure the planned subsidence from block cave activities is actively managed and controlled over the life of the Project.

The potential for the open cut voids to be filled with tailings will be further investigated over the life of the Project, although the subsidence voids are expected to remain. Surface water management structures created during the life of mine would remain as part of the final landform drainage (refer to **Section 5.8**).

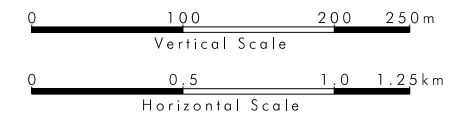
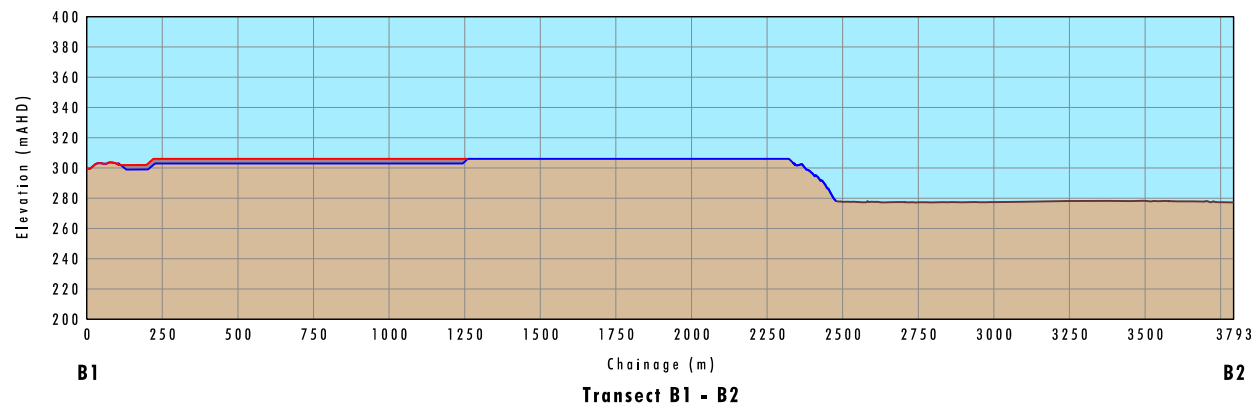
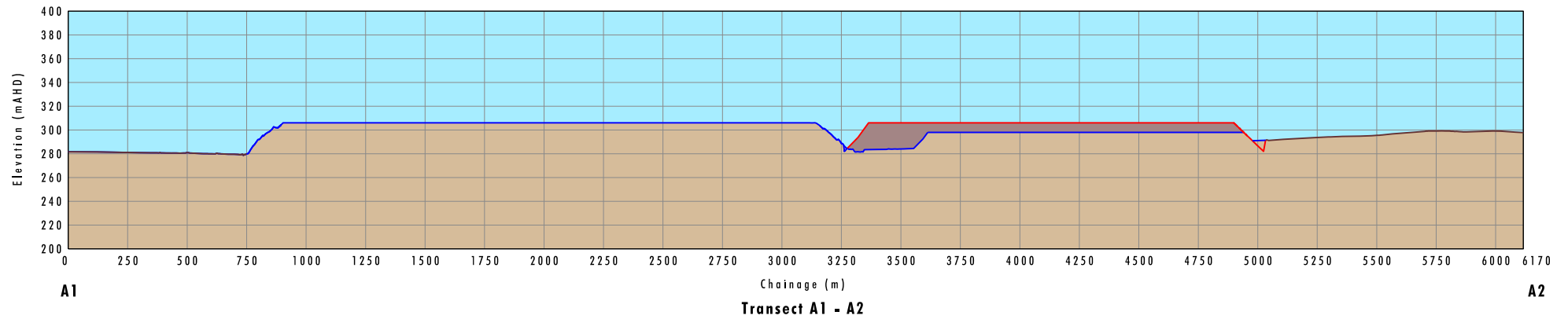
### Final Void and Subsidence Zone Management

On completion of mining each void, the option of utilising the voids as emplacement areas for tailings disposal will be investigated, and where considered viable will be developed in accordance with relevant approvals for tailings emplacement. This would result in complete or partial filling of the voids and subsequent capping and rehabilitation to the final landform.

As part of the Project, NPM will review and update the relevant aspects of the Landscape Management Plan (LMP) and Mining Operations Plan (MOP). The LMP will remain an iterative document over the life of mine (LOM) and will be able to evolve along with the ongoing operations, and will suitably consider and have reference to changing stakeholder expectations, market demands and the potential discovery and development of future ore bodies. The MOP will provide for detailed mine operational management, with a specific closure MOP developed later in the Project life.

### Tailings Dam Decommissioning

The TSFs on site will be filled and shaped to the proposed final landform levels and subsequently capped. The primary objective of the capping design will be to minimise the potential for exposure of potentially environmentally sensitive tailings material in the rehabilitated landform. Following capping, these areas will be revegetated in accordance with the rehabilitation strategy to achieve the conceptual final land use of native vegetation with open grassland as shown in **Figure 2.17**.



### Legend

- Approved Final Landform Cross Section
- Proposed Final Landform Cross Section
- Natural Ground Surface

**FIGURE 2.18**

**Final Tailings Landform Cross Sections**



NPM is currently in the process of trialling capping techniques to determine the optimum depth and composition of capping material to be used on the TSF's. The final capping strategy will be determined in consultation with Division of Resources and Energy (DRE) and documented within future MOPs and updates to the LMP.

### **2.3.10.3 Closure and Rehabilitation Criteria**

Closure and rehabilitation completion criteria are objective target levels or values assigned to a variety of indicators (i.e. species diversity, groundcover etc.), which can be measured against to demonstrate progress and ultimate success of rehabilitation. As such, they provide a defined end point, at which point in time rehabilitation can be deemed successful and the lease relinquishment process instigated. Completion criteria, determined in consultation with the relevant stakeholders, will be utilised to demonstrate achievement of rehabilitation objectives. The achievement of the completion criteria will be monitored and reported within the Annual Review.

The preliminary closure and rehabilitation completion criteria for the Project are outlined in **Table 2.6**.

**Table 2.6 - Preliminary Mine Closure and Rehabilitation Completion Criteria**

Aspect	Objective	Preliminary Closure Criteria
Decommissioning	All infrastructure that is not to be utilised as part of the future intended land use are removed to make the site safe and free of hazardous materials.	<ul style="list-style-type: none"> <li>All surface infrastructure which does not have a potential future use associated with the post mining land use will be removed, unless such removal has a greater environmental impact than rehabilitating the area with the infrastructure remaining in place.</li> <li>Services: removal of all services (power, water, communications), which don't have potential uses.</li> <li>Office and Workshop: demolition and removal of all offices and workshop related facilities including refuelling facilities.</li> <li>Pumps, pipes and power: removal of water management infrastructure. Where underground pipelines are to remain <i>in situ</i>, the location of the infrastructure has been marked on the final landform plan and a suitable caveat developed to provide that they are readily identifiable for future land holders.</li> <li>Relevant water management structures will be retained to continue to manage water from the rehabilitated landform.</li> <li>Laydown Areas: removal of all plant and equipment.</li> </ul>
	All infrastructure that is to remain as part of the future land use is safe and does not pose any hazard to the community.	<ul style="list-style-type: none"> <li>Potential hazards (i.e. electrical, mechanical etc.) have been effectively isolated.</li> <li>The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use.</li> <li>Appropriate security measures have been implemented to minimise the potential for unauthorised access during the period that the site is transitioned to the intended final land use.</li> </ul>
	There is no residual soil contamination on site that is incompatible with intended land use or that poses a threat of environmental harm.	<ul style="list-style-type: none"> <li>Contamination will be appropriately remediated so that appropriate guidelines for the intended final land use are met.</li> </ul>



**Table 2.6 - Preliminary Mine Closure and Rehabilitation Completion Criteria (cont.)**

Aspect	Objective	Preliminary Closure Criteria
Landform Establishment	Landform suitable for final land use and compatible with surrounding landscape.	<ul style="list-style-type: none"> <li>Landforms have been designed to minimise the impact on visual amenity where possible and blend with surrounding landscape.</li> <li>No significant erosion is present that would constitute a safety hazard or compromise the capability of supporting the end land use.</li> <li>Drainage structures are stable and there is no evidence of overtopping or significant scouring as a result of runoff.</li> <li>Surface layer is free of any hazardous materials.</li> <li>Any final voids and subsidence pit slopes have been assessed by a qualified geotechnical engineer to validate that they are either stable or that suitable mechanisms have been installed to minimise safety risks to the community as low as reasonably possible.</li> <li>Areas of restricted land use (including subsidence and open cut voids) will be appropriately secured to restrict access.</li> <li>Runoff water quality from rehabilitation areas is within the range of water quality data recorded from analogue sites and does not pose a threat to downstream water quality.</li> </ul>
Growing Media Development	Growing media is capable of supporting sustainable vegetation growth.	<ul style="list-style-type: none"> <li>The rehabilitation surface is a suitable growing medium.</li> <li>Soil pH to be in the range of analogue sites.</li> <li>Monitoring demonstrates soil profile development in native rehabilitated areas (e.g. development of organic layer, litter layer).</li> </ul>
Agricultural land use	Land is returned to a condition that sustains agricultural land use and requires a level of management that is comparable to adjacent agricultural areas.	<ul style="list-style-type: none"> <li>In areas returned to cropping land, cropping yields returns are similar to nearby properties.</li> <li>In areas returned to broad-acre grazing, grazing returns are sustainable and pastures have similar yields to nearby properties.</li> <li>Pasture species to consist of grasses and legumes appropriate to the district and recognised as suitable for grazing.</li> <li>Weed and feral animal populations are appropriately managed.</li> </ul>

**Table 2.6 - Preliminary Mine Closure and Rehabilitation Completion Criteria (cont.)**

Aspect	Objective	Preliminary Closure Criteria
Native Vegetation	Revegetation is sustainable for the long term and only requires maintenance that is consistent with the intended final land use.	<ul style="list-style-type: none"> <li>• Revegetation areas contain flora species assemblages characteristic of the desired native vegetation communities.</li> <li>• Second generation trees are present or likely to be, based on monitoring in comparable older rehabilitation sites (i.e. evidence of fruiting of native species observed).</li> <li>• Rehabilitated areas provide a range of vegetation structural habitats (e.g. eucalypts, shrubs, ground cover, developing litter layer, etc.) to encourage use by native fauna species.</li> <li>• The percentage of the tree population in healthy condition is comparable to reference sites as indicated by long term monitoring.</li> <li>• There is no significant weed infestation such that management requirements are similar to reference native vegetation sites.</li> <li>• Feral animal populations are appropriately managed.</li> <li>• Appropriate bushfire hazard controls have been implemented on the advice from the NSW Rural Fire Service (RFS).</li> </ul>



The preliminary closure completion criteria will be reviewed and revised throughout the Project to appropriately incorporate the results of rehabilitation monitoring programs, relevant research trials, and consideration of stakeholder feedback. It is envisaged that this process will be actively managed through the MOP and subsequent annual report processes. The completion criteria will be finalised as part of the detailed mine closure planning process, which will commence at least five years prior to mine closure, and be presented in the Decommissioning Plan for approval by the relevant government agencies.

## 2.4 Consideration of Alternatives

NPM has undertaken detailed concept studies into the proposed mining operation as part of pre-feasibility investigations for the Project. Numerous alternative mine and infrastructure plans have been considered. Minimising environmental and community impacts and maximising economic resource recovery have been major considerations in the evaluation of alternative options.

The options assessed included resource processing options ranging from the proposed continued operation through the existing processing plant to the development of new mine/concentrator facilities ranging from 7 to 50 Mtpa. This review concluded that the maximum value was achieved through a continued operations project as described in **Sections 2.2 and 2.3**, which most appropriately provides a balance between capital expenditure and operating costs, in the current macroeconomic environment when capital is constrained across the mining sector. Extensive review of larger expansion scenarios was found to not have sufficient resource (tonnage grades) to justify the significant capital costs associated with the establishment of multiple additional block caves, under current market conditions.

The Project provides significant operational and capital efficiencies to the approved NPM operations including:

- proposed open cut mining operations provides for operational resilience through providing for additional/alternate ore supply to maintain mill feed over the life of mining operations;
- proposed E26 open cut mine will maximise resource recovery in this ore body through enabling shallower areas of the ore body to be recovered that have not been accessed by historical and ongoing underground mining in E26;
- proposed E22 underground mining operations provides for the efficient use of existing underground mining infrastructure to maximise resource recovery within this ore body that has not been previously recovered through historical open cut mining activities;
- proposed construction of the TSF 3 to leverage off the existing southern wall of TSF 2 provides a more capital efficient design to undertake the construction and operations of all of the approved TSF at NPM; and
- the increase in mine life will enable long term planning and additional certainty as the proposed 19 year mine life is the longest in the history of NPM since granting of original development consent in 1993.

NPM has also considered the option of not proceeding with the Project. This option was not considered appropriate as it is expected that the environmental and social impacts of the Project can be effectively managed, and not proceeding would result in the loss of the substantial economic benefits of the Project, as defined below.

Through consolidating existing approvals into a single planning approval, NPM is committed to implementing integrated environmental management strategies and systems that meet contemporary regulatory and community expectations.

NPM provides substantial economic benefits at Federal, State and Local levels while maintaining a strong working relationship with the community and implementing sound environmental management practices. NPM will build on these attributes of the existing operations through continued operations as proposed through this Project.

The Project will result in a number of environmental, economic and social benefits which are described in detail in **Section 5.0**. Some of the specific benefits associated with the Project are outlined below:

- continued processing of up to 8.5 Mtpa of ore over an extended mine life until end of 2032 (an additional seven years of mining operations to that currently approved);
- capital expenditure of approximately AUS\$190 million over the LOM;
- the Project is anticipated to significantly contribute at a local, regional and State level in direct and indirect output;
- the continued benefit of the additional flow on of economic benefit to the community, for a further seven years;
- payment of significant royalties and payroll tax to the State of NSW; and
- significant export earnings for Australia.

## **Section 3.0**



**Planning Considerations**



## 3.0 Planning Considerations

The following section identifies relevant State and Commonwealth legislation and discusses the application of these planning provisions to the Project.

### 3.1 Commonwealth Legislation

A summary of the Commonwealth legislation potentially relevant to the Project is provided in **Table 3.1**.

**Table 3.1 – Relevance of Commonwealth Legislation to the Step Change Project**

Act	Comments	Approval Required?
<i>Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>	<p>Under the EPBC Act the approval of the Commonwealth Minister for the Environment is required for any action that may have a significant impact on matters of national environmental significance, including world heritage properties, National Heritage Places, Ramsar wetlands, Great Barrier Reef Marine Park, Commonwealth marine area, threatened ecological communities, threatened species, and migratory species. Other matters that require assessment include Commonwealth land and heritage places, listed marine species, whales/cetaceans, critical habitats and Commonwealth reserves.</p> <p>As outlined in <b>Section 5.6</b>, the ecological assessment undertaken for the Project identified a number Threatened Ecological Communities (TECs) and species listed under the EPBC Act. The assessment provides that the Project is unlikely to have a significant impact on any relevant matters of national environmental significance.</p>	Yes. Project Declared a Controlled Action on 21 May 2013. Assessment subject to Preliminary Documentation to be lodged with DSEWPC
<i>Native Title Act 1993</i>	<p>The <i>Native Title Act 1993</i> is administered by the National Native Title Tribunal who are responsible for maintaining a register of native title claimants and bodies to whom native title rights have been gained. The Act prescribes that Native Title can be extinguished under certain circumstances, including the granting of freehold land. Areas of land within the Project Area where native title may not have been extinguished include public road reserves and Crown land.</p> <p>Land located adjacent to the Goonumbla rail siding is subject to Aboriginal Land Claims (ALC13851, ALC19269 and ALC4728). There is no registered Native Title claim identified over this area. In the event that a native title claim exists over the Crown land or roads, the relevant native title holders will be consulted either prior to the granting of a mining lease over these areas or prior to the closure of any roads.</p>	No

## 3.2 New South Wales Legislation

### 3.2.1 *Environmental Planning and Assessment Act 1979*

#### 3.2.1.1 Major Development

The Project is for the purpose of mining and employs more than 100 people and has a capital investment value of greater than \$30 Million. As such it is a class of development listed under Clause 5(1)(c) of Schedule 1 of 'State Environmental Planning Policy (Major Development) 2005' (SEPP Major Development) and it therefore requires approval under Part 3A of the EP&A Act.

Accordingly, the Project was declared a major project by the Director-General of the (former) NSW Department of Planning pursuant to clause 6(1) of SEPP Major Development, on 9 March 2011. A Preliminary EA followed on 2 June 2011 with resulting DGR's issued on 3 August 2011.

In 2011 the NSW Government repealed Part 3A of the EP&A Act and announced that it would stop accepting any new projects in the Part 3A assessment system. This system has been replaced by the State Significant Development and State Significant Infrastructure assessment systems which commenced on 1 October 2011.

The Project is classified as a 'transitional Part 3A project' in accordance with Schedule 6A clause 2(1)(c) of the EP&A Act as the DGR's were issued on 3 August 2011 and the Director-General has extended the time for lodging this EA. As such, the Project will be determined under the provisions of Part 3A of the EP&A Act, pursuant to Schedule 6A clause 3(1) of the EP&A Act.

Since the issuing of the DGR's, the Project has been refined by NPM. The DP&I have subsequently reconfirmed the Project as a 'transitional Part 3A project'. A modified set of DGR's were notified to NPM on 11 March 2013 and are attached in **Appendix 2**.

As the Project will be determined under Part 3A of the EP&A Act, the Minister for Planning and Infrastructure or his delegate will determine the Project Application. In addition, the following provisions of the EP&A Act are relevant to the approvals process under Part 3A of the Act.

#### 3.2.1.2 Application of Environmental Planning Instruments

The Project is located wholly within the area to which the Parkes LEP 2012 (Parkes LEP) applies.

Section 75J(3) allows (but does not require) the Minister to take into account environmental planning instruments which would not apply to the Project under Section 75R when determining a project application. Section 75R of the EP&A Act provides that environmental planning instruments, except SEPPs that apply to particular projects, do not apply to projects approved under Part 3A of the Act. Notwithstanding this, this EA considers the SEPPs detailed below.

### 3.2.1.3 Permissibility

Under Clause 7 of SEPP (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP), underground mining is permissible with consent on any land and open cut mining is permissible with consent on land where agriculture may be carried out with or without consent. The land which is the subject of the Project Application is located wholly within Parkes LEP Zone RU1 Primary Production. Extensive agriculture is permitted without consent in that zone. The Project is therefore permissible with consent.

The Minister may therefore determine the project without the need for a concept plan.

### 3.2.1.4 Approvals Legislation Not Applicable

Under Section 75U of the EP&A Act, if the Project is granted project approval under Part 3A of the EP&A Act, the following authorisations (refer to **Table 3.2**), which may otherwise have been relevant, will not be required to undertake the Project.

**Table 3.2 - Authorisations Not Applicable to the Project**

Act	Approval
<i>Fisheries Management Act 1994</i> (FM Act)	Permit for works or structures within a waterway.
<i>Heritage Act 1977</i>	Disturbance to an item listed on State Heritage Register or Interim Heritage Order; Excavation permit.
<i>National Parks &amp; Wildlife Act 1974</i> (NPW Act)	s87 preliminary research permit; s90 consent to destroy relics.
<i>Water Management Act 2000</i> (WM Act)	Water use approval, water management work approval or activity approval.
<i>Native Vegetation Act 2003</i>	Consent for the clearing of native vegetation.
<i>Threatened Species Conservation Act 1995</i> (TSC Act)	Licence to harm or pick threatened species, populations or ecological communities or habitat.

### 3.2.1.5 Approvals Legislation to be Applied Consistently

If the Project is granted project approval under Part 3A of the EP&A Act, authorisations referred to in **Table 3.3** that will be required for the Project must not be refused by the relevant approval authority and must be substantially consistent with the terms of the Project approval.

**Table 3.3 - Approvals Legislation to be Applied Consistently to Project Approval**

Act	Approval	Authority
<i>Mining Act 1992</i> (Mining Act)	Mining Lease amendments as required for the Project.	Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS) (DRE).
PoEO Act	EPL amended as required.	OEHL.
<i>Roads Act 1993</i> (Roads Act)	Permit to impact on a public road.	Local roads – PSC. Crown roads – Department of Primary Industries. State roads – NSW Roads and Maritime Services (RMS).



### 3.2.2 Other State Legislation

A summary of State Legislation relevant to the Project is provided in **Table 3.4**.

**Table 3.4 – Summary of State Legislation and Relevance to the Project**

Planning Provision	Comments	Further Approval Required?
<i>Occupational Health and Safety Act 2000</i> (OH&S Act)	<p>On 1 September 2005 the <i>Dangerous Goods Act 1975</i> was repealed by the <i>OHS Amendment (Dangerous Goods) Act 2003</i> and the supporting OHS Amendment (Dangerous Goods) Regulation 2005.</p> <p>The changes mean that dangerous goods are now regulated under the OH&amp;S Act and the Occupational Health and Safety Regulation 2001.</p> <p>There are no specific licensing or approval requirements for the management of dangerous goods under the OH&amp;S Act and any dangerous goods at the facility will be managed within the Occupational Health and Safety management framework established by the OH&amp;S Act. All people with unsupervised access to explosives or concentrated ammonium nitrate must now be licensed.</p>	No
<i>Crown Lands Act 1989</i> (Crown Lands Act)	<p>The Crown Lands Act provides for the administration and management of Crown land in the eastern and central divisions of NSW. Crown land may not be occupied, used, sold, leased, dedicated, reserved or otherwise dealt with unless authorised by this Act or the <i>Crown Land (Continued Tenures) Act 1989</i>. The Minister may grant a 'relevant interest' such as a lease, licence or permit, over Crown land for the purpose of any infrastructure, activity or other purpose that the Minister thinks fit.</p> <p>The Project Area contains Crown land. The Project design and assessment considers the impacts to Crown lands.</p>	Yes
WM Act	<p>The Project will involve interactions with surface water and groundwater which is the subject of Water Sharing Plan (WSP). The WSPs relevant to the Project include:</p> <ul style="list-style-type: none"> <li>• WSP for Lachlan River Regulated Water Source 2003;</li> <li>• WSP for the Macquarie and Cudgegong Regulated Rivers Water Source 2003;</li> <li>• WSP for Lower Lachlan Groundwater Source 2003; and</li> <li>• WSP for Lower Macquarie Groundwater Sources 2003.</li> </ul> <p>The WSPs for the Upper Macquarie and Upper Lachlan Groundwater Sources is in preparation and are due for implementation.</p> <p>NPM already hold a number of water access licences under the WM Act. As the existing water supply arrangement will continue in accordance with approvals and licences, no further approvals are required.</p>	No

**Table 3.4 – Summary of State Legislation and Relevance to the Project (cont.)**

<b>Planning Provision</b>	<b>Comments</b>	<b>Further Approval Required?</b>
<i>Water Act 1912</i> (Water Act)	The licensing provisions of the Water Act still apply. The Water Act is administered by DTIRIS (Office of Water). Under the Act, a permit and/or licence must be obtained to extract surface water (Part 2 of the Act) or groundwater (Part 5 of the Act). NPM already holds a number of licences for interception, monitoring and extraction bores. An approval under Part 5 of the Act will be required for the Project to intercept and extract any additional groundwater from mine workings and for any proposed groundwater monitoring bores.	Yes, where required
<i>Dams Safety Act 1978</i> (Dams Safety Act)	This Act requires that the NSW Dams Safety Committee (DSC) periodically review large dams that may constitute a hazard to human life and property. These dams are known as prescribed dams and are listed in Schedule 1 of the Dams Safety Act. Any new prescribed dams are to be designed to the satisfaction of the DSC. Three tailings dams at the Project site are listed under Schedule 1 of the Act. Proposed extension to tailings dams will be subject to assessment in accordance with the DSC requirements. It is likely that they will be prescribed under the Dams Safety Act. NPM consult regularly with the DSC regarding the operation of the sites existing scheduled dams.	Yes
<i>Environmentally Hazardous Chemicals Act 1985</i> (EHC Act)	Under the EHC Act a licence is required for any storage, transport or use of prescribed chemicals. Should such a licence be required under this Act during the life of the Project, North Mining or the relevant sub-contractor will obtain a licence prior to the storage, transport or use of prescribed chemicals.	No

### 3.3 State Environmental Planning Policies

#### 3.3.1 State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33)

SEPP 33 requires the consent authority for development under Part 4 of the EP&A Act to consider whether an industrial proposal is a potentially hazardous industry or a potentially offensive industry. A hazard assessment is completed for potentially hazardous or potentially offensive development to assist the consent authority to determine acceptability of a Project.

While SEPP 33 does not apply, an assessment has been carried out and the existing NPM Operations are not classed as hazardous or offensive development under SEPP 33. As the Project is a consolidation and extension of existing mining operations within approved mining leases, the Project is not considered potentially hazardous or potentially offensive.

The DGR's for the Project include the requirement to assess potential hazards including a detailed description of the management of process chemicals including transport storage and handling. This is provided in **Section 5.16.1**.

### 3.3.2 State Environmental Planning Policy 44 – Koala Habitat Protection

SEPP 44 requires that any development application under Part of the EP&A Act in a SEPP 44 specified Local Government Area (LGA), affecting an area of 1 hectare or greater, must be assessed under SEPP 44. Assessment under SEPP 44 is based on an initial determination of whether the land constitutes potential koala (*Phascolarctos cinereus*) habitat.

While SEPP 44 does not apply to the Project, an assessment undertaken in accordance with this SEPP indicated that three SEPP 44 tree species were recorded within the proposed disturbance area. The proposed disturbance area is therefore considered to provide 'potential koala habitat' as described by SEPP 44.

As such, further assessment was undertaken as if the SEPP applied, as described in **Section 5.6**.

### 3.3.3 State Environmental Planning Policy - (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP)

The Mining SEPP repeals SEPP No. 11 - Traffic Generating Development, SEPP No. 37 - Continued Mines and Extractive Industries and SEPP No. 45 - Permissibility of Mining.

With regards to mining, the Mining SEPP outlines where various minerals activities are permissible both with and without development consent. The Mining SEPP also defines mining developments that are prohibited, exempt or complying developments.

Under Clause 12 and 13 of the Mining SEPP, a consent authority under Part 4 of the EP&A Act must consider the compatibility of a mining development with other surrounding land uses including existing mines. While these provisions do not apply to the Project, a description of surrounding land uses and potential interactions with the Project are provided in **Section 5.2**.

Similarly, clause 14 of the SEPP does not apply to the Project but has been taken into account as part of this EA. Clause 14 requires a consent authority to apply consent conditions, where necessary, that ensure the Project is undertaken in an environmentally responsible manner. In addition, the consent authority must also consider resource recovery, waste minimisation, transportation of material via the public road system and rehabilitation needs associated with the Project.

A consent authority under Part 4 of the EP&A Act must also consider an assessment of the greenhouse gas (GHG) emissions, including downstream emissions, of the development. The determination must be made in regard to any applicable State or national policies, programs or guidelines concerning GHG emissions. Again, while this does not apply to the Project, a full GHG and Energy Assessment, including a quantitative analysis of the Scope 1, 2 and 3 emissions from the Project, and a qualitative assessment of the impacts of these emissions, was undertaken for the Project (refer to **Section 5.13**).



### 3.3.4 State Environmental Planning Policy 55 - Remediation of Land (SEPP 55)

SEPP 55 aims to provide a state-wide planning approach to the remediation of contaminated land and to reduce the risk of harm to human health and the environment by consideration of contaminated land as part of the planning process. Under SEPP 55, a consent authority must not consent to the carrying out of development on land unless it has considered potential contamination issues.

There may be potential contamination issues within the Project Area. While SEPP 55 does not apply by its terms to the Project, potential contamination issues will be assessed and dealt with in the mine closure and decommissioning processes (refer to **Section 2.3.10**). The Project will be designed to prevent contamination and the storage and handling of chemicals will be undertaken in accordance with Australian Standards and relevant OEH guidelines. A closure and decommissioning strategy, including a contaminated land management strategy, will be developed for the decommissioning and closure of the Project in consultation with DRE. This management strategy will incorporate the investigation and remediation of any contaminated land and will be included in MOPs submitted to DRE for approval should this Project be approved.

## **Section 4.0**



Stakeholder Consultation

## 4.0 Stakeholder Consultation

### 4.1 Authority Consultation

The DGR's for the Project originally issued by DP&I on 3 August 2011 and updated 11 March 2013. These DGR's include a specific requirement for an appropriate level of consultation with relevant local, State and Commonwealth government authorities. The DGR's specify consultation with the following government authority stakeholders:

- Department of Sustainability, Environment, Water, Population and Communities (DSEWPC);
- OEH (including its Heritage Branch);
- Environment Protection Authority (EPA);
- Department of Primary Industries (Including NSW Office of Water (NOW), NSW Forestry, Agriculture and Fisheries sections, Catchments and Lands (Crown Lands Division));
- NSW Trade & Investment – DRE;
- Transport for NSW (including the Centre for Transport Planning, RMS);
- DSC through ongoing operational communications with NPM in relation to existing and proposed scheduled dams;
- Mines Subsidence Board (not considered relevant for Project<sup>1</sup>);
- Forbes Shire Council (FSC); and
- PSC.

The DGR's also require that the processes and outcomes of the consultation process be described within the EA and this is provided below.

There has been extensive consultation with government authorities throughout the assessment process. Specific consultation with government authorities has included:

- government agency review of Preliminary Environmental Assessment (PEA) and provision of comments to inform original and revised DGR's;
- meetings with the Mayors and Councillors of both Parkes and Forbes LGAs on numerous occasions resulting in:
  - the formalisation of a Voluntary Planning Agreement (VPA) for the Project with PSC;
  - FSC resolving on the 18 April 2013 to support the Project, subject to not exceeding the existing permissible water extraction volumes;
- regular meetings with key staff of both Parkes and Forbes Council's executive and officers in relation to the Project;

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<sup>1</sup> The NSW Mine Subsidence Board's jurisdiction developed in accordance *Mine Subsidence Compensation Act* relates specifically to the management of subsidence resulting from coal mining activities. Northparkes Mines is a copper gold mine which is not located in an identified mine subsidence district.



- high level briefings have been provided to key agencies including DTIRIS, DP&I, OEH, NOW and DSEWPC, in relation to the broader context of the Project;
- detailed briefings with specific agencies on key environmental assessment issues including OEH in relation to cultural heritage, air quality and noise, and NOW in relation to potential groundwater impacts of the Project;
- specific consultation with DSEWPC regarding referral of EPBC matters, including the provision of a referral under the EPBC Act; and
- specific consultation with DP&I regarding the Project application processes including addressing the DGR's for the Project and EA outcomes.

In addition to the specific consultation outlined above, there has been extensive correspondence, telephone calls and discussions with numerous agencies throughout the assessment process. The key issues identified through this consultation process have been captured in the DGR's for the Project. Where additional specific issues associated with the Project were raised by agencies, these have been specifically addressed in the EA, as detailed in **Section 5.0**.

## 4.2 Other Stakeholder Consultation

### 4.2.1 Community Consultation

Community consultation with regard to the Project has been ongoing since 2011. This has been in addition to the ongoing community consultation process managed through NPM's Site wide Communication (Internal and External) Management Plan (2009a). Detail regarding community consultation and feedback received during this process is provided in as part of the Social Impact Assessment (SIA) included as **Appendix 16** and summarised in **Section 5.17.1**.

The process and frequency of ongoing communication NPM uses with stakeholders are identified in **Table 4.1**.

**Table 4.1 – Internal and External Communication Engagement Processes**

Type	Stakeholder	Engagement Process	Frequency
External	Neighbours	Hotline	Continual
		Phone and face to face meetings	Continual
		Neighbours Meetings	Six monthly
	Community	Community Consultative Committee (CCC)	Six monthly
		Website	Continual
		Media Releases and Communication	As required
		Participation and attendance in local events	Continual
		Fact sheets, letters and other written materials	Continual
		Parkes Chamber of Commerce	Monthly
		Parkes Borefield (Southern Cross Landholders)	Quarterly
		Sustainable Development Report	Annually
	Government Engagement	Ministerial Briefs	As required
		Local Government Briefs	As required

**Table 4.1 – Internal and External Communication Engagement Processes (cont.)**

Type	Stakeholder	Engagement Process	Frequency
External (cont.)	Industry	NSW Minerals Council	Regularly
	Traditional Owners	Aboriginal Heritage Working Group	Quarterly
	Regulators	Annual Review (formerly Annual Environmental management Review (AEMR) Report and Review Meeting	Annually
		MOP	Annually
		Incident Notifications	As required
Internal	Employees	Morning Meeting	Daily
		Environmental, Safety and Health (ESH) Meetings	Monthly
		ESH Policy Meeting	Monthly
		Shift Meetings	Shift change
		Project Meetings	As required
		Special Information Presentations	As required
		Personal Communication between Individuals	As required
		Quarterly Reviews	Quarterly
		Miner details staff magazine	Bi-annually
		Notice boards and Display Signs	As required
		Personal letters to Employees	As required
		Rio Tinto Portal Site and NPM Portal Page	Continual
		Email	As required

In addition to its established committees and the communication methods listed within **Table 4.1**, NPM has also hosted open days during 2008, 2010, and 2013 with over 2000 people attending each open day. Information on the Project was presented to the local community at the open day on 2 March 2013. Overall there was general support for the Project expressed during open day by community members.

Project specific community consultation included;

- ongoing consultations with PSC and FSC staff, councillors and community members since 2011;
- public meetings, attended by over 80 people, held in Parkes and Forbes during November 2011;
- an online and hard copy survey of NPM employees and contractors with 270 responses (refer to **Section 5.17.1**);
- interviews with key opinion leaders from the Parkes Champion Post, PSC Tourism Officer, and the Wagga Wagga Indigenous Coordination Centre;
- an online community wide survey with over 200 respondents during March and April 2012 (refer to **Section 5.17.1**); and

- additional Project specific discussions and the provision of opportunities for comment during 2013 with;
  - NPM Staff;
  - Contractors;
  - Near neighbours;
  - Lachlan Valley Water representative;
  - Ooma water users association representative; and
  - Other relevant stakeholder group representatives, including individuals with interest in regional water availability.

Perceived issues/impacts raised by the community during the consultation process, during the preparation of the EA, are summarised in **Table 4.2**. The key issues/impacts identified during consultation were related to economic support, employment, housing, community development and water being the most regularly reported points of interest. It is worth noting that since this consultation was undertaken the Project has been significantly revised, resulting in a significant reduction in potential impacts of the Project.

**Table 4.2 – Aggregate Themes from Consultation in Parkes**

Theme	Per cent Response (%)
Economic Support	15
Employment	14
Housing	12
Community Development	11
Water	10
Infrastructure	8
Skills Shortage	7
Traffic/Driver Fatigue	6
Medical facilities	5
Education	4
End of Mine/'The Future'	4
Environment	4
Communication	1

Perspectives in the community with relation to the Project and analysis of data gathered during the community consultation activities is provided within the SIA refer to **Section 5.17.1** and **Appendix 16**.

#### **4.2.2 Aboriginal Community Consultation**

Details of consultation undertaken for the Aboriginal Cultural Heritage Assessment are provided in **Appendix 12**. In summary, the consultation process was developed to be consistent with the DGR's, OEH's consultation policies and NPM's existing negotiated agreements with the local Aboriginal community.



In accordance with OEH consultation requirements, NPM issued letters to all relevant entities including:

- Peak Hill Local Aboriginal Land Council;
- Condobolin Local Aboriginal Land Council;
- Lachlan Catchment Management Authority;
- National Native Title Tribunal (Southeast and Central – Sydney Office);
- Native Title Services Corporation (NSW);
- Operations Office - OEH - Dubbo;
- PSC; and
- The Registrar - *Aboriginal Land Rights Act*.

In addition, NPM placed advertisements in a series of local papers in early December 2011, including:

- The Parkes Champion Post;
- The Forbes Advocate;
- The Daily Liberal; and
- The Cowra Guardian.

A series of Registered Aboriginal Parties (RAPs) were identified through this process. RAPs were invited to participate in the consultation process for the project. Details of the Project RAPs are specified in **Appendix 12**. NPM invited RAPs to assist in the design of the Cultural Heritage Assessment for the Project as well as to participate in the assessment of the cultural significance of any Aboriginal objects and/or places in the vicinity of the project.

A working group of the RAPs was convened by NPM on 2 March 2012. The objective of the working group was to inform the RAPs on what the project may involve and to develop a Terms of Reference (ToR) in consultation with RAPs for the conduct of the Initial Cultural Heritage Assessment (ICHA).

A draft of the ICHA was distributed amongst the RAPs during October 2012. A meeting was held with the RAPs soon after to discuss the report, which was subsequently amended to reflect the outcomes from the meeting. Amendments were also communicated to RAPs.

The Aboriginal Cultural Heritage Assessment (ACHA) was presented to the RAPs at a meeting on 29 May 2013 whereby the recommended impact mitigation measures were discussed and agreed. The ACHA was distributed to RAPs for formal comment period at this time, with no specific comments received from RAPs during the consultation period.

This process has occurred in accordance with OEH's consultation policies. In addition, further consultation has occurred through NPM's agreements with the local Aboriginal community. Meetings were held with the Wiradjuri Executive Committee established under the Relationship Agreement in December 2011 and February 2012 where the Project was explained and the proposed methodology and preliminary versions of the ToR were also discussed. Communication with the local Aboriginal community in this way is ongoing and the Cultural Heritage Assessment is currently with the RAPs for comment prior to the Project being placed on public exhibition.