

# Development Consent

## Section 89E of the *Environmental Planning & Assessment Act 1979*

As delegate of the Minister for Planning, the Planning Assessment Commission of NSW approves the development application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.

Member of the Commission	Member of the Commission	Member of the Commission
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Sydney	2016	
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### SCHEDULE 1

<b>Application Number:</b>	SSD-5850
<b>Applicant:</b>	Mt Owen Pty Limited
<b>Consent Authority:</b>	Minister for Planning
<b>Land:</b>	See Appendix 1
<b>Development:</b>	Mount Owen Continued Operations Project

Blue type represents September 2017 modification  
Purple type represents September 2019 modification



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## DEFINITIONS

Annual review	The review required by condition 5 of Schedule 5
Applicant	Mt Owen Pty Limited, or any person/s who rely on this consent to carry out development that is subject to this consent
Approved disturbance area	The areas delineated as “Approved Operational Area” and “Additional Disturbance Area” in Figure 2A of Appendix 2
ARI	Average Recurrence Interval
ARTC	Australian Rail Track Corporation Ltd
BCA	Building Code of Australia
BC Act	<i>Biodiversity Conservation Act 2016</i>
BCD	Biodiversity & Conservation Division within the Department
BCT	NSW Biodiversity Conservation Trust
Biodiversity Offset Strategies	Comprise: <ul style="list-style-type: none"> <li>the conservation and enhancement strategy described in the EIS, summarised in Table 9 and depicted conceptually in the figures in Appendix 5; and</li> <li>the Mod 2 Biodiversity Offset Strategy required under conditions 29A and 29B of Schedule 3</li> </ul>
Blast misfire	The failure of one or more holes in a blast pattern to initiate
CCC	Community Consultative Committee
Conditions of this consent	Conditions contained in Schedules 2 to 5 inclusive
Council	Singleton Shire Council
Date of commencement	The date notified to the Department by the Applicant under condition 9 of Schedule 2
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	NSW Department of Planning, Industry and Environment
Development	The development described in the documents listed in condition 2(a) of Schedule 2, as modified by the conditions of this consent
DPIE - Crown Lands	Crown Lands Group within the Department
DPIE - Water	Water Group within the Department
DSC	Dams Safety Committee
EA (Mod 1)	<i>Environmental Assessment titled Integra to Mount Owen Complex Water Pipeline Modification Environmental Assessment dated June 2017, including the Response to Submissions titled Integra to Mount Owen Complex Water Pipeline Modification EA Response to Submissions, dated 11 July 2017</i>
EEC	Endangered ecological community, as defined under the BC Act
EIS	Environmental Impact Statement titled <i>Mount Owen Continued Operations Project: Environmental Impact Statement</i> (10 volumes) dated January 2015, response to submissions titled <i>Mount Owen Continued Operations Project Response to Submissions: Report A</i> dated June 2015 (including Addendum dated October 2015) and <i>Report B</i> dated August 2015, <i>Response to Queries Raised by Agencies Following Response to Submissions</i> dated November 2015, the <i>Mount Owen Continued Operations Project Response to PAC Review Report</i> dated May 2016 and the <i>Mount Owen Continued Operations Project Clarification of Project and Assessment Findings Report</i> dated October 2016.
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPBC Act	<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>
EPL	Environment Protection Licence issued under the POEO Act
Evening	The period from 6pm to 10pm
FCNSW	<i>Forestry Corporation of NSW</i>
Feasible	Feasible relates to engineering considerations and what is practical to build or implement
GDE	Groundwater Dependent Ecosystem
GRAWTS	<i>Greater Ravensworth Area Water and Tailings Scheme, as described in SEE (Mod 2)</i>
Heritage Branch	Heritage Branch of the Department of Premier and Cabinet
Heritage item	An item as defined under the <i>Heritage Act 1977</i> and/or an Aboriginal Object or Aboriginal Place as defined under the <i>National Parks and Wildlife Act 1974</i>
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance
Land	As defined in the EP&A Act, except for where the term is used in the noise and air quality conditions in Schedules 3 and 4 of this consent where it is defined to mean the whole of a lot, or contiguous lots owned by the same



	landowner, in a current plan registered at the Land Titles Office at the date of this consent
Material harm	<p>Is harm to the environment that:</p> <ul style="list-style-type: none"> <li>involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or</li> <li>results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)</li> </ul> <p>This definition excludes "harm" that is authorised under either this consent or any other statutory approval'</p>
Mine water	Water that accumulates within, or drains from, active mining and infrastructure areas and any other areas where runoff may have come into contact with coal or carbonaceous material
Minimise	Reduce adverse impacts by implementing all reasonable and feasible mitigation measures
Mining operations	The carrying out of mining, including the extraction, processing, stockpiling and transportation of coal on the site and the associated removal, storage and/or emplacement of vegetation, topsoil, overburden, tailings and coarse reject material
Minister	NSW Minister for Planning and Public Spaces, or delegate
Minor	Not very large, important or serious
Mitigation	Activities associated with reducing the impacts of the development
Modification 2	The modification to the development as described in SEE (Mod 2)
Mod 2 disturbance area	The area delineated as "Additional Disturbance Area" in Figure 2A of Appendix 2
Mount Owen Complex	The combined operations of the Mount Owen, Ravensworth East and Glendell Mines
Mount Owen Rail Loop	The private rail line associated with the Mount Owen Mine
Negligible	Small and unimportant, such as to be not worth considering
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
NP&W Act	<i>National Parks and Wildlife Act 1974</i>
PA	Means a planning agreement within the meaning of the term in section 7.4 of the EP&A Act
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Privately-owned land	Land that is not owned by a public agency or a mining company (or its subsidiary)
Public infrastructure	Linear and related infrastructure that provides services to the general public, such as roads, railways, water supply, drainage, sewerage, gas supply, electricity, telephone, telecommunications, etc.
RAP	Registered Aboriginal party
Ravensworth Complex	The combined operations of the Ravensworth Open Cut and Ravensworth Underground Mines
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
Rehabilitation	The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting
Remediation	Activities associated with partially or fully repairing or rehabilitating the impacts of the development or controlling the environmental consequences of this impact
Residence	Existing dwellings or approved dwellings, as at the date of this consent
Resources Regulator	NSW Resources Regulator
RFS	Rural Fire Service
RMS	Roads and Maritime Services
ROM	Run-of-mine
SANSW	Subsidence Advisory NSW
Secretary	Planning Secretary under the EP&A Act, or nominee
SEE (Mod 2)	Statement of Environmental Effects titled <i>Mount Owen Continued Operations Project Modification 2 Statement of Environmental Effects</i> prepared by Umwelt (Australia) Pty Ltd dated July 2018, including the Response to Submissions dated December 2018 and additional information dated 5 April 2019 and 15 May 2019 and the figure titled <i>Mount Owen Continued Operations Modification 2 – Proposed Tree Screen</i> dated 28 August 2019
Site	The land defined in Appendix 1



VPA

Wollombi Brook VCA Artefact  
Storage Facility

Water pipeline infrastructure

Voluntary Planning Agreement

The Aboriginal artefact storage facility to be constructed at the Wollombi  
Brook Voluntary Conservation Area, as shown in Figure 2 of Appendix 10 of  
SSD 4960

The water pipeline from the Integra Underground Mine to the Mount Owen  
Complex shown in Figure 2A of Appendix 2



## SCHEDULE 2 ADMINISTRATIVE CONDITIONS

### OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. In addition to meeting the specific performance criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the development.

### TERMS OF CONSENT

2. The Applicant must carry out the development
  - (a) generally in accordance with the EIS, EA (Mod 1), SEE (Mod 2) and the Development Layout Plans; and
  - (b) in accordance with the conditions of this consent.

*Note: The Development Layout Plans for the development are shown in Appendix 2.*

3. Consistent with the requirements in this consent, the Secretary may make written directions to the Applicant in relation to:
  - (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Secretary; and
  - (b) the implementation of any actions or measures contained in any such document referred to in condition 3(a).
4. The conditions of this consent and directions of the Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document/s listed in condition 2(a). In the event of an inconsistency, ambiguity or conflict between any of the document/s listed in condition 2(a), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

### LIMITS ON CONSENT

#### Mining Operations

5. The Applicant may carry out mining operations within the approved disturbance area on the site until 31 December 2037.

*Notes:*

- Under this consent, the Applicant is required to decommission and rehabilitate the site and carry out other requirements in relation to mining operations. Consequently, this consent will continue to apply in all respects other than to permit the carrying out of mining operations until the rehabilitation of the site and other requirements have been carried out to the required standard.
- Mining operations and rehabilitation are also regulated under the Mining Act 1992.

#### Coal Extraction and Transportation

6. The Applicant must not extract more than 14 million tonnes of ROM coal from the site in any calendar year, comprising:
  - (a) up to 4 million tonnes of ROM coal from the Ravensworth East Mine; and
  - (b) up to 10 million tonnes of ROM coal from the Mount Owen Mine (North Pit).
7. The Applicant may process up to 17 million tonnes of ROM coal from the Mount Owen Complex at the Mount Owen coal handing and preparation plant in a calendar year.
8. The Applicant must:
  - (a) transport coal from the site by rail using the Mount Owen Rail Loop or by conveyor to the Bayswater and/or Liddell Power Stations; and
  - (b) not transport more than 2 Mtpa of ROM coal and/or crushed gravel by conveyor to the Liddell Coal Mine and/or Ravensworth Coal Terminal.

#### Identification of Mod 2 Disturbance Area

- 8A. Prior to commencing mining operations in the Mod 2 disturbance area, or other timeframe agreed by the Secretary, the Applicant must provide to the Department a survey plan (or spatial files in a format agreed by the Secretary) identifying the following:
  - (a) the "Additional Disturbance Area" as shown in Figure 2A of Appendix 2; and
  - (b) the "Proposed Modification Pit Boundary" as shown in Figure 1.3 of SEE (Mod 2).



## NOTIFICATION OF COMMENCEMENT

9. Prior to physically commencing development under this consent, the Applicant must notify the Department in writing of the date that it intends to commence development permitted under this consent.

## SURRENDER OF CONSENTS

10. Within 12 months of the date of commencement of development under this consent, or as otherwise agreed by the Secretary, the Applicant must surrender the existing development consents DA 14-1-2004 for the Mount Owen Mine and DA 52-03-99 for the Ravensworth East Mine, in accordance with Section 104A of the EP&A Act, and to the satisfaction of the Secretary.

Following the commencement of development under this consent, the conditions of this consent shall prevail to the extent of any inconsistency with the conditions of the development consents DA 14-1-2004 and DA 52-03-99, prior to the surrender of those consents.

Notes:

- *This consent will apply to all components of the existing operations at the Mount Owen Mine and Ravensworth East Mine, from the commencement of development under this consent.*
- *This requirement does not extend to the surrender of construction and occupation certificates for existing and proposed building works under Part 4A of the EP&A Act. Surrender of a consent should not be understood as implying that works legally constructed under a valid consent can no longer be legally maintained or used.*

## STRUCTURAL ADEQUACY

11. The Applicant must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA and [SANSW](#).

Notes:

- *Under Part 6 of the EP&A Act, the Applicant is required to obtain construction and occupation certificates (where applicable) for the proposed building works. Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.*
- *The development is located in the Patrick Plains Mine Subsidence District. Under section 21 of the Coal Mine Subsidence Compensation Act 2017, the Applicant is required to obtain the Chief Executive of SANSW's approval before carrying out certain development in a Mine Subsidence District.*

## DEMOLITION

12. The Applicant must ensure that all demolition work undertaken in relation to the development is carried out in accordance with AS 2601-2001: *The Demolition of Structures*, or its latest version.

## PROTECTION OF PUBLIC INFRASTRUCTURE

13. Unless the Applicant and the applicable authority agree otherwise, the Applicant must:
  - (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and
  - (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

*Note: This condition does not apply to any damage to public infrastructure subject to compensation payable under the [Coal Mine Subsidence Compensation Act 2017](#), or to damage to roads caused as a result of general road usage.*

## OPERATION OF PLANT AND EQUIPMENT

14. The Applicant must ensure that all plant and equipment used on site, or to monitor the performance of the development, is:
  - (a) maintained in a proper and efficient condition; and
  - (b) operated in a proper and efficient manner.

## PLANNING AGREEMENT

15. Within 6 months of the date of commencement of development under this consent, unless the Secretary agrees otherwise, the Applicant must enter into a VPA with Council in accordance with:
  - (a) Division 6 of Part 4 of the EP&A Act; and
  - (b) the terms of the Applicant's offer in [Table 1 of Appendix 8](#).
16. *Within 6 months of the determination of Modification 2, unless the Secretary agrees otherwise, the Applicant must enter into a PA with Council in accordance with:*
  - (a) Division 7.1 of Part 7 of the EP&A Act; and*
  - (b) the terms of the Applicant's offer in [Table 2 of Appendix 8](#).*



The VPA required under condition 15 above and the PA required under this condition may be consolidated into a single agreement.

## **EVIDENCE OF CONSULTATION**

17. Where conditions of this consent require consultation with an identified party, the Applicant must:
- (a) consult with the relevant party prior to submitting the subject document; and
  - (b) provide the Department with details of the consultation undertaken including:
    - the outcome of that consultation, matters resolved and unresolved; and
    - details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

## **STAGING, COMBINING AND UPDATING STRATEGIES, PLANS OR PROGRAMS**

18. With the approval of the Secretary, the Applicant may:
- (a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);
  - (b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined);
  - (c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development); and
  - (d) combine any strategy, plan or program required by this consent with any similar strategy, plan or program required by an adjoining mining consent or approval, in common ownership or management.

If the Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.

## **COMPLIANCE**

19. The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

## **APPLICABILITY OF GUIDELINES**

20. References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.
21. However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.

## **CROWN LAND**

22. The Applicant must consult with DPIE – Crown Lands prior to undertaking any development on Crown Land or Crown Roads.

### *Notes:*

- Under section 265 of the Mining Act 1992, the Applicant is required to enter into a compensation agreement with DPIE – Crown Lands prior to undertaking any mining operations or related activities on Crown land or Crown roads within a mining lease.
- Under section 141 of the Mining Act 1992, the Applicant is required to enter into an access arrangement with DPIE – Crown Lands prior to undertaking any prospecting operations on Crown land or Crown roads within an exploration licence.



## SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS

### ACQUISITION UPON REQUEST

1. Upon receiving a written request from the owner of any land listed in Table 1, the Applicant must acquire the land in accordance with the procedures in conditions 5 and 6 of Schedule 4.

*Table 1: Land subject to acquisition upon request*

<b>Acquisition Basis</b>	<b>Land <sup>a</sup></b>
Air Quality	105 <sup>b</sup> , 114, 115, 116 <sup>c</sup> , 133 <sup>c</sup> , 4, 112, 143 <sup>d</sup> , 150 <sup>d</sup> , 152 <sup>d</sup> , 154 <sup>d</sup> , 155 <sup>d</sup> , 156 <sup>d</sup> , Lot 4 DP 1166047 <sup>d</sup> , Lot 5 DP 1166047 <sup>d</sup> , Lot 175 DP 1002770 <sup>d</sup> and Lot 106 DP 855187 <sup>d</sup>
Noise	21, 22 <sup>e</sup> , 23

*a The location of the land referred to in Table 1 is shown on the figure in Appendix 3.*

*b The Applicant is only required to acquire property 105, if its acquisition is not reasonably achievable under the approval for the Rix's Creek North open cut mine.*

*c The Applicant is only required to acquire Lot 31 DP6842 and Lot 2 DP1175728 within property 133.*

*d The Applicant is only required to acquire the identified land if acquisition is not reasonably achievable under the development consents for the Ashton South East Open Cut Project (MP 08\_0182), the Glendell Open Cut Coal Mine (DA 80/952), Ravensworth Operations Project (MP 09\_0176), Rix's Creek South Continuation of Mining Project (SSD 6300) or the Rix's Creek North Open Cut Project (MP 08\_0102).*

*e The identified land has been acquired by the Applicant.*

### ADDITIONAL MITIGATION UPON REQUEST

2. Upon receiving a written request from the owner of any residence listed in Table 1 or Table 2, the Applicant must implement additional mitigation measures at the residence, in consultation with the landowner, in respect of the basis on which that residence is identified in Table 1 or Table 2.

These measures must be reasonable and feasible, and directed towards reducing the air quality and/or noise impacts of the development on the residence. In the case of air quality, mitigation may include measures such as air filters, a first flush drainage system and/or air conditioning. In the case of noise, mitigation may include measures such as double-glazing, insulation and/or air conditioning.

If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

*Table 2: Land subject to additional mitigation upon request*

<b>Mitigation Basis</b>	<b>Residence<sup>a</sup></b>
Noise	13, 19, 93

*a The location of the land referred to in Table 2 is shown on the figure in Appendix 3.*

### NOISE

#### Construction – Hebden Road and Rail Line Works

3. The Applicant must manage noise from construction activities associated with the Hebden Road upgrade works and additional rail line, in accordance with the noise management levels defined in Table 2 of the *Interim Construction Noise Guideline*.

The Applicant must also ensure that the combined operational and construction noise from the development does not exceed a level of 5 dB(A) above the daytime operational L<sub>Aeq(15min)</sub> noise criteria in Table 3 during Standard Construction Hours (7 am to 6 pm, Monday to Friday; and 8 am to 1 pm on Saturdays) and does not exceed the evening or night time operational L<sub>Aeq(15min)</sub> noise criteria in Table 3, except where an alternative temporary limit has been approved by the Secretary for specific works or where the Applicant has an agreement with the owner/s of the relevant residence/land to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.

4. In seeking an alternative temporary construction noise limit above the levels identified in condition 3, the Applicant must submit a Construction Noise Work Protocol to the Secretary for approval, prior to undertaking the nominated construction works. This protocol must:
  - (a) be prepared to the satisfaction of the Secretary;
  - (b) be prepared in consultation with the EPA and any landowners who may be affected by the proposed variation; and
  - (c) address the relevant requirements of the *Interim Construction Noise Guideline*.



The Applicant may only undertake construction activities that require a Construction Work Noise Protocol, in accordance with an approved Construction Noise Work Protocol as approved from time to time by the Secretary.

## Noise Criteria

5. The Applicant must ensure that the noise generated by the development (including rail movements along the Mount Owen Rail Loop, but excluding the construction works specified in condition 3), does not exceed the criteria in Table 3 at any residence on privately-owned land.

*Table 3: Noise criteria dB(A)*

<b>Residence<sup>a</sup></b>	<b>Day / Evening / Night <i>L<sub>Aeq</sub>(15min)</i></b>	<b>Night <i>L<sub>A1</sub>(1min)</i></b>
41, 48	36 / 35 / 35	45
91	37 / 37 / 36	45
14, 92	37 / 37 / 37	45
10, 11	37 / 37 / 37	46
13	38 / 38 / 38	45
12, 94, 95, 112	38 / 38 / 38	46
111	39 / 39 / 36	45
19	39 / 39 / 39	45
93	40 / 40 / 40	46
21, 23	41 / 41 / 41	45
122	42 / 42 / 42	50
All other residences Area 4 – South	37 / 37 / 36	46
All other residences Area 4 – North and all other residences Area 5	37 / 37 / 35	45
All other residences Area 6	40 / 40 / 40	50
All other residences Area 7	40 / 40 / 38	48
All other residences Area 8 – East	39 / 39 / 35	45
All other residences Area 8 – West	44 / 44 / 42	52
All other residences Area 9	48 / 48 / 43	53
Other privately-owned residences	35 / 35 / 35	45

<sup>a</sup> The location of the land referred to in Table 3 is shown on the figure in Appendix 3.

Noise generated by the development is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.

## Noise Operating Conditions

6. The Applicant must:
  - (a) implement all reasonable and feasible mitigation measures, to minimise the construction, operational, low frequency, road and on-site rail noise of the development, with a particular focus on managing noise impacts during adverse weather conditions;
  - (b) identify any mobile plant or equipment (other than light vehicles) that will operate in noise sensitive areas (i.e. areas with the potential to generate increased noise at privately-owned residences, such as areas near the boundary of the site or elevated land/overburden emplacements) and ensure that this mobile plant or equipment is fitted with reasonable and feasible noise attenuation within 12 months of commencing development under this consent;
  - (c) operate a comprehensive noise management system that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day to day planning of mining operations, and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this consent;
  - (d) minimise the noise impacts of the development during meteorological conditions when the noise limits in this consent do not apply (see Appendix 4);
  - (e) ensure that the Mount Owen Rail Loop is only accessed by locomotives that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL;
  - (f) use reasonable endeavours to ensure that rolling stock is selected to minimise noise;



- (g) use its best endeavours to co-ordinate noise management with nearby mines (ie. Glendell, Integra Underground and Rix's Creek North Mines) to reasonably and feasibly minimise cumulative noise impacts; and
- (h) engage a suitably qualified and experienced person<sup>a</sup> to carry out regular attended monitoring to determine whether the development is complying with the relevant conditions of this consent.

*a In this condition a 'suitably qualified and experienced person' means a member of the Australian Acoustical Society, the Association of Australian Acoustical Consultants, or an appropriately qualified person whose appointment has been endorsed by the EPA.*

## Noise Management Plan

7. The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with the EPA, and submitted to the Secretary for approval prior to the commencement of development under this consent, unless the Secretary agrees otherwise;
  - describe the measures that would be implemented to ensure compliance with the noise criteria and operating conditions in this consent;
  - describe the noise management system in detail; and
  - include a monitoring program that:
    - evaluates and reports on:
      - the effectiveness of the noise management system;
      - compliance with the noise criteria in this consent; and
      - compliance with the noise operating conditions;
    - includes a program to validate the real-time noise monitoring results with the attended monitoring results over time (so the real-time noise monitoring program can be used as a better indicator of compliance with the noise criteria in this consent and a trigger for further attended monitoring);
    - includes a protocol for distinguishing noise emissions of the development from any neighbouring developments; and
    - includes a protocol for identifying a noise-related exceedance, incident or non-compliance and for notifying the Department and relevant stakeholders of these events.

The Applicant must implement the Noise Management Plan as approved by the Secretary.

## BLASTING

### Blasting Criteria

8. The Applicant must ensure that blasting on site does not cause exceedances of the criteria in Table 4.

Table 4: Blasting criteria

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Residence on privately-owned land <sup>a</sup>	120	10	0%
	115	5	5% of the total number of blasts over a calendar year
<b>Historic buildings and structures</b>			
St Clements Church	120	5	0%
	115	2	5% of the total number of blasts over a calendar year
Ravensworth Homestead	126	5	0%
Chain of Ponds Inn	133	10	0%
Kangory (Dulwich) Homestead	126	5	0%
Former Hebden Public School	-	16	0%
John Winter Memorial	-	250	0%
<b>Infrastructure</b>			
Electricity transmission lines <sup>b</sup>	-	50	0%



Prescribed dams <sup>c</sup>	-	50	0%
Main Northern Rail Line <sup>b</sup>	-	25	0%
Public roads <sup>b</sup>	-	100	0%
Integra Underground Mine's surface facilities <sup>d</sup>	-	25 or 100 <sup>e</sup>	0%
Integra Underground Mine's underground workings <sup>d</sup>	-	10 or 250 <sup>f</sup>	0%
All other public infrastructure <sup>b</sup>	-	50	0%

*a Unless otherwise agreed with the relevant owner/s of the residence, and the Applicant has advised the Department in writing of the terms of this agreement.*

*b Unless otherwise agreed with the relevant infrastructure provider or owner, and the Applicant has advised the Department in writing of the terms of this agreement.*

*c Unless otherwise agreed to by the Dam Safety Committee, and the Applicant has advised the Department in writing of the terms of this agreement.*

*d Unless otherwise agreed to by the relevant infrastructure owner and the Secretary (in writing).*

*e 25 mm/s for occupied non-sensitive sites (e.g. factories or commercial premises) or 100 mm/s for unoccupied structures of reinforced concrete or steel construction.*

*f 10 mm/s safety and personnel withdrawal limit for occupied underground workings and 250 mm/s structural limit for unoccupied workings.*

### Blasting Hours

9. The Applicant must only carry out blasting on site between 9 am and 5 pm (Monday to Saturday inclusive), with the exception of an allowable maximum of 12 blasts in a calendar year which may be undertaken between 7 am and 9 am (Monday to Saturday inclusive). No blasting is allowed on Sundays, public holidays or any other time without the agreement of the Secretary.

### Blasting Frequency

10. The Applicant may carry out a maximum of:
  - (a) 2 blasts a day at the Ravensworth East Mine;
  - (b) 2 blasts a day at the Mount Owen Mine;
  - (c) 5 blasts a week at the Ravensworth East Mine, averaged over a calendar year; and
  - (d) 8 blasts a week at the Mount Owen Mine, averaged over a calendar year.

This condition does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, or to blast misfires or blasts required to ensure the safety of the mine, its workers or the general public.

#### Notes:

- For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.
- For the avoidance of doubt, should an additional blast be required after a blast misfire, this additional blast and the blast misfire are counted as a single blast, for the purpose of calculating the maximum number of daily and weekly blasts under this condition.

### Property Inspections

11. If the Applicant receives a written request from the owner of any privately-owned land within 3 kilometres of any approved open cut mining pit on site for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection updated, then within 2 months of receiving this request the Applicant must:
  - (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:
    - establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and
    - identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and/or structures; and
  - (b) give the landowner a copy of the new or updated property inspection report.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.

### Property Investigations

12. If the owner of any privately-owned land within 3 kilometres of any approved open cut mining pit on site claims that buildings and/or structures on his/her land have been damaged as a result of blasting on the site, then within 2 months of receiving this claim the Applicant must:



- (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and
- (b) give the landowner a copy of the property investigation report.

If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant must repair the damage to the satisfaction of the Secretary.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.

### **Blast Operating Conditions**

13. The Applicant must:
- (a) implement all reasonable and feasible measures to:
    - protect the safety of people and livestock from blasting impacts in the areas surrounding blasting operations;
    - protect public or private infrastructure/property in the surrounding area from damage from blasting operations;
    - **minimise blasting impacts on the Main Creek alluvial aquifer;**
    - minimise the dust and fume emissions of any blasting;
  - (b) ensure that blasting on the site does not damage heritage items, and develop specific measures to protect the Ravensworth Homestead, Chain of Ponds Inn, Kangory (Dulwich) Homestead, Former Hebden Public School and John Winter Memorial from any blasting damage associated with the development;
  - (c) minimise the frequency and duration of any road closures, and use all reasonable efforts to avoid road closures for blasting during peak traffic periods;
  - (d) operate a suitable system to enable members of the public to get up-to-date information on the proposed blasting schedule on site and associated road closures, **including, on request, notification via SMS message of the blasting schedule and associated public road closures for that day and any variations to that schedule and closures;**
  - (e) use all reasonable endeavours to co-ordinate the timing of blasting at the site with any nearby mines (including the Glendell and Rix's Creek North Mines) to minimise cumulative blasting impacts; and
  - (f) carry out regular monitoring to determine whether the development is complying with the relevant conditions of this consent.

*Note:*

- *For the location of the heritage items referred to in paragraph (b) above, refer to Appendix 6*

14. The Applicant must not undertake blasting on site within 500 metres of any public road or any land outside the site not owned by the Applicant, unless the Applicant has:
- (a) a written agreement with the relevant infrastructure owner or landowner to allow blasting to be carried out closer to the infrastructure or land, and the Applicant has advised the Department in writing of the terms of this agreement; or
  - (b) demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without compromising the safety of people or livestock or damaging the infrastructure and/or other buildings and structures, and the Secretary has approved an updated Blast Management Plan that includes specific mitigation measures to be implemented while blasting is being carried out within 500 metres of the infrastructure or land.

### **Blast Management Plan**

15. The Applicant must prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the EPA, and submitted to the Secretary for approval prior to the commencement of development under this consent, unless the Secretary agrees otherwise;
  - (b) describe the measures that will be implemented to ensure compliance with the blast criteria and operating conditions of this consent;
  - (c) include a road closure management plan for blasting within 500 metres of a public road, that has been prepared in consultation with applicable roads authorities and includes provisions for:
    - **notifying relevant roads authorities of any planned public road closures;**
    - minimising the duration of closures, both on a per event basis and weekly basis;
    - avoiding peak traffic periods as far as practicable; and
    - coordinating with neighbouring mines to minimise the cumulative effect of road closures;
  - (d) propose and justify any agreed alternative ground vibration limits for public infrastructure in the vicinity of the site (if relevant);
  - (e) include an agreed strategy for the management of potential blast interactions within 500 metres of any approved and/or developed underground workings for the Integra Underground Mine, and includes details of:



- systems for the prior and timely notification of scheduled blasting and subsidence activities;
  - personnel evacuation and safety protocols for specific blast events; and
  - procedures and protocols for managing the interaction of the two mines; and
- (f) include a monitoring program for evaluating and reporting on compliance with the blasting criteria and operating conditions of this consent.

The Applicant must implement the Blast Management Plan as approved by the Secretary.

## AIR QUALITY

### Air Quality Criteria

16. The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria listed in Tables 5, 6 and 7 at any residence on privately-owned land, except for the residences shown in Table 1 as being eligible for acquisition on request on the basis of air quality impacts.

*Table 5: Long term impact assessment criteria for particulate matter*

<b>Pollutant</b>	<b>Averaging Period</b>	<b><sup>d</sup>Criterion</b>
Total suspended particulate (TSP) matter	Annual	<sup>a</sup> 90 µg/m <sup>3</sup>
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	<sup>a</sup> 25 µg/m <sup>3</sup>
Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	Annual	<sup>a</sup> 8 µg/m <sup>3</sup>

*Table 6: Short term impact assessment criterion for particulate matter*

<b>Pollutant</b>	<b>Averaging Period</b>	<b><sup>d</sup>Criterion</b>
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	<sup>b</sup> 50 µg/m <sup>3</sup>
Particulate matter < 2.5 µm (PM <sub>2.5</sub> )	24 hour	<sup>b</sup> 25 µg/m <sup>3</sup>

*Table 7: Long term impact assessment criteria for deposited dust*

<b>Pollutant</b>	<b>Averaging period</b>	<b>Maximum increase in deposited dust level</b>	<b>Maximum total deposited dust level</b>
<sup>c</sup> Deposited dust	Annual	<sup>b</sup> 2 g/m <sup>2</sup> /month	<sup>a</sup> 4 g/m <sup>2</sup> /month

Tables 5-7:

<sup>a</sup> Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).

<sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own).

<sup>c</sup> Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.

<sup>d</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed to by the Secretary.

For the purposes of this condition, 'reasonable and feasible avoidance and mitigation measures' includes, but is not limited to, the requirements in conditions 18 and 19 to develop and implement a real time air quality management system that ensures effective operational response to the risk of exceedance of the criteria.

### Mine-owned Land

17. The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria listed in Tables 5, 6 and 7 at any occupied residence on mine-owned land (including land owned by another mining company) unless:
- the tenant and landowner (if the residence is owned by another mining company) have been notified of any health risks associated with such exceedances in accordance with the notification requirements under Schedule 4 of this consent;
  - the tenant of any land owned by the Applicant can terminate their tenancy agreement without penalty at any time, subject to giving reasonable notice;
  - air quality monitoring is regularly undertaken to inform the tenant or landowner (if the residence is owned by another mining company) of the likely particulate emissions at the residence; and



- (d) data from this monitoring is presented to the tenant and landowner in an appropriate format for a medical practitioner to assist the tenant and landowner in making informed decisions on the health risks associated with occupying the property.

### Air Quality Operating Conditions

18. The Applicant must:
- (a) implement all reasonable and feasible measures to minimise the odour, fume, spontaneous combustion and dust (including PM<sub>10</sub> and PM<sub>2.5</sub>) emissions of the development, including through the proactive and reactive management for all emission sources (crustal and combustion);
  - (b) minimise visible air pollution generated by the development;
  - (c) minimise to the greatest extent practicable, the extent of potential dust generating surfaces exposed on the site at any given point in time;
  - (c1) take all reasonable steps to improve energy efficiency and reduce greenhouse gas emissions from the development;
  - (d) operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting and real-time air quality monitoring data to guide the day to day planning of mining operations and the implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this consent;
  - (e) install and operate a weather station with a 10 m high tower, located approximately between or at either dust monitoring stations SX9 and SX10, for use in managing potential air quality impacts to receivers situated to the south-east of the development;
  - (f) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note d above under Tables 5-7);
  - (g) co-ordinate air quality management on site with the air quality management at nearby mines (ie. Glendell and Rix's Creek North mines) to minimise cumulative air quality impacts; and
  - (h) carry out regular monitoring to determine whether the development is complying with the relevant conditions of this consent, and report on this in the annual review referred to in condition 5 of Schedule 5.

### Air Quality and Greenhouse Gas Management Plan

19. The Applicant must prepare an Air Quality and Greenhouse Gas Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the EPA, and submitted to the Secretary for approval prior to the commencement of development under this consent, unless the Secretary agrees otherwise;
  - (b) describe the method for the selection of a suitable site and installation timeframe for the weather station to be located approximately between, or at either dust monitoring stations SX9 and SX10;
  - (c) describe the measures that would be implemented to ensure compliance with the relevant air quality criteria and operating conditions of this consent;
  - (d) describe the air quality management system in detail;
  - (e) include an initial baseline estimate of the emissions of PM<sub>2.5</sub> from all diesel engines used for the development; and
  - (f) include an air quality monitoring program that:
    - adequately supports the air quality management system;
    - evaluates and reports on the:
      - the effectiveness of the air quality management system;
      - compliance with the air quality criteria;
      - compliance with the air quality operating conditions; and
    - defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents.

The Applicant must implement the Air Quality and Greenhouse Gas Management Plan as approved by the Secretary.

### METEOROLOGICAL MONITORING

20. Prior to the commencement of development, the Applicant must ensure that there is a meteorological station in the vicinity of the site that:
- (a) complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline; and
  - (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the *NSW Industrial Noise Policy*, unless a suitable alternative (such as wind stability classes) is approved by the Secretary following consultation with the EPA.



## WATER

### Water Supply

21. The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of operations on site to match its available water supply.

*Notes:*

- Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain all necessary water licences for the development *prior to water take occurring*.
- The Applicant should consult with *DPiE Water* regarding the licensing requirements for the final landform and any associated impacts on the Bowmans Creek and Glennies Creek catchments.

### Compensatory Water Supply

22. The Applicant must provide a compensatory water supply to any landowner of privately-owned land whose rightful water supply is adversely and directly impacted (other than a negligible impact) as a result of the development, in consultation with *DPiE Water*, and to the satisfaction of the Secretary.

The compensatory water supply measures must provide an alternative long term supply of water that is equivalent, in quality and volume, to the loss attributable to the development. Equivalent water supply should be provided (at least on an interim basis) as soon as practicable after the loss is identified, unless otherwise agreed with the landowner.

If the Applicant and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

If the Applicant is unable to provide an alternative long term supply of water, then the Applicant must provide compensation to the satisfaction of the Secretary.

*Note: The Water Management Plan (see condition 26) is required to include trigger levels for investigating potentially adverse impacts on water supplies.*

### Water Pollution

23. Unless an EPL or the EPA authorises otherwise, the Applicant must comply with Section 120 of the POEO Act.

*Notes:*

- *The Applicant is required to obtain any necessary approvals or licences under the EP&A Act, POEO Act and/or Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002 prior to discharging water or tailings off-site via the GRAWTS.*
- *The Applicant is required to comply with the relevant provisions of the POEO Act in relation to any unauthorised discharges.*

### Creek Diversions

24. The Applicant must construct, maintain and rehabilitate any approved creek diversions associated with the development, including the diversions of Bettys Creek around the Eastern Rail Pit and into Main Creek, to the satisfaction of the Secretary.

### Water Management Performance Measures

25. The Applicant must comply with the performance measures in Table 8.

*Table 8: Water management performance measures*

<b>Feature</b>	<b>Performance Measure</b>
Water management – General	<ul style="list-style-type: none"><li>• Minimise the use of clean water on site</li><li>• Minimise the need for make-up water from external supplies (other than the <i>GRAWTS</i>)</li></ul>



<b>Feature</b>	<b>Performance Measure</b>
Main, Glennies and Bowmans Creek alluvial aquifers	<ul style="list-style-type: none"> <li>Negligible environmental consequences to the alluvial aquifer as a result of the development, including: <ul style="list-style-type: none"> <li>negligible change in groundwater levels;</li> <li>negligible change in groundwater quality; and</li> <li>negligible impact to other groundwater users, beyond those predicted in the documents listed in condition 2(a) of Schedule 2.</li> </ul> </li> </ul>
Construction and operation of infrastructure	<ul style="list-style-type: none"> <li>Design, install and maintain erosion and sediment controls generally in accordance with the series <i>Managing Urban Stormwater: Soils and Construction</i> including <i>Volume 1, Volume 2A – Installation of Services, Volume 2C – Unsealed Roads, Volume 2D – Main Road Construction and Volume 2E Mines and Quarries</i></li> <li>Design, install and maintain any infrastructure within 40 metres of watercourses generally in accordance with the <i>Guidelines for Controlled Activities on Waterfront Land (2007)</i>, or its latest version</li> <li>Design, install and maintain any creek crossings generally in accordance with the <i>Policy and Guidelines for Fish Friendly Waterway Crossings</i> (NSW Fisheries, 2003) and <i>Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings</i> (NSW Fisheries 2003), or their latest versions</li> </ul>
Clean water diversion & storage infrastructure	<ul style="list-style-type: none"> <li>Design, install and maintain the clean water system to convey the 100 year 24 hour ARI event</li> <li>Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on site</li> </ul>
Sediment dams	<ul style="list-style-type: none"> <li>Design, install and maintain the dams generally in accordance with the series <i>Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries</i></li> </ul>
Mine water storages	<ul style="list-style-type: none"> <li>Design, install and maintain mine water storage infrastructure to ensure no discharge of mine water to the off-site environment</li> <li>On-site storages (including mine infrastructure dams, groundwater storage and treatment dams) are suitably designed, installed and maintained (including to minimise permeability)</li> <li>Ensure adequate freeboards within all pit voids at all times to minimise the risk of discharge to surface waters</li> </ul>
Tailings storages	<ul style="list-style-type: none"> <li>Design and maintain tailings storage areas to encapsulate and prevent the movement of tailings seepage/leachate offsite</li> </ul>
Overburden emplacements	<ul style="list-style-type: none"> <li>Design, install and maintain emplacements to encapsulate and prevent migration of tailings, acid forming and potentially acid forming materials, and saline and sodic material</li> <li>Design, install and maintain out-of-pit emplacements to prevent and/or manage long term saline seepage</li> </ul>
Chemical and hydrocarbon storage	<ul style="list-style-type: none"> <li>Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standards</li> </ul>
Creek realignment and restoration works	<ul style="list-style-type: none"> <li>Diverted creek lines are hydraulically and geomorphologically stable</li> <li>Incorporate erosion control measures based on vegetation and engineering revetments</li> <li>Incorporate persistent/permanent pools for aquatic habitat</li> <li>Revegetate with suitable native species</li> </ul>
Aquatic and riparian ecosystems	<ul style="list-style-type: none"> <li>Develop site-specific in-stream water quality objectives in accordance with ANZECC 2000 and <i>Using the ANZECC Guidelines and Water Quality Objectives in NSW procedures (2006)</i>, or its latest version</li> </ul>

### Water Management Plan

26. The Applicant must prepare a Water Management Plan for the development. This plan must:
- be prepared in consultation with [DPIE Water](#) and EPA, and submitted to the Secretary for approval prior to the commencement of development under this consent, unless the Secretary agrees otherwise;
  - include detailed performance criteria and describe measures to ensure that the Applicant complies with the water management performance measures (see Table 8);
  - in addition to the standard requirements for management plans (see condition 3 of Schedule 5), this plan must include a:
    - Water Balance that:
      - includes details of:
        - sources and security of water supply, including contingency planning for future reporting periods;
        - water use and management on site;



- any off-site water transfers; and
  - reporting procedures, including the preparation of a site water balance for each calendar year; and
- describes the measures that would be implemented to minimise clean water use by the development;
- (ii) Salt Balance that:
  - includes details of:
    - sources of saline material on the site;
    - saline material and saline water management on site; and
    - reporting procedures, including the preparation of a salt balance for each calendar year;
- (iii) Erosion and Sediment Control Plan, that:
  - is consistent with the requirements of *Managing Urban Stormwater: Soils and Construction - Volume 1 and Volume 2* *E Mines and Quarries*, or its latest version;
  - identifies activities that could cause soil erosion, generate sediment or affect flooding;
  - describes measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, and manage flood risk;
  - describes the location, function, and capacity of erosion and sediment control structures and flood management structures; and
  - describes what measures would be implemented to maintain the structures over time;
- (iv) Surface Water Management Plan, that includes:
  - relevant baseline data on channel stability, water flows and water quality in the sections and parts of creeks, rivers and waterbodies that are likely to experience a greater than negligible impact as a result of the development;
  - a detailed description of the water management system on site;
  - a description of measures used to manage, monitor and report on the transfer of water **and/or tailings** under the **GRAWTS**;
  - an appropriately detailed description of the flood warning signage to be installed along Hebden Road;
  - appropriately detailed plans, design objectives and performance criteria for:
    - the Hebden Road realignment and upgrade works (including the construction of a new bridge over Bowmans creek);
    - construction of an additional rail line and rail bridge crossing over Bettys Creek;
    - any approved creek diversions associated with the development;
    - any restoration works to be undertaken on creeks impacted by the development;
    - sediment and mine water dams;
    - **the small height flood levee and proposed modifications to Dams 5 and 6 described in SEE (Mod 2)**;
    - emplacement of tailings, acid forming and potentially acid forming materials, and saline and sodic materials;
    - re-establishment of free draining second and third order creeks, and their associated catchments, in the final post-mining landform; and
    - any final voids for the development (see the Rehabilitation Objectives in Table 10);
  - surface water performance criteria, including trigger levels for investigating any potentially adverse impacts, for the following:
    - the water management system, including mine water storages and sediment dams;
    - surface water user supplies;
    - downstream surface water quality;
    - downstream flooding impacts; and
    - stream and riparian vegetation health;
  - a program to monitor and report on:
    - the effectiveness of the water management system;
    - impacts on downstream water users (that are not negligible);
    - surface water flows and quality, as well as stream and riparian vegetation health in the watercourses that are likely to experience a greater than negligible impact as a result of the development;
    - **acid forming and potential acid forming materials, incorporating the recommendations in Appendix 11 of SEE (Mod 2); and**
    - downstream flooding impacts; and
  - a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the development;
- (v) Groundwater Management Plan, that includes:



- relevant baseline data on groundwater levels, yield and quality in the region and privately-owned groundwater bores that are likely to experience a greater than negligible impact as a result of the development;
  - a detailed description of the groundwater management system on site;
  - appropriately detailed plans, design objectives and performance criteria, for:
    - emplacement of tailings, acid forming and potentially acid forming materials, and saline and sodic materials;
    - any final voids for the development (see the Rehabilitation Objectives in Table 10);
  - groundwater performance criteria, including trigger levels for investigating any potentially adverse groundwater impacts, for the following:
    - Main Creek, Glennies Creek, Bettys Creek, York Creek, Swamp Creek and Bowmans Creek alluvial aquifers and the Permian hard rock aquifer;
    - groundwater user bores;
    - groundwater inflows to the mining operations;
    - seepage/leachate from water storages, emplacements, backfilled voids and final voids; and
    - groundwater dependent ecosystems;
  - a program to monitor and report on:
    - groundwater inflows to the mining pits;
    - seepage/leachate from water storages, emplacements, backfilled voids and final voids;
    - background changes in groundwater yield/quality against mine-induced changes;
    - impacts of the development on:
      - regional and local (including alluvial) aquifers;
      - groundwater supply of potentially affected landowners; and
      - groundwater dependent ecosystems and riparian vegetation;
  - a **Trigger Action Response Plan** to respond to any exceedances of the groundwater performance criteria, and mitigate any adverse groundwater impacts of the development (including a protocol to install a low permeability barrier in the event that the Main Creek alluvial aquifer is intercepted or a significant decline in alluvial water levels is detected which may be attributable to mining operations); and
  - consideration of the cumulative groundwater interactions of the development and other nearby mines, including the Glendell Mine and Integra Underground Mine;
- (vi) a program to periodically validate the water balance, salt balance, surface water take and groundwater model for the development, and compare monitoring results with modelled predictions, unless otherwise agreed by the Secretary;
- (vii) a protocol to report on the measures, monitoring results and performance criteria identified above, in the annual review referred to in condition 5 of Schedule 5; and
- (viii) a protocol that has been prepared, using all reasonable endeavours, in consultation with the owners of any nearby mines (including the Glendell, Liddell, Ravensworth Operations, Integra Underground and Rix's Creek North Mines) to:
- minimise cumulative water quantity and quality impacts;
  - review opportunities for water sharing between the mines;
  - co-ordinate water quality monitoring programs where practicable; and
  - undertake joint investigations/studies in relation to complaints/exceedances of trigger levels where cumulative impacts are considered likely.

The Applicant must implement the Water Management Plan as approved by the Secretary.

## BIODIVERSITY

### Biodiversity Offset Strategy

27. The Applicant must implement the Biodiversity Offset Strategy described in the [EIS](#), summarised in Table 9 and shown conceptually in Appendix 5 [and](#) 7.

Table 9: Summary of the Biodiversity Offset Strategy

Area	Offset Name <sup>a</sup>	Size hectares (ha)
On-site Offsets	Northwest Offset	71.4
	Northeast Offset	83.6
	Southeast Offset	58.3
	TSR Offset	25.1
	Forest East Offset	110.9



	Southeast Corridor Offset	74.1
	Southern Remnant Offset	4.0
	Cross Creek Offset	367.0
	Stringybark Creek Habitat Corridor Offset	97.5
	Rehabilitation Woodland	518.0
Off-site Offsets	Esparanga Offset	303.0
	Mitchell Hills Offset	143.7
<b>Total Area</b>		<b>1856.6</b>

<sup>a</sup> To identify the areas referred to in Table 9, see the applicable figures in Appendices 5 and 7.

27A. The Applicant must rehabilitate the Rehabilitation Woodland offset area required in Table 9 above to a level that meets the EEC listing criteria for the Central Hunter Ironbark – Spotted Gum – Grey Box Forest EEC.

### Threatened Species

28. The Applicant must ensure that the Biodiversity Offset Strategy summarised in Table 9 and the Rehabilitation Strategy for the development focus on the regeneration, enhancement and/or re-establishment of:
- significant and/or threatened flora communities, including:
    - Central Hunter Grey Box — Ironbark Woodland EEC; and
    - Central Hunter Ironbark — Spotted Gum — Grey Box Forest EEC; and
  - habitat and/or foraging resources for other significant and/or threatened flora and fauna species, including:
    - Spotted-tailed Quoll;
    - Squirrel Glider;
    - Koala;
    - Swift Parrot;
    - Regent Honeyeater;
    - Green and Golden Bell Frog;
    - Brush-tailed Phascogale;
    - Eastern Bent-wing Bat;
    - East-coast Freetail Bat;
    - Southern Myotis;
    - Speckled Warbler;
    - Little Lorikeet;
    - Grey-crowned Babbler;
    - Diamond Firetail; and
    - Masked Owl.

### Long Term Security of Offsets

29. The Applicant must make suitable arrangements for the long term protection of the areas identified in Table 9, to the satisfaction of the Secretary. These arrangements must be implemented by:
- the end of June 2018, unless the Secretary agrees otherwise, for all on-site and off-site offsets excluding the Rehabilitation Woodland offset area; and
  - within 12 months of the finalisation of the location of the Rehabilitated Woodland (see Table 9) under condition 31(c) below, unless the Secretary agrees otherwise.

*Note: This condition can be satisfied for any area identified in Table 9 that is already subject to long term protection mechanisms under previous development consents for the Mount Owen or Ravensworth East mines, if the Secretary agrees that the existing mechanism/s provide sufficient protection to address the requirements of this condition.*

### Mod 2 Biodiversity Offset Strategy

- 29A. Within 12 months of commencing mining operations in the Mod 2 disturbance area, unless otherwise agreed by the Secretary, the Applicant must provide a Mod 2 Biodiversity Offset Strategy for approval by the Secretary. This strategy must:
- recalculate, if necessary, in accordance with the BC Act, the number of credits required under condition 29B of Schedule 3;



- (b) describe how the biodiversity credits in Table 9A (or as recalculated) will be identified, secured and retired; and
- (c) be prepared in accordance with the *NSW Biodiversity Offset Policy for Major Projects* and to the satisfaction of BCD.

The Applicant must implement the Mod 2 Biodiversity Offset Strategy as approved by the Secretary.

- 29B. Within 24 months of commencing mining operations in the Mod 2 disturbance area, unless otherwise agreed by the Secretary, the Applicant must retire the biodiversity credits specified in Table 9A below (or the equivalent number of credits calculated in accordance with the BC Act) as set out in the Mod 2 Biodiversity Offset Strategy.

*Table 9A: Biodiversity credit requirements*

<b>Credit Type</b>	<b>Credits Required</b>
<b>Ecosystem Credits</b>	
HU815 – Spotted Gum – Narrow-leaved Ironbark – Red Ironbark Shrub – Grass Open Forest Slopes of the Central and Lower Hunter	984
HU906 – Bull Oak Grassy Woodland of the Central Hunter Valley	66
HU945 – Swamp Oak – Weeping Grass Grassy Riparian Forest of the Hunter Valley	12
<b>Species Credits</b>	
Brush-tailed Phascogale	177

*Note: The credits in Table 9A were calculated in accordance with Framework for Biodiversity Assessment of the NSW Biodiversity Offset Policy for Major Projects (OEH, 2014) and may need to be converted to reasonably equivalent 'biodiversity credits', within the meaning of the BC Act, to facilitate retirement.*

The retirement of the biodiversity credits specified in Table 9A must be carried out in accordance with the Biodiversity Offsets Scheme of the BC Act, to the satisfaction of the BCT.

### Compensatory Planting

30. The Applicant must plant and maintain, until established, 10 River Oak trees for every established River Oak tree removed during construction of the Greater Ravensworth tailings management infrastructure.

*Notes:*

- An established River Oak tree is considered to be two metres or greater in height.
- The Greater Ravensworth tailings management infrastructure is shown in Appendix 2.

### Water Pipeline Infrastructure

- 30A. The Applicant must implement the mitigation and management measures specified in EA (Mod 1) during construction of the water pipeline infrastructure, including avoiding disturbance of stags, hollow bearing trees and the Bettys Creek Habitat Management Area.

### Biodiversity Management Plan

31. The Applicant must prepare a Biodiversity Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with BCD, and submitted to the Secretary for approval prior to the commencement of development under this consent, unless the Secretary agrees otherwise;
  - (b) describe the short, medium, and long term measures that would be undertaken to:
    - manage the remnant vegetation and fauna habitat on the site and in the offset areas (see Table 9);
    - implement the Biodiversity Offset Strategies
    - minimise the impacts of the development on threatened species, in particular those listed in condition 28 above, and where appropriate, enhance available habitat for and support the recovery of these species on the site; and
    - integrate the implementation of the Biodiversity Offset Strategies to the greatest extent practicable with the rehabilitation of the Mount Owen Complex and any conservation activities being undertaken in the Ravensworth State Forest and New Forest Area;
  - (c) include detailed performance and completion criteria for evaluating the performance of the Biodiversity Offset Strategies and include triggers for remedial action, where these performance or completion criteria are not met;



- (d) include a final location for the Rehabilitated Woodland offset area (see Table 9) within 5 years (or such other period as agreed by the Secretary) of the commencement of development under this consent;
- (e) include a detailed description of the measures that would be implemented to:
  - enhance the quality of existing vegetation, vegetation connectivity and fauna habitat on the site, within the East-West Corridor Management Area (see Figure 7B in Appendix 7) and in the biodiversity offset areas, including through the assisted regeneration and/or targeted revegetation of appropriate canopy, sub-canopy, understorey and ground strata;
  - introduce naturally scarce fauna habitat features such as den structures, nest boxes and salvaged tree hollows, where appropriate and with a particular focus on the regenerated and rehabilitated woodland areas, and use all reasonable and feasible efforts to promote the use of these introduced habitat features by threatened fauna species;
  - maximise the salvage of resources within the approved disturbance area - including tree hollows, vegetative and soil resources – for beneficial reuse in the enhancement of the rehabilitation woodland areas and, where practicable, the biodiversity offset areas;
  - manage any potential conflicts between regeneration and restoration works in the biodiversity offset areas and the East-West Corridor Management Area, and any Aboriginal heritage values (both cultural and archaeological) in these areas;
  - manage the collection and propagation of seed;
  - protect vegetation and fauna habitat outside the approved disturbance area on-site;
  - minimise the impacts on fauna on site, including undertaking pre-clearance surveys;
  - provide for the salvage, transplanting and/or propagation of any threatened flora (including, but not limited to, threatened orchid species) found during pre-clearance surveys, in accordance with the *Guidelines for the Translocation of Threatened Plants in Australia* (Vallee *et al.*, 2004);
  - avoid and mitigate the spread of noxious weeds;
  - control weeds and feral pests, including but not limited to goats, rabbits, red fox, cats and pigs, with consideration of actions identified in relevant threat abatement plans;
  - control erosion on the site and in the biodiversity offset areas;
  - manage any grazing and agriculture on the site or in the biodiversity offset areas;
  - control access to the site and the biodiversity offset areas;
  - manage bushfire hazards on the site and in the biodiversity offset areas; and
  - rehabilitate any sections or parts of creeks and drainage lines that are impacted by the development (both inside and outside the approved disturbance area);
- (e1) include a detailed description of the measures and procedures to be implemented to:
  - minimise, to the greatest extent practicable, the disturbance of threatened species and EECs, and rehabilitate any areas of disturbed land associated with the construction of the water pipeline infrastructure; and
  - satisfy the requirements of conditions 30 and 30A of Schedule 3;
- (f) include details of the proactive measures and completion criteria proposed to manage the impacts of the development on habitat connectivity, with particular reference to the resilience, width and function of woodland corridors and specific measures to prioritise supplementary planting activities in the Southeastern Corridor Offset during Year 1 of the development;
- (g) include a strategy for the regeneration of woodland areas within the offset areas (see Table 9), including details of:
  - the level of direct management required to achieve the target woodland community at each offset area;
  - periodic targets for the regeneration of woodland communities;
  - trigger levels where additional management activities (such as weed management and direct seeding or planting of underrepresented species) would be required; and
  - any specific controls or management activities required to ensure this regeneration is trending towards the target communities.
- (h) include a seasonally-based program to monitor and report on the effectiveness of the above measures (including the use of anthropogenic habitat features by native and threatened fauna), the progress against the detailed performance and completion criteria, and any progressive improvements that could be implemented to improve biodiversity outcomes;
- (i) include measures to report on the results of the monitoring activities required under paragraph (h) above, to facilitate shared learnings and research into the application of regeneration and rehabilitation techniques and methods for EECs and native vegetation in the Hunter Valley;
- (j) monitor and report on the impacts of the development on groundwater dependent ecosystems and riparian vegetation (having regard to the requirements of the Groundwater Management Plan and focusing on areas that are likely to experience a greater than negligible impact as a result of the development), and identify trigger levels for the remediation of any material impacts to these ecosystems;
- (k) report on the effectiveness of the above measures against the periodic performance and completion criteria, as part of the annual review referred to in condition 5 of Schedule 5;
- (l) identify the potential risks to the successful implementation of the [Biodiversity Offset Strategies](#), and include a description of the contingency measures that would be implemented to mitigate against these risks, including provisions for alternative direct and/or supplementary offset



- measures where regeneration of EECs and/or the propagation/translocation of threatened flora do not meet the performance and completion criteria; and
- (m) include details of who would be responsible for monitoring, reviewing, and implementing the plan.

The Applicant must implement the Biodiversity Management Plan as approved by the Secretary.

### Conservation Bond

32. Within 6 months of the approval of the Biodiversity Management Plan, unless otherwise agreed by the Secretary, the Applicant must lodge a Conservation Bond with the Department to ensure that the Biodiversity Offset Strategy summarised in Table 9 is implemented in accordance with the performance and completion criteria in the Biodiversity Management Plan. The sum of the bond must be determined by:
- (a) calculating the full cost of implementing the Biodiversity Offset Strategy (other than land acquisition costs); and
  - (b) employing a suitably qualified, independent and experienced person to verify the calculated costs, to the satisfaction of the Secretary.

The calculation of the Conservation Bond must be submitted to the Department for approval at least 1 month prior to the lodgment of the bond.

The Conservation Bond must be reviewed and if required, an updated bond must be lodged with the Department within 3 months following:

- (a) an update or revision to the Biodiversity Management Plan;
- (b) the completion of an Independent Environmental Audit in which recommendations relating to the implementation of the Biodiversity Offset Strategy have been made; or
- (c) in response to a request by the Secretary.

If the Biodiversity Offset Strategy is completed generally in accordance with the completion criteria in the Biodiversity Management Plan to the satisfaction of the Secretary, the Secretary will release the bond.

If the Biodiversity Offset Strategy is not completed generally in accordance with the completion criteria in the Biodiversity Management Plan, the Secretary will call in all, or part of, the conservation bond, and arrange for the completion of the relevant works.

#### Notes:

- *Alternative funding arrangements for long term management of the Biodiversity Offset Strategy, such as provision of capital and management funding as agreed by BCD as part of a Biobanking Agreement or transfer to conservation reserve estate, can be used to reduce the liability of the conservation bond. The sum of the bond may be reviewed in conjunction with any revision to the Biodiversity Offset Strategy.*
- *The sum of the Conservation Bond required under this condition excludes the costs associated with the establishment of the Rehabilitated Woodland area, to the extent that these costs are covered by a separate rehabilitation security required under the mining lease.*

## HERITAGE

### Protection of Aboriginal Heritage Items

33. Unless otherwise authorised under the NP&W Act, the Applicant must ensure that the development does not cause any direct or indirect impact on identified Aboriginal heritage items located outside the approved disturbance area of the development.

### Aboriginal Heritage Management Plan

34. The Applicant must prepare an Aboriginal Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;
  - (b) be prepared in consultation with BCD, RAPs and relevant landowners, and submitted to the Secretary for approval prior to the commencement of development under this consent, unless the Secretary agrees otherwise; and
  - (c) include the following for the management of Aboriginal heritage:
    - an Aboriginal cultural heritage education program, to be developed in consultation with relevant RAPs, and used for the induction of all personnel and contractors involved in construction or surface disturbance activities approved under this consent;
    - details regarding the establishment and role of the Aboriginal Cultural Heritage Working Group in monitoring and managing cultural heritage;
    - details regarding the management of the Yorks Creek Voluntary Conservation Area and Aboriginal heritage sites within the Mount Owen Complex that would not be disturbed by the development;
    - a program and description of the measures/procedures that would be implemented for:



- protecting, monitoring and/or managing (including any proposed archaeological investigations and/or salvage measures) Aboriginal cultural heritage on site **including specific measures to protect AHIMS Site #37-3-0687 (unless separate approval is obtained for its salvage)**;
- managing any new Aboriginal objects or skeletal remains discovered during the development;
- maintaining and managing reasonable access for relevant Aboriginal stakeholders to heritage items on site and within offset areas; and
- ongoing consultation and involvement of relevant Aboriginal stakeholders (including RAPs) in the conservation and/or management of Aboriginal cultural heritage on the site; and
- a strategy for the storage of heritage items salvaged on site, both during the development and in the long term, **including:**
  - **an interim strategy for the storage of heritage items pending the completion of the Wollombi Brook VCA Artefact Storage Facility; and**
  - **a procedure to consult with the Mount Owen Complex Aboriginal Cultural Heritage Working Group in the development of the Plan of Management for the Wollombi Brook VCA Artefact Storage Facility.**

The Applicant must implement the Aboriginal Heritage Management Plan as approved by the Secretary.

### **Historic Heritage Management Plan**

35. The Applicant must prepare a Historic Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the Heritage Branch, Council, local historical organisations and relevant landowners, and submitted to the Secretary for approval prior to the commencement of development under this consent, unless the Secretary agrees otherwise; and
  - (b) include the following for the management of historic heritage:
    - plans/strategies to monitor, mitigate and manage the effects of blasting on historic heritage items, particularly those identified in condition 13(b), and including details of baseline (ie pre-blasting) and ongoing risk-based dilapidation surveys (subject to landowner access arrangements);
    - ensure any workers on site receive suitable heritage inductions prior to carrying out any activities which may cause impacts to historic heritage, and that suitable records are kept of these inductions;
    - a program and description of the measures/procedures that would be implemented for:
      - undertaking surface surveys and archaeological investigations (where subsurface disturbance is proposed) of any items of heritage significance (including the former Ravensworth Public School and Ravensworth village) that would be directly impacted by the Hebden Road construction works;
      - protecting heritage items located outside the disturbance area from the impacts of the development;
      - managing any new historic heritage items discovered during the development; and
      - additional archaeological excavation and/or recording of any significant heritage items requiring demolition.

The Applicant must implement the Historic Heritage Management Plan as approved by the Secretary.

*Note: Historic heritage items are shown in Appendix 6.*

## **TRANSPORT**

### **Monitoring of Coal Transport**

36. The Applicant must:
- (a) keep accurate records of the:
    - amount of coal transported from the site (on a monthly basis);
    - date and time of each train movement generated by the development; and
  - (b) make these records available on its website at the end of each calendar year.

### **Hebden Road**

37. The Applicant must carry out the Hebden Road upgrade works described in the documents listed in condition 2(a) of Schedule 2 (**including all road furniture, safety signage and markings required to meet relevant road standards**), in consultation with the RMS and to the satisfaction of Council. These construction works are to be commenced within 12 months of the commencement of mining operations within the disturbance areas shown in Figure 2A of Appendix 2, or as otherwise agreed by the Secretary.

*Note:*



- If there is a dispute between the relevant parties about the implementation of this condition, then any party may refer the matter to the Secretary for resolution.

## Mount Owen Rail Loop

38. The Applicant must construct the additional rail line and its connection with the Mount Owen Rail Loop and Main Northern Rail Line (including any rail furniture and safety signage required to meet relevant connection or safety standards), in consultation with and to the satisfaction of the ARTC.

Note:

- If there is a dispute between the parties about the implementation of this condition, then any party may refer the matter to the Secretary for resolution.

## VISUAL

### Visual Operating Conditions

39. The Applicant must:
- implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development;
  - ensure no fixed outdoor lights shine directly above the horizontal or above the building line or any illuminated structure;
  - ensure no in-pit mobile lighting rigs shine directly above the pit wall and other mobile lighting rigs do not shine directly above the horizontal (except where required for emergency safety purposes);
  - ensure that all external lighting associated with the development complies with relevant Australian Standards including *Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting*, or its latest version; and
  - undertake reasonable and feasible measures to shield views of mining operations and associated equipment from users of public roads and privately-owned residences.
- 39A. By 31 December 2020, unless otherwise agreed by the Secretary, the Applicant must plant the vegetated screen described in SEE (Mod 2), adjacent to Falbrook Road.

The Applicant must establish and maintain the vegetated screen to the satisfaction of the Secretary.

## BUSHFIRE MANAGEMENT

40. The Applicant must:
- ensure that the development is suitably equipped to respond to any fires on site; and
  - assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site.

## WASTE

41. The Applicant must:
- implement all reasonable and feasible measures to minimise the waste (including coal rejects and tailings) generated by the development;
  - ensure that the waste generated by the development is appropriately stored, handled and disposed of;
  - manage on-site sewage treatment and disposal in accordance with the requirements of Council; and
  - monitor and report on the effectiveness of the waste minimisation and management measures in the annual review referred to in condition 5 of Schedule 5.

## REHABILITATION

### Rehabilitation Objectives

42. The Applicant must rehabilitate the site to the satisfaction of Resources Regulator. This rehabilitation must be generally consistent with the proposed rehabilitation activities described in the documents listed in condition 2(a) of Schedule 2 (and shown conceptually in the Rehabilitation Plans in Appendix 7), and comply with the objectives in Table 10.

Table 10: Rehabilitation Objectives

Feature	Objective
Mine site (as a whole)	<ul style="list-style-type: none"> <li>• Safe, stable and non-polluting</li> <li>• Final landforms (including final voids) designed to incorporate micro-relief and integrate with surrounding natural landforms</li> <li>• Constructed landforms maximise surface water drainage to the natural environment (excluding final void catchments)</li> </ul>



<i>Feature</i>	<i>Objective</i>
	<ul style="list-style-type: none"> <li>Minimise long term groundwater seepage zones</li> <li>Minimise visual impact of final landforms as far as is reasonable and feasible</li> <li>Final landforms designed in consideration of water licensing requirements, as calculated through consultation with <a href="#">DPIE Water</a></li> </ul>
Final voids	<ul style="list-style-type: none"> <li>Designed as long-term groundwater sinks to prevent the release of saline water into the surrounding environment, unless further mine planning and final landform design processes identify a more suitable outcome for the final voids (see condition 43 of Schedule 3)</li> <li>Designed as to ensure sufficient freeboard at all times to minimise the risk of discharge to surface waters</li> <li>Minimise to the greatest extent practicable: <ul style="list-style-type: none"> <li>highwall slopes (excluding slopes below the post-mining standing water level);</li> <li>the size and depth of final voids;</li> <li>the drainage catchment of final voids;</li> <li>any high wall instability risk; and</li> <li>the risk of flood interaction for all flood events up to and including the Probable Maximum Flood</li> </ul> </li> <li>Vegetate upper benches with a mixture of native species of varied heights</li> </ul>
Rehabilitation areas and other vegetated land	<ul style="list-style-type: none"> <li>Restore at least 2037 ha of self-sustaining native woodland ecosystems characteristic of vegetation communities found in the local area, as shown conceptually in Figure 7A in Appendix 7</li> <li>Establish areas of self-sustaining: <ul style="list-style-type: none"> <li>riparian habitat, within any diverted and/or re-established creek lines and retained water features;</li> <li>potential habitat for threatened flora and fauna species; and</li> <li>wildlife corridors, as far as is reasonable and feasible, and as shown conceptually in Figure 7B in Appendix 7</li> </ul> </li> </ul>
Agricultural land	<ul style="list-style-type: none"> <li>Rehabilitate grassland areas identified in Appendix 7 as being potential grazing areas to support sustainable grazing activities</li> </ul>
Creek restoration works	<ul style="list-style-type: none"> <li>Engineered to be hydraulically and geomorphologically stable</li> <li>Incorporate erosion control measures based on vegetation and engineering revetments</li> <li>Incorporate structures for aquatic habitat</li> <li>Revegetate with suitable native species</li> </ul>
Surface infrastructure	<ul style="list-style-type: none"> <li>To be decommissioned and removed, unless <a href="#">Resources Regulator</a> agrees otherwise</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>Water retained on the site is fit for the intended post-mining land use/s</li> <li>Water discharged from the site is suitable for receiving waters and is capable of supporting existing aquatic ecology and riparian vegetation</li> </ul>
Community	<ul style="list-style-type: none"> <li>Ensure public safety</li> <li>Minimise adverse socio-economic effects associated with mine closure</li> </ul>

Note:

- The long term conservation of the Rehabilitation Woodland offset area identified in Table 9 will be satisfied in accordance with condition 29. The conservation values of the remaining native woodland restored under this condition will be established in accordance with the Rehabilitation Strategy required under condition 43, and managed and enhanced, in accordance with the Rehabilitation Management Plan required under condition 45.

42A. The rehabilitation objectives in Table 10 apply to the entire site, including all landforms constructed under either this consent or previous development consents. However, they do not require any additional earthmoving works to be undertaken for landforms that have been approved and constructed under previous consents.

### Rehabilitation Strategy

43. The Applicant must prepare a Rehabilitation Strategy for the Mount Owen Complex to the satisfaction of the Secretary. This strategy must:
- be prepared in consultation with [Resources Regulator](#) and Council, and be submitted to the Secretary for approval prior to the commencement of development under this consent, unless the Secretary agrees otherwise;



- (b) build upon the Rehabilitation Objectives in Table 10 and the Rehabilitation Plans shown in Appendix 7, including identification of opportunities for increasing the areas of woodland and habitat connectivity within the rehabilitated landscape;
- (c) include details of the canopy, sub-canopy, understorey and ground strata species to be established in the rehabilitation areas, with a particular focus on ensuring the achievement of an appropriate level of diversity and mix of functional groups within each target community;
- (d) identify opportunities for the incorporation of preferred feed trees, foraging resources and habitat for threatened fauna species identified in condition 28;
- (e) align with strategic rehabilitation and mine closure objectives and address the principles of the *Strategic Framework for Mine Closure* (ANZMEC and MCA, 2000);
- (f) identify and describe all rehabilitation domains, and define completion criteria for each;
- (g) include indicative mine plans and scheduling for life-of-mine rehabilitation showing each domain;
- (h) describe how rehabilitation will be integrated with the mine planning process, including a plan to address premature or temporary mine closure;
- (i) investigate opportunities to refine and improve the final landform and final void outcomes over time;
- (j) include a risks and opportunities assessment and risk register; and
- (k) include a stakeholder engagement plan to guide rehabilitation and mine closure planning processes and outcomes.

The Applicant must implement the Rehabilitation Strategy as approved by the Secretary.

### Progressive Rehabilitation

44. The Applicant must rehabilitate the site progressively as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation cannot be permanently rehabilitated.

*Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the development.*

### Rehabilitation Management Plan

45. The Applicant must prepare a Rehabilitation Management Plan for the Mount Owen Complex to the satisfaction of **Resources Regulator**. This plan must:
- (a) be prepared in consultation with the Department, **DPIE Water, BCD, DRG, DSC**, Council and the CCC, and submitted to **Resources Regulator** for approval prior to the commencement of mining operations under this consent, unless the Secretary agrees otherwise;
  - (b) be prepared in accordance with any relevant **Resources Regulator** guideline;
  - (c) describe how the rehabilitation of the site would achieve the objectives identified in Table 10, the outcomes described in the Rehabilitation Strategy in condition 45 and be integrated with the Biodiversity Offset Strategy described in condition 27;
  - (d) include a detailed Tailings Management Plan for the development;
  - (e) include a detailed soil and growing medium balance for the development;
  - (f) include a detailed plan for the reinstatement and review of the proposed:
    - agricultural land capability of grassland areas in the final landform, including a protocol for periodic trials to demonstrate that the land capability is being achieved; and
    - rehabilitated woodland areas and fauna habitat, including a protocol for periodic trials to demonstrate that the target vegetation community is being achieved;
  - (g) include detailed performance and completion criteria for **each rehabilitation domain, and triggers for remedial actions**;
  - (g1) **include detailed mine plans and scheduling for progressive rehabilitation to be initiated, undertaken and/or completed over the next three years, or other suitable time period as agreed with the Resources Regulator**;
  - (h) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including mine closure, final landform (including final voids), final land uses and water management in the final landform;
  - (i) include procedures for the use of interim stabilisation and temporary vegetation strategies, where reasonable and feasible to minimise the area exposed for dust generation;
  - (j) identify how rehabilitation activities will implement the findings of any previous Mount Owen Research programs, research commitments identified in the EIS and the Hunter Ironbark Research Program being undertaken at the Ravensworth Complex;
  - (k) include a program to monitor, independently audit and report on the effectiveness of the measures in paragraph (h) above, and progress against the detailed performance and completion criteria in paragraph (g) above (at a minimum these reporting requirements must be included as part of the annual review referred to in condition 5 of Schedule 5); and
  - (l) build on and integrate with the other management plans required under this consent.



The Applicant must implement the Rehabilitation Management Plan as approved to the satisfaction of Resources Regulator.

#### Mine Closure Plan

46. By 31 December 2032, the Applicant must prepare a Mine Closure Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the Resources Regulator, BCD, Council and FCNSW;
  - (b) include a final land use strategy which investigates potential post-mining beneficial land uses for the site (including the final voids), that:
    - reflect local strategic planning instruments;
    - contribute to a sustainable future for the local community;
    - utilise existing mining infrastructure, where practicable; and
    - do not compromise ecological rehabilitation requirements;
  - (c) investigate ways to minimise adverse socio-economic effects associated with mine closure, including reduction in local employment levels;
  - (d) describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the development and describe how the performance of these measures would be monitored over time; and
  - (e) discuss the results of community consultation regarding potential post-mining land uses.

The Applicant must implement the Mine Closure Plan as approved by the Secretary.

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## SCHEDULE 4 ADDITIONAL PROCEDURES

### NOTIFICATION OF LANDOWNERS/TENANTS

1. Within 2 months of the commencement of development under this consent, the Applicant must:
  - (a) notify in writing the owner of:
    - the land listed in Table 1 of Schedule 3 that they have the right to require the Applicant to acquire their land at any stage during the development;
    - the residences listed in Tables 1 and 2 of Schedule 3 that they are entitled to ask the Applicant to install additional noise mitigation measures at the residence; and
    - any privately-owned land within 3 kilometres of the approved open cut mining pit/s that they are entitled to ask the Applicant for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated;
  - (b) notify the tenants of any mine-owned land of their rights under this consent; and
  - (c) send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the documents listed in condition 2(a) of Schedule 2 identify that dust emissions generated by the development are likely to be greater than the relevant air quality criteria in Schedule 3 at any time during the life of the development.

Within 2 months of any modification to the conditions of this consent that leads to new land being added to Tables 1 or 2 of Schedule 3, the Applicant must notify affected land owners in accordance with the requirements of paragraph (a).

2. Prior to entering into any tenancy agreement for any land owned by the Applicant that is predicted to experience exceedances of the recommended dust and/or noise criteria, the Applicant must:
  - (a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and
  - (b) advise the prospective tenants of the rights they would have under this consent, to the satisfaction of the Secretary.
3. As soon as practicable after obtaining monitoring results showing:
  - (a) an exceedance of any relevant criteria in Schedule 3, the Applicant must notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the development is again complying with the relevant criteria; and
  - (b) an exceedance of the relevant air quality criteria in Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land).

### INDEPENDENT REVIEW

4. If an owner of privately-owned land considers the development to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land.

If the Secretary is not satisfied that an independent review is warranted, the Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.

If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Applicant must:

- (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to:
  - consult with the landowner to determine his/her concerns;
  - conduct monitoring to determine whether the development is complying with the relevant impact assessment criteria in Schedule 3; and
  - if the development is not complying with these criteria then:
    - determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine regarding the impact on the land;
    - identify the measures that could be implemented to ensure compliance with the relevant criteria; and
- (b) give the Secretary and landowner a copy of the independent review.

### LAND ACQUISITION

5. Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant must make a binding written offer to the landowner based on:



- (a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the development, having regard to the:
  - existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and
  - presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the additional noise and/or air quality mitigation measures in condition 2 of Schedule 3;
- (b) the reasonable costs associated with:
  - relocating within the Singleton, Cessnock or Muswellbrook local government area, or to any other local government area determined by the Secretary; and
  - obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and
- (c) reasonable compensation for any disturbance caused by the land acquisition process.

If, within two months of the binding written offer being made, the Applicant and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.

Upon receiving such a request, the Secretary will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:

- consider submissions from both parties;
- determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above;
- prepare a detailed report setting out the reasons for any determination; and
- provide a copy of the report to both parties.

Within 14 days of receiving the independent valuer's report, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.

However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions.

Within 14 days of this determination, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination.

If the landowner refuses to accept the Applicant's binding written offer under this condition within 6 months of the offer being made, then the Applicant's obligations to acquire the land shall cease, unless the Secretary determines otherwise.

6. The Applicant must pay all reasonable costs associated with the land acquisition process described in condition 5 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.
-



## **SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING**

### **ENVIRONMENTAL MANAGEMENT**

#### **Adaptive Management**

1. The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.

Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:

- (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
- (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and
- (c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.

#### **Environmental Management Strategy**

2. **The** Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:
  - (a) be submitted to the Secretary for approval prior to the commencement of development under this consent, unless the Secretary agrees otherwise;
  - (b) provide the strategic framework for the environmental management of the development;
  - (c) identify the statutory approvals that apply to the development;
  - (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;
  - (e) describe the procedures that would be implemented to:
    - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
    - receive, handle, respond to, and record complaints;
    - resolve any disputes that may arise during the course of the development;
    - respond to any non-compliance;
    - respond to emergencies; and
  - (f) include:
    - copies of any strategies, plans and programs approved under the conditions of this consent; and
    - a clear plan depicting all the monitoring required to be carried out under the conditions of this consent.

The Applicant must implement the approved Environmental Management Strategy as approved from time to time by the Secretary.

#### **Management Plan Requirements**

3. The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:
  - (a) detailed baseline data;
  - (b) a description of:
    - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
    - any relevant limits or performance measures/criteria;
    - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;
  - (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
  - (d) a program to monitor and report on the:
    - impacts and environmental performance of the development;
    - effectiveness of any management measures (see c above);
  - (e) a contingency plan to manage any unpredicted impacts and their consequences;
  - (f) a program to investigate and implement ways to improve the environmental performance of the development over time;
  - (g) a protocol for managing and reporting any:
    - incidents;
    - complaints;
    - non-compliances with statutory requirements; and



- exceedances of the impact assessment criteria and/or performance criteria; and
- (h) a protocol for periodic review of the plan.

*Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.*

### Relationships between Management Plans and Annual Review

4. With the agreement of the Secretary, the Applicant may combine any strategy, plan, program or Annual review required by this consent with any similar strategy, plan, program or Annual Review required for the Glendell Mine, Integra Underground Mine or any other adjoining operation in common ownership or management.

### Annual Review

5. By the end of March each year, or as otherwise agreed with the Secretary, the Applicant must submit a report to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must:
  - (a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;
  - (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the:
    - relevant statutory requirements, limits or performance measures/criteria;
    - monitoring results of previous years; and
    - relevant predictions in the documents listed in condition 2(a) of Schedule 2;
  - (c) identify any non-compliance or incident over the past year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;
  - (d) identify any trends in the monitoring data over the life of the development;
  - (e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
  - (f) describe what measures will be implemented over the next year to improve the environmental performance of the development.

### Revision of Strategies, Plans and Programs

6. Within 3 months of:
  - (a) the submission of an annual review under condition 5 above;
  - (b) the submission of an incident report under condition 9 below;
  - (c) the submission of an audit under condition 11 below; or
  - (d) any modification to the conditions of this consent (unless the conditions require otherwise);
 the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.

If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Secretary. Where revisions are required, the revised document must be submitted to the Secretary for approval within six weeks of the review.

*Note:*

- This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.

7. The Applicant must continue to apply existing management strategies, plans or programs approved prior to the approval of Modification 2, until the approval of a similar plan, strategy or program following the approval of Modification 2.

### Community Consultative Committee

8. The Applicant must operate a Community Consultative Committee (CCC) for the Mount Owen Complex to the satisfaction of the Secretary. This CCC must be operated in general accordance with the [Department's Community Consultative Committee Guidelines State Significant Projects \(January 2019\)](#), or its latest version.

*Notes:*

- The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.
- In accordance with the guideline, the Committee should be comprised of an independent chair and appropriate representation from the Applicant, Council, recognised environmental groups and the local community.
- The Department will accept continued representation by community members of a CCC that is in effect as at the date of this consent for any of the mines in the Complex. The Department will also accept the combination of the Mount Owen Complex CCC with the Integra Underground CCC.



## REPORTING AND AUDITING

### Incident Notification

9. The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au) and identify the development (including the development application number and name) and set out the location and nature of the incident.

### Non-Compliance Notification

- 9A. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to [compliance@planning.nsw.gov.au](mailto:compliance@planning.nsw.gov.au) and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

*Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.*

### Regular Reporting

10. The Applicant must provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent, and to the satisfaction of the Secretary.

### Independent Environment Audit

11. Within one year of the date of commencement of development under this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
  - (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
  - (b) include consultation with the relevant agencies and the CCC;
  - (c) assess the environmental performance of the development and assess whether it is complying with the requirements in this consent and any relevant EPL or Mining Lease or necessary water licences (including any assessment, plan or program required under these approvals);
  - (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals (including whether the development has met or is trended towards the progressive performance and completion criteria detailed in these strategies, plans or programs);
  - (e) recommend appropriate measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under these approvals; and
  - (f) be conducted and reported to the satisfaction of the Secretary

*Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.*

12. Within 12 weeks of commissioning of this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary and any other NSW Government agency that request it, together with its response to any recommendations contained in the audit report and a timetable for the implementation of these recommendations, as required. The Applicant must implement the audit report recommendations, to the satisfaction of the Secretary.

- 12A. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit.

*Note: For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.*

- 12B. Noise, blast and/or air quality monitoring under this consent may be undertaken at suitable representative monitoring locations instead of at privately-owned residences or other locations listed in Schedule 3, providing that these representative monitoring locations are set out in the respective management plan/s.

## ACCESS TO INFORMATION

13. From the commencement of development under this consent, the Applicant must:
  - (a) make copies of the following publicly available on its website:
    - the documents listed in condition 2(a) of Schedule 2;



- current statutory approvals for the development;
  - approved strategies, plans or programs required under the conditions of this consent;
  - a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications of any conditions of this consent, or any approved plans or programs;
  - a complaints register, which is to be updated monthly;
  - minutes of CCC meetings;
  - the annual reviews of the development (for the last five years);
  - any independent environmental audit of the development, and the Applicant's response to the recommendations in any audit; and
  - any other matter required by the Secretary; and
- (b) keep this information up to date,  
to the satisfaction of the Secretary.
-



**APPENDIX 1  
SCHEDULE OF LAND**

<b>Lot</b>	<b>DP</b>	<b>Owner</b>
1	1072124	Mine Owned Glencore
1	135026	Mine Owned Glencore
1	137381	Mine Owned Glencore
1	137382	Mine Owned Glencore
1	151176	Mine Owned Glencore
1	159786	Mine Owned Glencore
1	380676	Mine Owned Glencore
1	48490	Government Authority
1	745486	Mine Owned Glencore
1	793886	Government Authority
1	804150	Mine Owned Glencore
1	823167	Mine Owned Glencore
1	865784	Mine Owned Glencore
1	925901	Mine Owned Glencore
1	940619	Mine Owned Glencore
1	1180252	Mine Owned Glencore
1	1211135	Mine Owned Glencore
1	1206886	Mine Owned Glencore
1	1237446	Crown Road
2	1072124	Mine Owned Glencore
2	233019	Australian Rail Track Corporation
2	38725	Mine Owned Glencore
2	549723	Mine Owned Glencore
2	6842	Mine Owned Glencore
2	730978	Mine Owned Glencore
2	804150	Mine Owned Glencore
2	823167	Mine Owned Glencore
2	859544	Mine Owned Glencore
2	865784	Mine Owned Glencore
2	1180252	Mine Owned Glencore
2	1206886	Mine Owned Glencore
3	38725	Mine Owned Glencore
3	195598	Mine Owned Glencore
3	662944	Mine Owned Glencore
3	1072124	Mine Owned Glencore
3	823167	Mine Owned Glencore
3	859544	Mine Owned Glencore
3	1206886	Mine Owned Glencore
3	1180252	Mine Owned Glencore
4	1072124	Mine Owned Glencore
4	255403	Mine Owned Glencore
4	38725	Mine Owned Glencore
4	823167	Mine Owned Glencore
4	859544	Mine Owned Glencore
4	1180252	Mine Owned Glencore
5	1077004	Mine Owned Glencore
5	38725	Mine Owned Glencore
5	823167	Mine Owned Glencore



5	859544	Mine Owned Glencore
6	1077004	Mine Owned Glencore
6	255403	Mine Owned Glencore
6	38725	Mine Owned Glencore
6	859544	Mine Owned Glencore
7	38725	Mine Owned Glencore
7	859544	Mine Owned Glencore
8	6830	Mine Owned Glencore
8	38725	Mine Owned Glencore
8	859544	Mine Owned Glencore
8	1077004	Government Authority
9	6842	Mine Owned Glencore
9	38725	Mine Owned Glencore
10	38725	Mine Owned Glencore
11	6830	Mine Owned Glencore
11	6842	Mine Owned Glencore
11	38725	Mine Owned Glencore
11	825904	Mine Owned Glencore
11	873459	Mine Owned Glencore
12	38725	Mine Owned Glencore
12	825904	Mine Owned Glencore
12	873459	State Forest
12	1017435	Mine Owned Glencore
13	38725	Mine Owned Glencore
13	665120	Mine Owned Glencore
13	825904	Mine Owned Glencore
14	38725	Mine Owned Glencore
14	825904	Mine Owned Glencore
15	38725	Mine Owned Glencore
15	873459	Mine Owned Glencore
16	38725	Mine Owned Glencore
17	6830	Mine Owned Glencore
19	38725	Mine Owned Glencore
20	38725	Mine Owned Glencore
21	6830	Mine Owned Glencore
21	38725	Mine Owned Glencore
21	841165	Mine Owned Glencore
22	841165	Mine Owned Glencore
23	6842	Mine Owned Glencore
23	841165	Mine Owned Glencore
24	6830	Mine Owned Glencore
24	841165	Mine Owned Glencore
25	6830	Mine Owned Glencore
25	841160	Mine Owned Glencore
26	6830	Mine Owned Glencore
26	841160	AusGrid
27	6830	Mine Owned Glencore
30	752462	Mine Owned Glencore
32	535087	Mine Owned Glencore
32	545601	Mine Owned Glencore
37	752462	Mine Owned Glencore



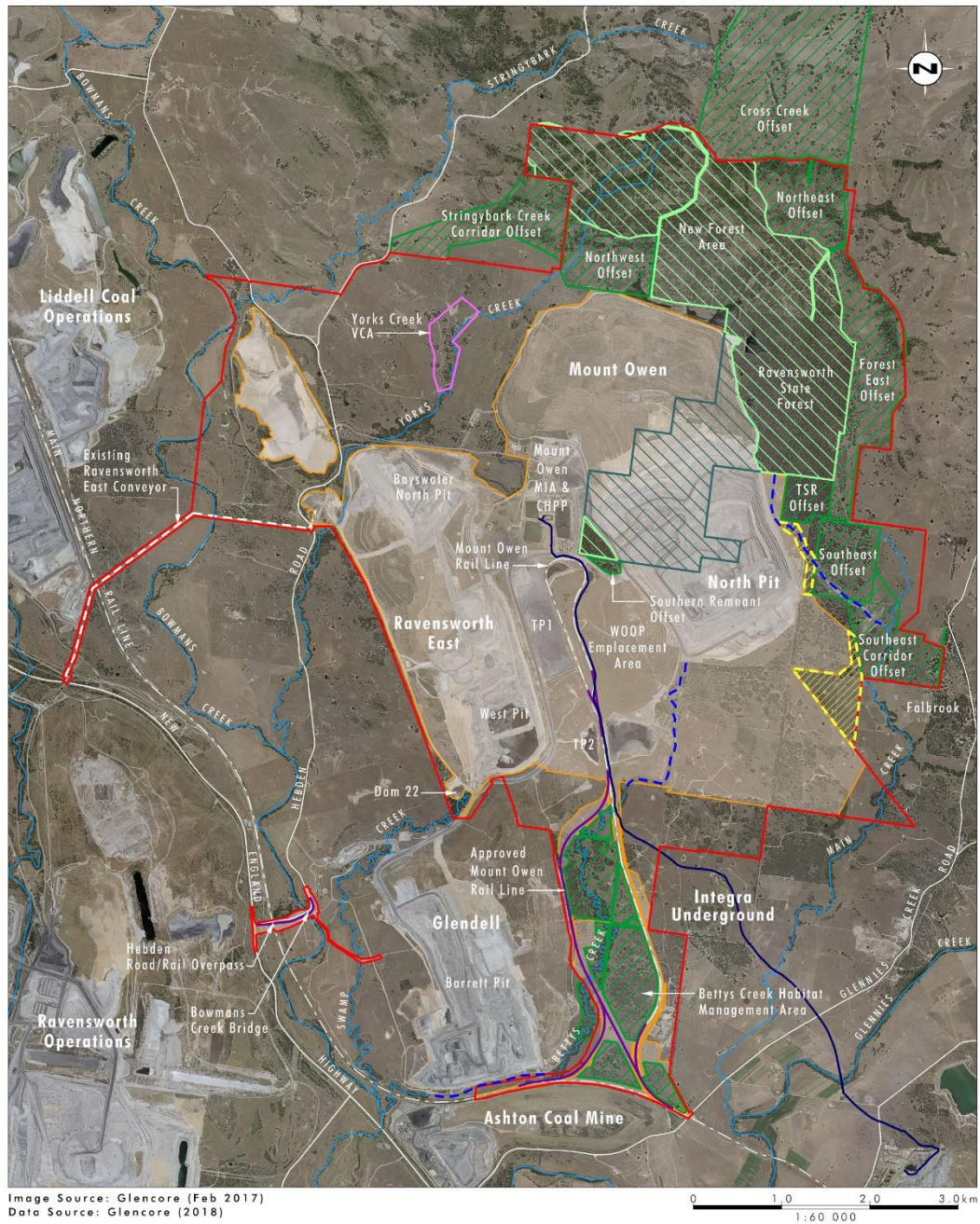
58	752462	Mine Owned Glencore
60	752462	Mine Owned Glencore
71	625171	Mine Owned Glencore
81	607296	Mine Owned Glencore
100	752462	Mine Owned Glencore
100	791739	Mine Owned Glencore
101	752462	Mine Owned Glencore
101	791739	Mine Owned Glencore
102	752462	Mine Owned Glencore
107	880058	Mine Owned Glencore
112	850054	Mine Owned Glencore
121	752462	Mine Owned Glencore
123	752462	Mine Owned Glencore
180	858299	Mine Owned Glencore
190	752462	State Forest
191	752462	State Forest
192	752462	State Forest
193	752462	State Forest
194	752462	State Forest
195	752462	State Forest
197	752462	State Forest
198	752462	State Forest
199	752462	State Forest
200	752462	State Forest
201	752462	State Forest
202	1154684	Mine Owned Glencore
203	752462	State Forest
204	752462	State Forest
205	752462	State Forest
206	752462	State Forest
207	752462	State Forest
208	752462	State Forest
217	752462	State Forest
232	752470	Mine Owned Glencore
234	752462	Mine Owned Glencore
235	752462	Mine Owned Glencore
352	867083	Mine Owned Glencore
353	867083	Mine Owned Glencore
354	867083	Mine Owned Glencore
355	867083	Mine Owned Glencore
356	867083	Crown Land
264	1207775	State Forest
383	752462	Mine Owned Glencore
921	844642	Mine Owned Glencore
922	844642	Mine Owned Glencore
923	844642	Mine Owned Glencore
924	862883	Mine Owned Glencore
925	862883	Mine Owned Glencore
926	862883	Mine Owned Glencore
1221	709371	Mine Owned Glencore
7001	93635	Crown Land (TSR)



7302	1132839	Crown Land (TSR)
7303	1132839	State Forest
2A	6842	Mine Owned Glencore
A	158063	Mine Owned Glencore
Various Crown Land reserves		



## APPENDIX 2 DEVELOPMENT LAYOUT PLANS



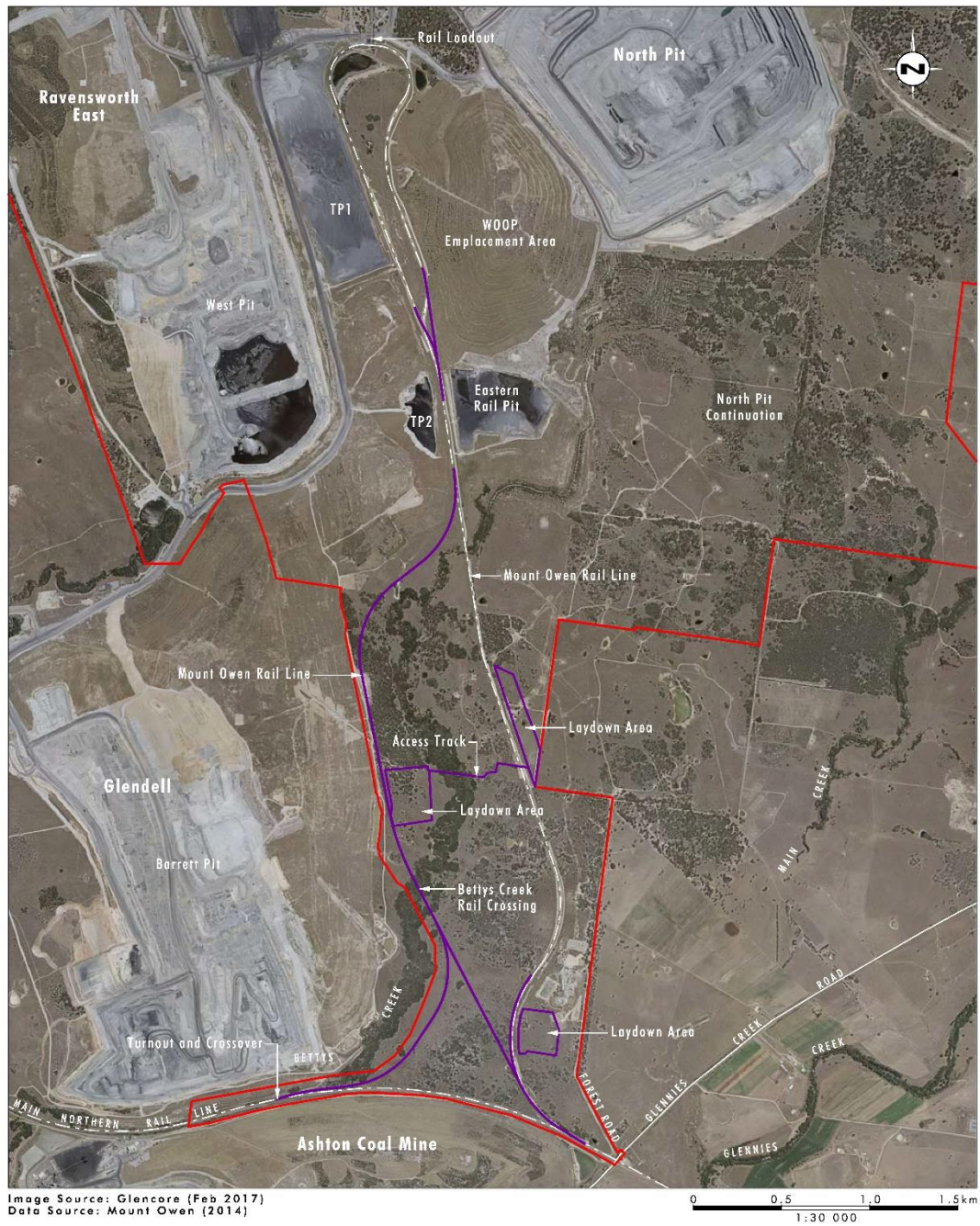
- Legend**
- SSD-S850 Modification Consent Boundary
  - Approved Operational Area
  - Additional Disturbance Area
  - Yorks Creek VCA
  - Biodiversity Offset Area
  - Ravensworth State Forest
  - Ravensworth State Forest within Approved Operational Area
  - Approved Infrastructure
  - Existing Bettys Creek Diversion
  - Integra Water Pipeline
  - Drainage Line

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20190514 8.55

FIGURE 2A  
Operations Overview

Figure 2A: Development Layout – Mount Owen Continued Operations Project





**Legend**  
 SSD-5850 Modification Consent Boundary  
 Approved Rail Line Upgrade

**FIGURE 2B**  
**Approved Rail Line**  
**Conceptual Design**

File Name (A4): 3810\_277.dgn  
 20190510 10.21

**Figure 2B: Development Layout – Rail Infrastructure Upgrades**



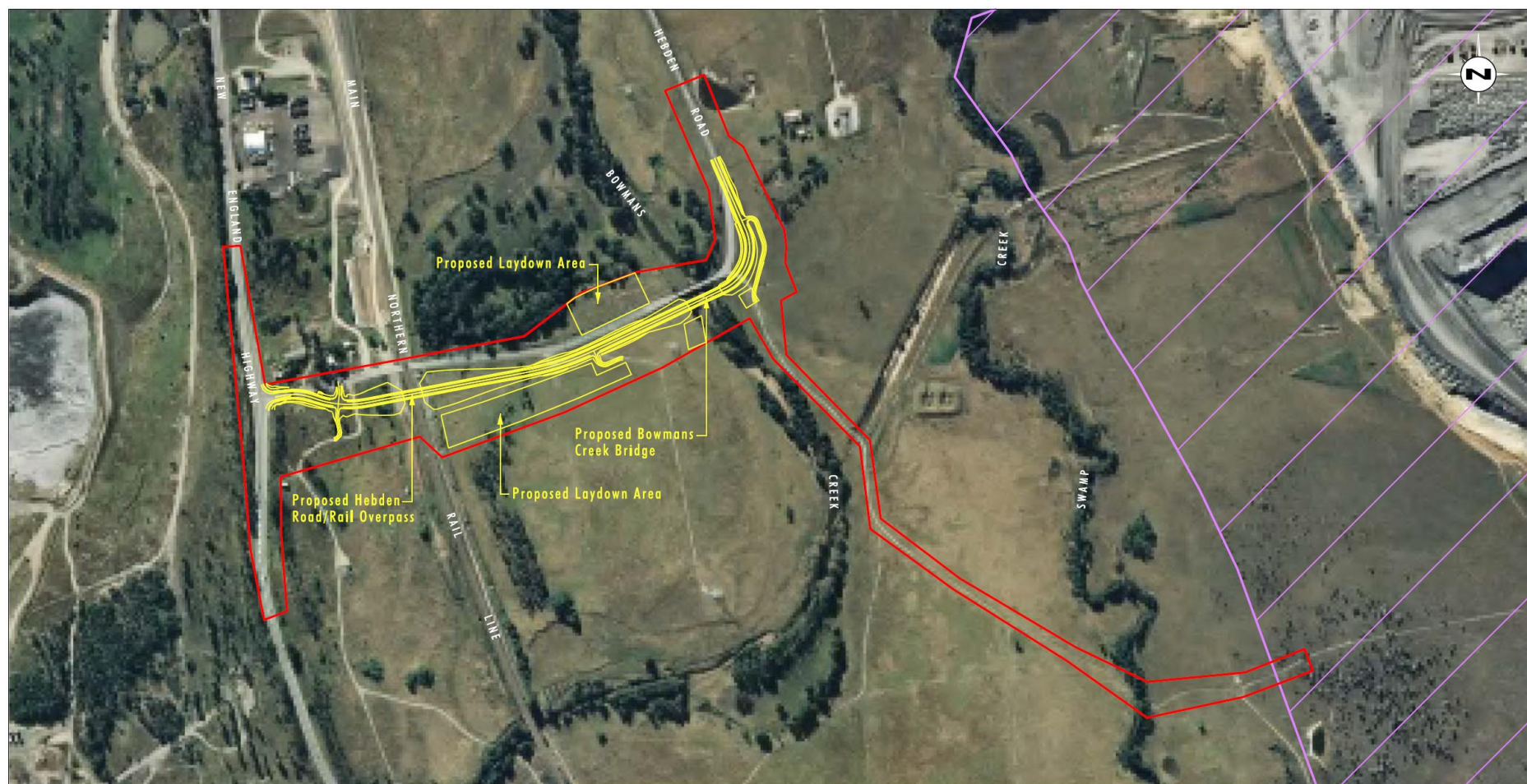


Image Source: Mount Owen (2013)  
Data Source: Mount Owen (2014)

0 100 200 400m  
1:7 500

#### Legend

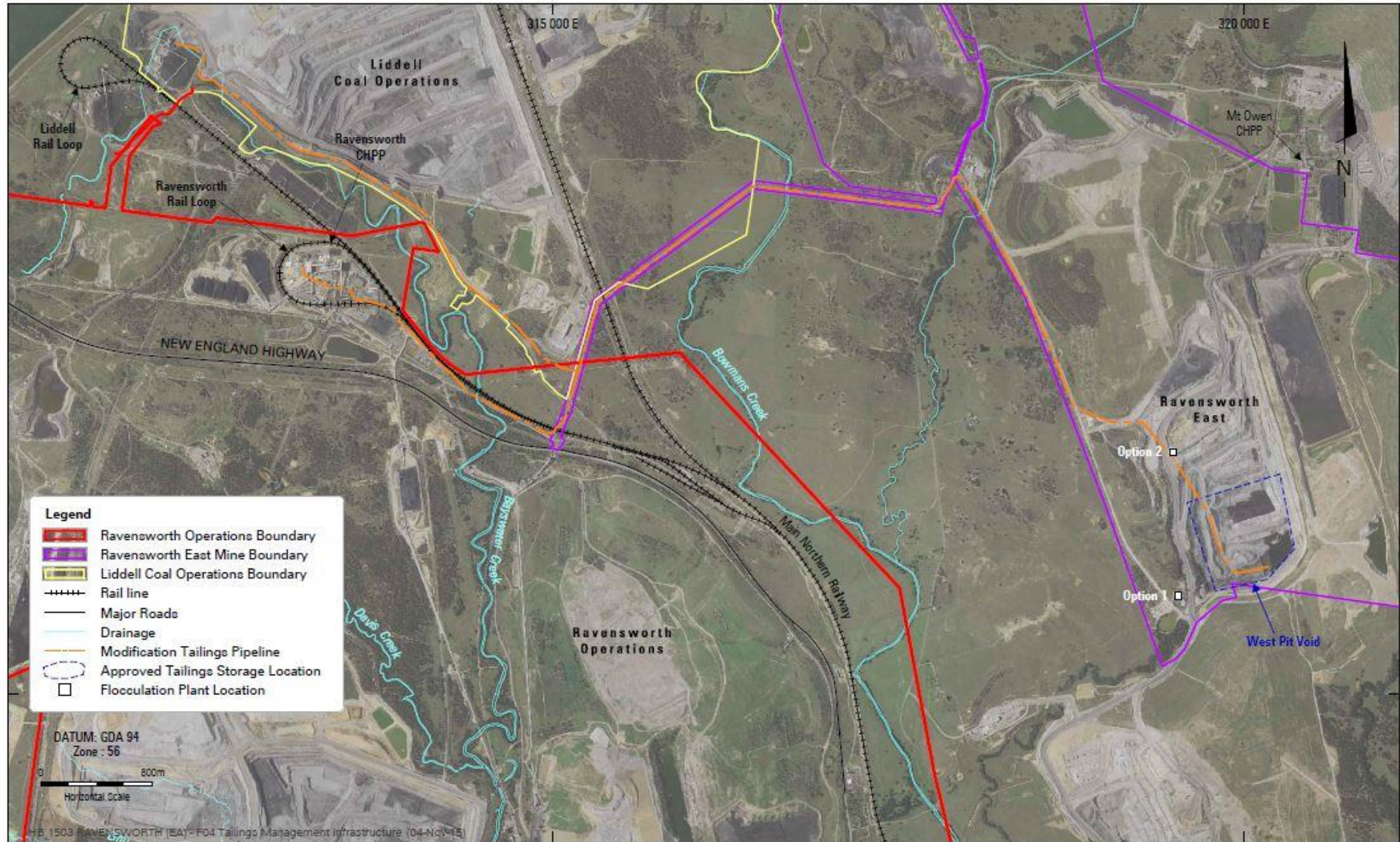
- ▬ Project Area
- ▬ Proposed Hebden Road Upgrade Works
- ▬ Approved Glendell Disturbance Area

FIGURE 2.15

Hebden Road Upgrade Works  
Conceptual Design

**Figure 2C:** Development Layout – Hebden Road Upgrades





**Figure 2D:** Development Layout – Greater Ravensworth tailings management infrastructure



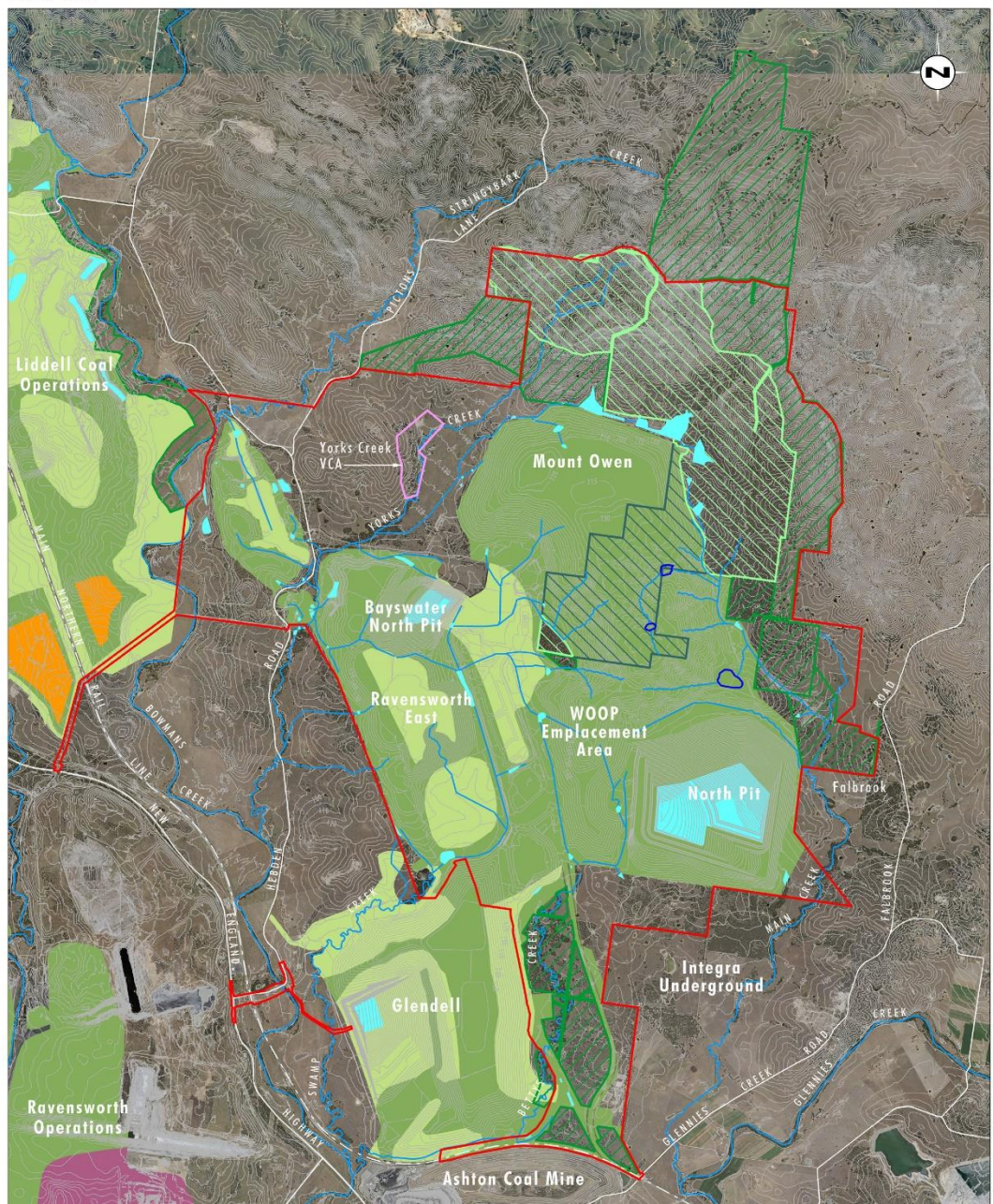


Image Source: Glencore (2017)  
 Data Source: Glencore (2018), Ravensworth Operation Vegetation: Umwelt (2010),  
 Liddell Coal Operations Vegetation: Umwelt (2016)  
 Note: Contour Interval 5m(AHD). Equilibrium Water Level shown in North Pit Void.

**Legend**

- |  |  |
|--|--|
| <span style="border: 2px solid red; padding: 2px;"> </span> SSD-5850 Modification Consent Boundary   | <span style="background-color: orange; border: 1px solid black; padding: 2px;"> </span> Grassland for Stabilisation (Liddell Coal Operations)      |
| <span style="border: 2px solid pink; padding: 2px;"> </span> Yorks Creek VCA   | <span style="background-color: purple; border: 1px solid black; padding: 2px;"> </span> Grazing (Ravensworth Operations)                           |
| <span style="border: 2px solid blue; padding: 2px;"> </span> Dryland Attenuation Basin   | <span style="background-color: green; border: 1px solid black; padding: 2px;"> </span> Biodiversity Offset Area                                    |
| <span style="background-color: cyan; border: 1px solid black; padding: 2px;"> </span> Water Storage  | <span style="background-color: lightgreen; border: 1px solid black; padding: 2px;"> </span> Ravensworth State Forest                               |
| <span style="background-color: green; border: 1px solid black; padding: 2px;"> </span> Native Woodland   | <span style="background-color: #90EE90; border: 1px solid black; padding: 2px;"> </span> Ravensworth State Forest within Approved Operational Area |
| <span style="background-color: lightgreen; border: 1px solid black; padding: 2px;"> </span> Open Grassland (Potential grazing areas) with pockets of Native Vegetation | <span style="border: 1px solid blue; padding: 2px;"> </span> Drainage Line   |

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 20190510 10:39

FIGURE 2E  
 Conceptual Final Landform

Figure 2E: Conceptual Final Landform



## APPENDIX 3 RECEIVER ZONES AND LOCATIONS

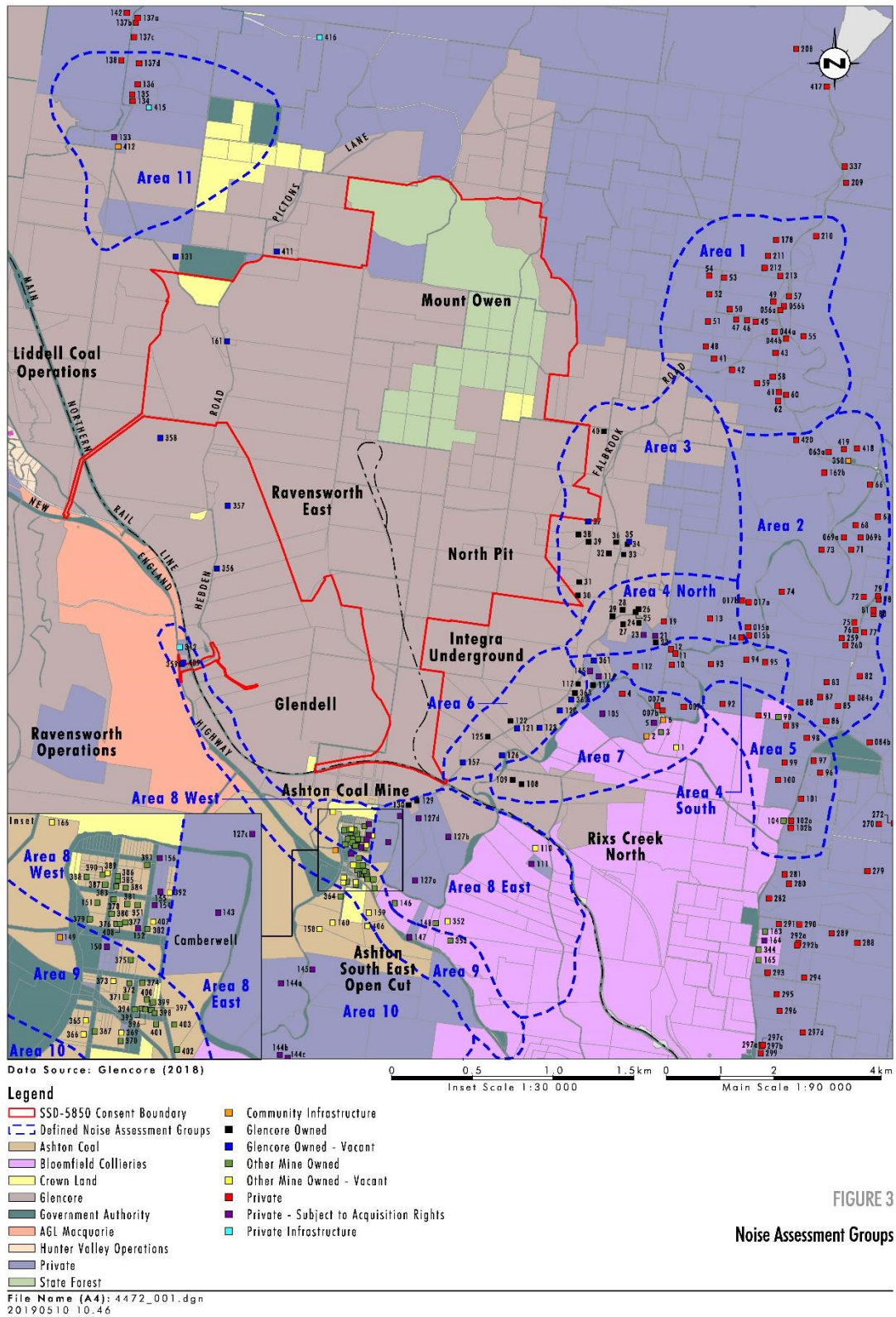


FIGURE 3  
Noise Assessment Groups



## APPENDIX 4 NOISE COMPLIANCE ASSESSMENT

### Applicable Meteorological Conditions

1. The noise criteria in Table 3 of the conditions are to apply under all meteorological conditions except the following:
  - (a) during periods of rain or hail;
  - (b) average wind speed at microphone height exceeds 5 metres/second;
  - (c) wind speeds greater than 3 metres/second measured at 10 metres above ground level; or
  - (d) temperature inversion conditions greater than 3°C/100 metres.

### Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station located on the site.

### Compliance Monitoring

3. Attended monitoring is to be used to evaluate compliance with the relevant conditions of this consent.
4. This monitoring must be carried out at least once a month (at least two weeks apart) for the first 12 months following commencement under this consent, and then quarterly thereafter, unless the Secretary directs otherwise.

*Note: The Secretary may direct that the frequency of attended monitoring increase or decrease at any time during the life of the development.*

5. Unless the Secretary agrees otherwise, this monitoring must be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (as amended from time to time), in particular the requirements relating to:
  - (a) monitoring locations for the collection of representative noise data;
  - (b) meteorological conditions during which collection of noise data is not appropriate;
  - (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
  - (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration **with the exception of applying appropriate modifying factors for low frequency noise during compliance testing. This should be undertaken in accordance with Fact Sheet C of the *NSW Noise Policy for Industry* (EPA, 2017).**



## APPENDIX 5 BIODIVERSITY OFFSET STRATEGY

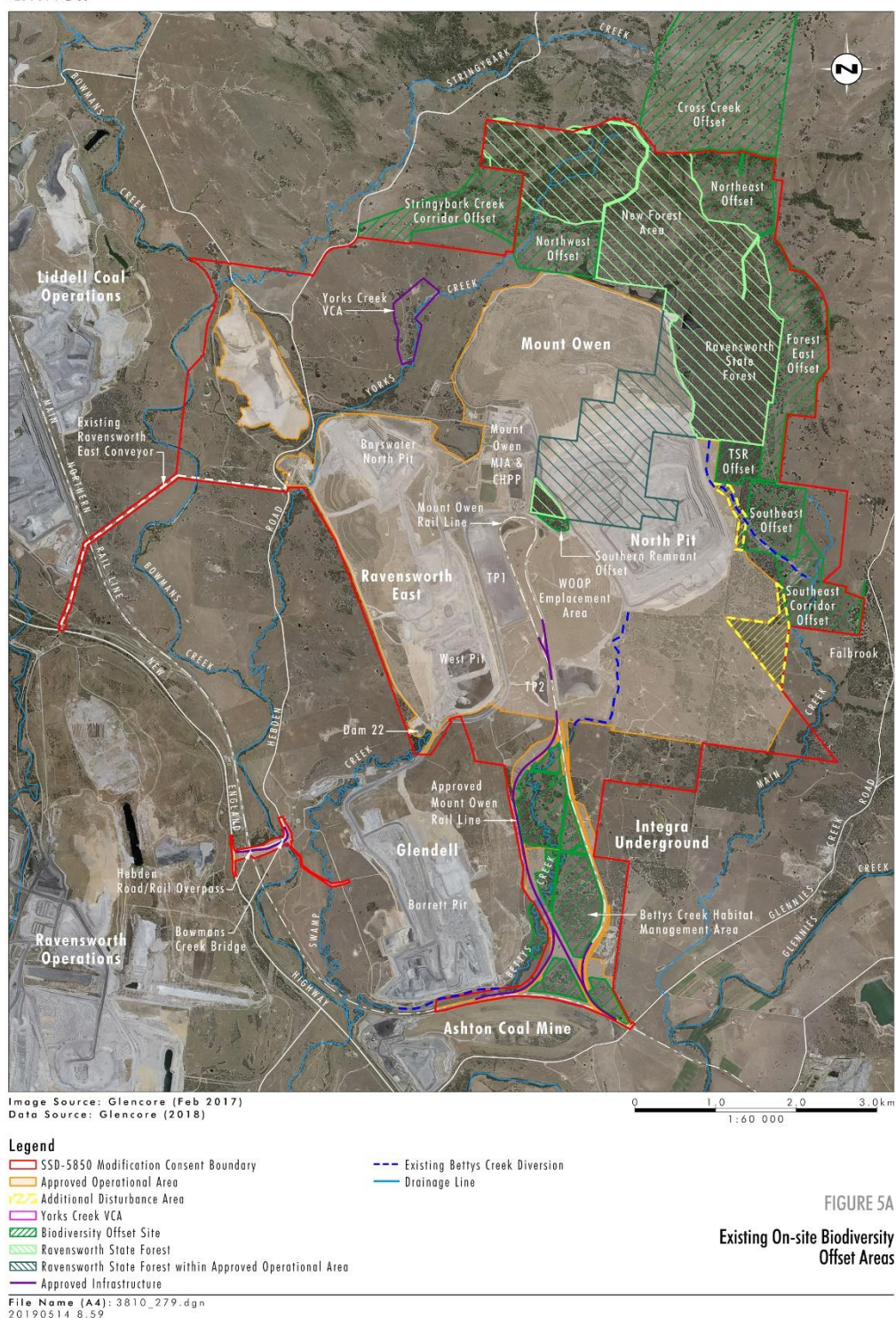


Figure 5A: Existing On-site Biodiversity Offset Areas



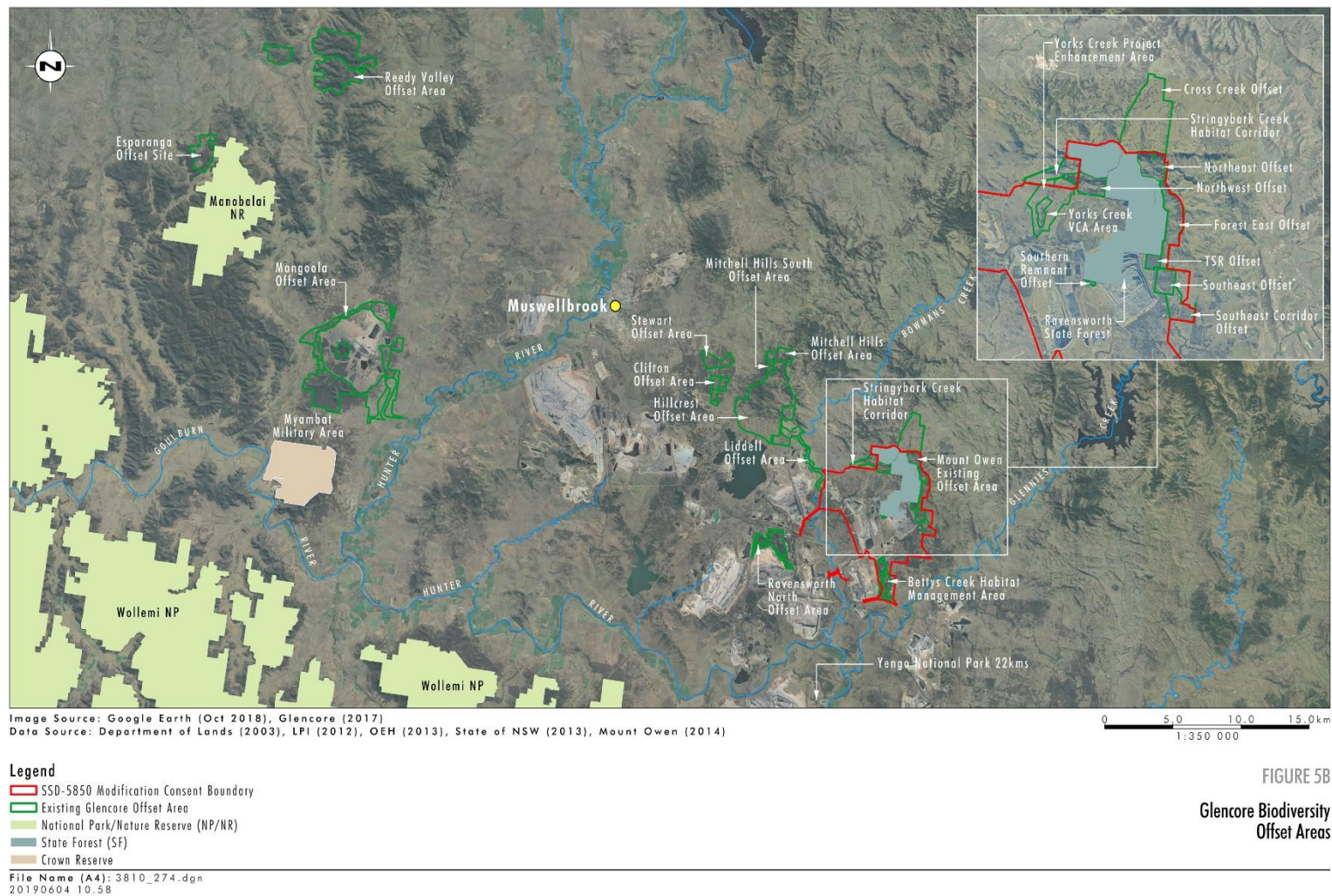
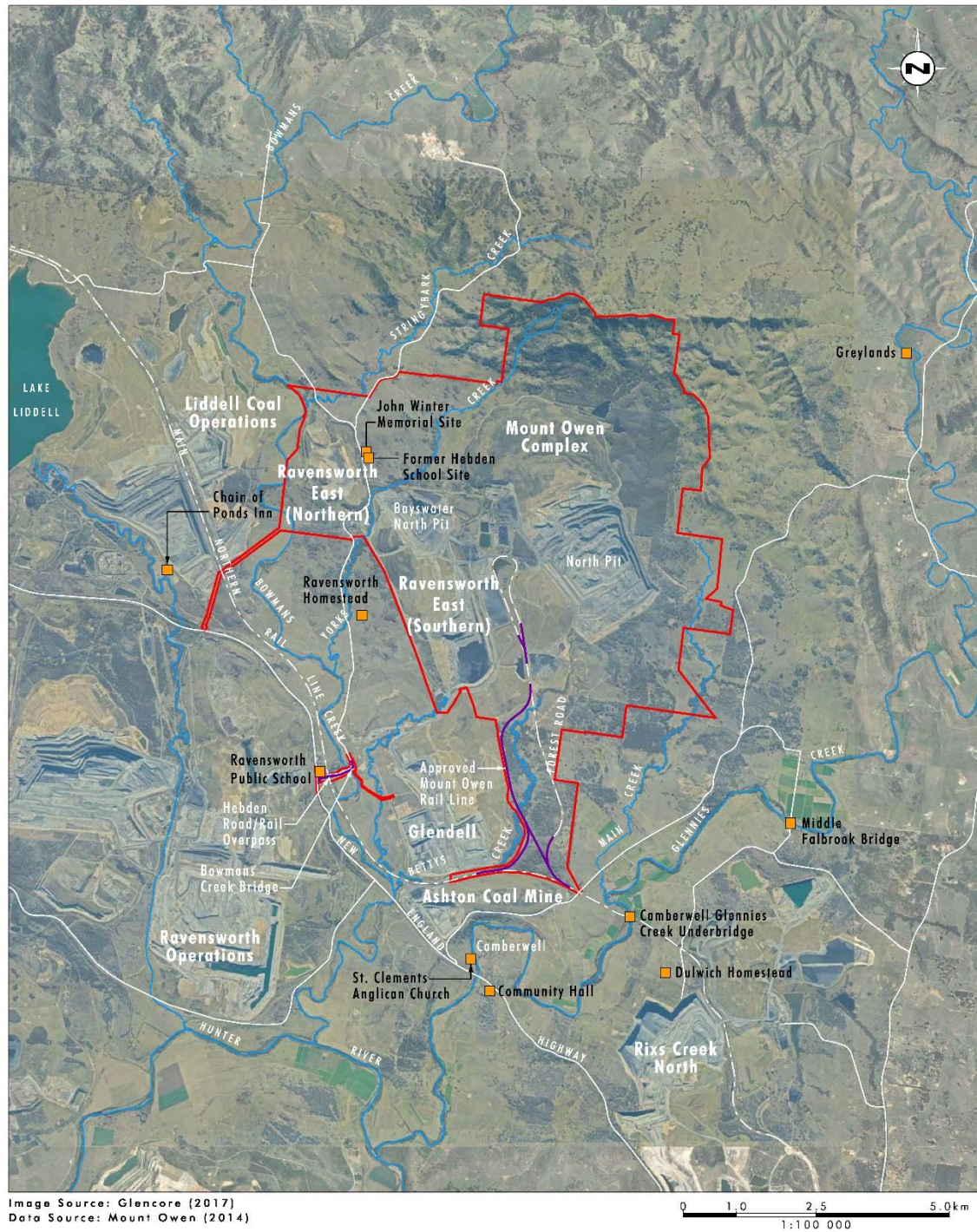


Figure 5B: Biodiversity Offset Strategy



## APPENDIX 6 HISTORIC HERITAGE



- Legend**
- SSD-5850 Modification Consent Boundary
  - Approved Rail Line Upgrade
  - Historic Heritage Item

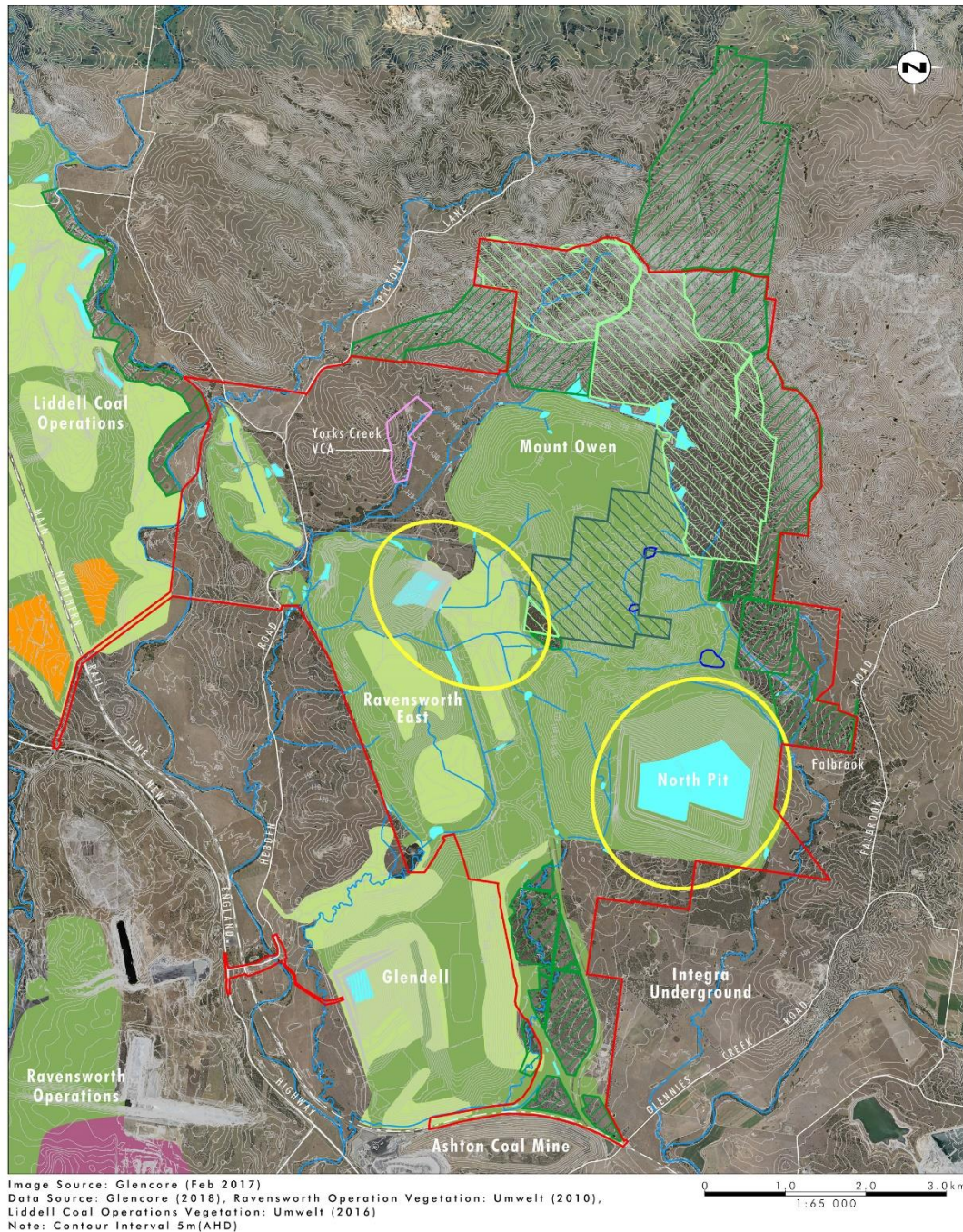
FIGURE 6

Location of Historic Heritage Items

Figure 6: Historic Heritage Items



## APPENDIX 7



### Legend

- |  |  |
|--|--|
| SSD-5850 Modification Consent Boundary                                     | Grazing (Ravensworth Operations)                   |
| Yorks Creek VCA  | Ravensworth State Forest                           |
| Water Storage  | Biodiversity Offset Area                           |
| Native Woodland  | Ravensworth State Forest Approved Operational Area |
| Open Grassland (Potential grazing areas) with pockets of Native Vegetation | Potential for Alternative Land Uses                |
| Grassland for Stabilisation (Liddell Coal Operations)                      | Dryland Attenuation Basin                          |
|  | Drainage Line                                      |

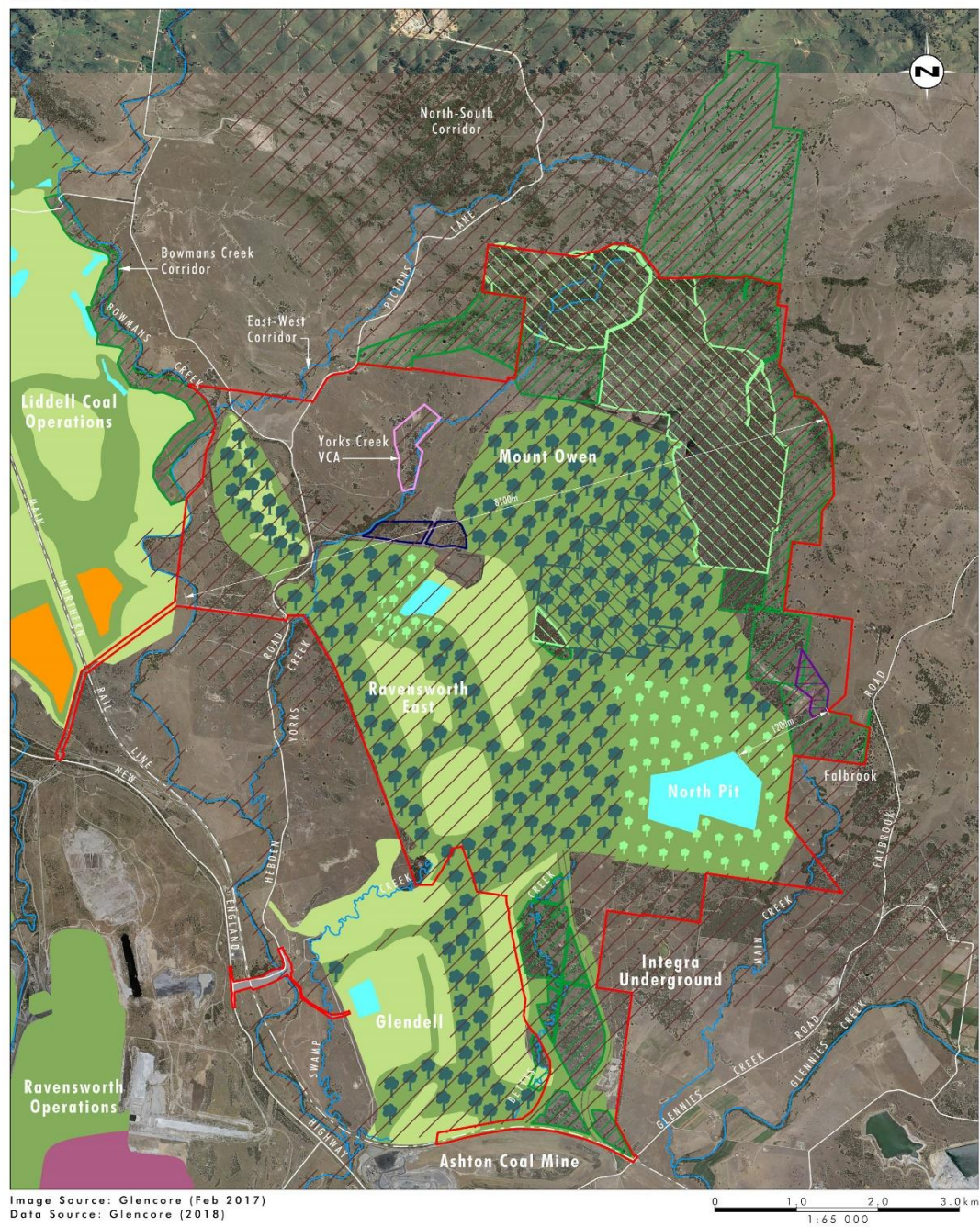
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 20190325 14.12

FIGURE 7A

Conceptual Post Mining  
 Land Use Design

Figure 7A: Final Landform Rehabilitation Plan





- Legend**
- |  |   |                          |
|--|---|--------------------------|
| SSD-5850 Modification Consent Boundary                                     | Grassland for Stabilisation (Liddell)           | Biodiversity Offset Area |
| Yorks Creek VCA  | Grazing (Ravensworth Operations)                |                          |
| Water Storage  | Habitat Connectivity                            |                          |
| Rehabilitation Woodland Advanced   | Additional Active Revegetation Area             |                          |
| Rehabilitation Woodland Early  | East-West Corridor Management Area              |                          |
| Native Woodland  | Drainage Line                                   |                          |
| Open Grassland (Potential grazing areas) with pockets of Native Vegetation | Ravensworth State Forest within Operations Area |                          |

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20190510 12.24

FIGURE 7B

Conceptual Habitat Connectivity and  
Conceptual Final Landform Area  
10 Year Post Closure

Figure 7B: East-West Corridor Management Area and Final Landform Habitat Connectivity



## APPENDIX 8 PLANNING AGREEMENT

*Table 1 – General Terms of the Applicant's VPA Offer*

<b>Applicant's Contribution</b>	<b>Intended Use</b>	<b>Payment Details*</b>
<b>\$400,000</b>	Economic Development Initiatives – Riverfront Beautification	Ten year term comprising payments of \$50,000 per annum for the first five years and \$30,000 per annum for the remaining five years
<b>\$500,000</b>	Completion of the All Abilities Playground at Rose Point Park	Four payments totalling \$500,000, to be paid at identified stages of the project.
<b>\$100,000</b>	Sponsorship of Community Groups	Five year term comprising payments of \$20,000 per annum
<b>\$24,000</b>	Support for Aboriginal Cultural Events	Three year term comprising payments of \$8,000 per annum

*\* Payments subject to CPI adjustments*

*Table 2 – General Terms of the Applicant's PA Offer*

<b>Applicant's Contribution</b>	<b>Intended Use</b>	<b>Payment Details</b>
<b>\$226,000</b>	Singleton Community and Economic Development Fund	Payment into the fund when associated framework, policies and procedures are established and agreed