

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project 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 project.

Frank Sartor MP
Minister for Planning

Sydney

2007

Blue type represents 22 July 2008 modification.

Red type represents 23 June 2009 modification.

Green type represents 4 November 2009 modification.

Purple type represents 23 February 2010 modification.

Lavender type represents 22 June 2012 modification

SCHEDULE 1

Application Number:	06_0014
Proponent:	Xstrata Mangoola Pty Limited
Approval Authority:	Minister for Planning
Land:	See Appendix 1
Project:	Mangoola Coal Project

TABLE OF CONTENTS

DEFINITIONS	3
ADMINISTRATIVE CONDITIONS	5
Obligation to Minimise Harm to the Environment	5
Terms of Approval	5
Limits on Approval	5
Management Plans/Monitoring Programs	5
Structural Adequacy	5
Demolition	5
Operation of Plant and Equipment	5
Planning Agreement	6
SPECIFIC ENVIRONMENTAL CONDITIONS	7
Acquisition of Affected Properties	7
Noise	7
Blasting and Vibration	10
Air Quality	12
Meteorological Monitoring	14
Surface and Ground Water	14
Rehabilitation and Landscape Management	16
Aboriginal Cultural Heritage	19
Heritage	19
Traffic and Transport	19
Visual Impact	21
Greenhouse Gas	22
Waste Minimisation	22
ADDITIONAL PROCEDURES	23
Notification of Landowners	23
Independent Review	23
Land Acquisition	24
ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING	26
Environmental Management Strategy	26
Environmental Monitoring Program	26
Incident Reporting	26
Annual Reporting	26
Independent Environmental Audit	27
Community Consultative Committee	27
Access to Information	28
APPENDIX 1: SCHEDULE OF LAND	29
APPENDIX 2: PROJECT LAYOUT PLAN	31
APPENDIX 3: STATEMENT OF COMMITMENTS	32
APPENDIX 4: GENERAL TERMS FOR THE PLANNING AGREEMENT	38
APPENDIX 5: LANDOWNERS WITH ACQUISITION RIGHTS	39
APPENDIX 6: CONCEPTUAL OFFSET STRATEGY AND REHABILITATION PLANS	41
APPENDIX 7: ABORIGINAL SITES	44
APPENDIX 8: INDEPENDENT DISPUTE RESOLUTION PROCESS	46
APPENDIX 9: VISUAL VEGETATION SCREEN	47

DEFINITIONS

Acquisition Zone	The privately owned land listed in the table in Appendix 5 where there are no negotiated agreements in place between the Proponent and the applicable landowner
AEMR	Annual Environmental Management Report
BCA	Building Code of Australia
CCC	Community Consultative Committee
Construction Route 1	The access route described in the December 2008 Environmental Assessment
Council	Muswellbrook Shire Council
CHPP	Coal Handling and Preparation Plant
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning
Director-General	Director-General of Department of Planning, or delegate
Dirty water	Water from the project's dirty water management system as described in the EA
DRE	Division of Resources and Energy within the Department of Trade and Investment, Regional Infrastructure and Services
EA	Environmental assessment titled <i>Anvil Hill Project Environmental Assessment, Volumes 1-7</i> , dated August 2006, including the response to submissions, as modified by: <ul style="list-style-type: none"> (a) modification application MP 06_0014 MOD 1, and accompanying Environmental Assessment dated April 2008, including the letter from Xstrata to the Department dated 4 July 2008; (b) modification application MP 06_0014 MOD 2, and accompanying Environmental Assessment prepared by Umwelt Environmental Consultants and dated December 2008, including the Response to Submissions dated April 2009; (c) modification application MP 06_0014 MOD 3, and accompanying Environmental Assessment titled <i>Environmental Assessment for Section 75W Modification to Approved Mining Operation, Mangoola Coal – Relocation of Mining Infrastructure Area</i>, dated September 2009; (d) modification application MP 06_0014 MOD 5, and accompanying Environmental Assessment titled <i>Environmental Assessment for Night Time Rail Works</i>, dated February 2010; and (e) modification application MP 06_0014 MOD 4, and accompanying Environmental Assessment titled <i>Modifications to Mangoola Coal Mine Plans and Relocation of 500kV Electricity Transmission Line Environmental Assessment</i> (4 volumes), dated December 2010, including the Response to Submissions dated September 2011.
Early Works	The works identified in modification application MP 06_0014 MOD 1, as modified by the letter from Xstrata dated 4 July 2008, including construction and use of the: mine access road; temporary access roads; site office and associated amenities and compound; Coal Handling and Preparation Plant pad; borrow pit for the supply of material for civil works and disposal of unsuitable material; water pump and temporary pipeline from the Hunter River; and localised clearing associated with Aboriginal site salvage works and geotechnical investigations.
EEC	Endangered Ecological Community as defined under the NSW <i>Threatened Species Conservation Act 1995</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPA	Environment Protection Authority
Evening	The period from 6pm to 10pm
Land	Land means 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 approval
Mining Operations	Includes all coal extraction, processing, and transportation activities carried out on site
Minister	Minister for Planning, or delegate
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
NOW	NSW Office of Water
OEH	Office of Environment and Heritage
Offset Strategy	The conservation and enhancement program described in the EA and response to submissions

Panel	Independent Hearing and Assessment Panel for the project
Privately owned land	Land that is not owned by a public agency, or a mining company (or its subsidiary)
Project	The development as described in the EA
Proponent	Xstrata Mangoola Pty Limited , or its successors
Response to Submissions	The Proponent's response to issues raised in submissions, including Parts A, B and C
RMS	Roads and Maritime Services
ROM	Run of Mine
Saline water	Water from the project's saline water management system as described in the EA
Site	The land referred to in schedule 1
Statement of Commitments	The Proponent's commitments in Appendix 3.

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.

Terms of Approval

2. The Proponent shall carry out the project generally in accordance with the:
 - (a) EA;
 - (b) statement of commitments; and
 - (c) conditions of this approval.

Notes:

- The general layout of the project is shown in Appendix 2.
- The statement of commitments is reproduced in Appendix 3 (excluding the commitments which are directly reflected in, or inconsistent with, the conditions of this approval).

3. If there is any inconsistency between the above, the conditions of this approval shall prevail to the extent of the inconsistency.
4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
 - (a) any reports, plans, programs, strategies or correspondence that are submitted in accordance with this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans, programs, strategies or correspondence.

Limits on Approval

5. Mining operations may take place for 21 years from the grant of the mining lease for the project.

Note: Under this Approval, the Proponent is required to rehabilitate the site to the satisfaction of the Director-General and DRE. Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.

6. The Proponent shall not extract more than 10.5 million tonnes of ROM coal a year from the site.
7. The Proponent shall only transport coal from the site by rail.

Management Plans/Monitoring Programs

8. With the approval of the Director-General, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.

Structural Adequacy

9. The Proponent shall 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.

Notes:

- Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.
- Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.

Demolition

10. The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

Operation of Plant and Equipment

11. The Proponent shall ensure that all plant and equipment used on site is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

Planning Agreement

12. By the end of October 2012, or as otherwise agreed by the Director-General, the Proponent shall revise and update the planning agreement for the project with Council in accordance with:
- (a) Division 6 of Part 4 of the EP&A Act; and
 - (b) the terms of the Proponent's offer for contributions dated 30 March 2012, which includes the matters set out in Appendix 4.
-

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

ACQUISITION OF AFFECTED PROPERTIES

Acquisition Upon Request

- Upon receiving a written request for acquisition from the owner of the land listed in the table in Appendix 5, the Proponent shall acquire the land in accordance with the procedures in conditions 10-12 of schedule 4.

Best Endeavours To Acquire

- Prior to starting mining operations on site, the Proponent shall demonstrate to the satisfaction of the Director-General that it has used its best endeavours to acquire all of the land listed in the table in Appendix 5, or to enter into a negotiated agreement with the applicable landowners.

At least 3 months prior to the proposed start of mining operations on site, the Proponent shall submit a report to the Director-General that:

- identifies the land in the acquisition zone; and
- demonstrates that it has used its best endeavours to acquire this land, or enter into a negotiated agreement with the applicable landowner.

Note: In this condition, negotiated agreement means a written agreement between the Proponent and the landowner in which the landowner agrees, for the purpose of this approval, not to be counted as a number in the acquisition zone.

NOISE

Noise Impact Assessment Criteria

- The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1.

Table 1: Noise impact assessment criteria dB(A)

Day	Evening	Night		Land Number
$L_{Aeq}(15 \text{ minute})$	$L_{Aeq}(15 \text{ minute})$	$L_{Aeq}(15 \text{ minute})$	$L_{A1}(1 \text{ minute})$	
40	40	40	45	66
40	40	39	45	162
39	39	39	45	110, 111, 148, 164
38	38	38	45	125D, 125E, 125F, 130, 174A, 174B, 175, 192, 193, 200
37	37	37	45	96A, 96B, 168, 184, 116A, 116B, 116C, 116D, 116E, 116F, 116G, 125A, 125C, 176
36	36	36	45	79, 103, 104, 114, 125B, 134A, 134B, 141, 178, 182, 183A, 183B, 183C, 185, 187, 189, 190, 191, 198, 199, 241A, 241B, 241C, 251, 269B
41	41	41	-	Anglican Church, Castlerock Road

However, if the Proponent has a written negotiated noise agreement with any landowner of the land listed in Table 1, and a copy of this agreement has been forwarded to the Department and EPA, then the Proponent may exceed the noise limits in Table 1 in accordance with the negotiated noise agreement.

Notes:

- To determine compliance with the $L_{Aeq}(15 \text{ minute})$ noise limits, noise from the project is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the project is impractical, the EPA may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.
- To determine compliance with the $L_{A1}(1 \text{ minute})$ noise limits, noise from the project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the project is

impractical, the EPA may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).

- The noise emission limits identified in the above table apply under meteorological conditions of:
 - wind speeds of up to 3 m/s at 10 metres above ground level; or
 - temperature inversion conditions of up to 3°C/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.

Land Acquisition Criteria

- If the noise generated by the project causes sustained exceedances of the criteria in Table 2, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 10-12 of schedule 4.

Table 2: Land acquisition criteria dB(A)

Day/Evening/Night $L_{Aeq}(15 \text{ minute})$	Land
40	All privately owned land, excluding the land listed in the table to Appendix 5.

Note: Noise generated by the project is to be measured in accordance with the notes presented below Table 1.

Cumulative Noise Criteria

- The Proponent shall take all reasonable and feasible measures to ensure that the noise generated by the project combined with the noise generated by other mines does not exceed the following amenity criteria on any privately owned land, excluding the land listed in the table to Appendix 5, to the satisfaction of the Director-General:
 - $L_{Aeq}(11 \text{ hour})$ 50 dB(A) – Day;
 - $L_{Aeq}(4 \text{ hour})$ 45 dB(A) – Evening; and
 - $L_{Aeq}(9 \text{ hour})$ 40 dB(A) – Night.
- If the cumulative noise generated by the project combined with the noise generated by other mines causes sustained exceedances of the following amenity criteria on any privately owned land, excluding the land listed in the table to Appendix 5, then upon receiving a written request from the landowner, the Proponent shall take all reasonable and feasible measures to acquire the land on an equitable basis as possible with the relevant mines, in accordance with the procedures in conditions 10-12 of schedule 4, to the satisfaction of the Director-General:
 - $L_{Aeq}(11 \text{ hour})$ 53 dB(A) – Day;
 - $L_{Aeq}(4 \text{ hour})$ 48 dB(A) – Evening; and
 - $L_{Aeq}(9 \text{ hour})$ 43 dB(A) – Night.

Notes:

- For the purpose of this condition, the expression “Proponent” in conditions 10-12 of schedule 4 should be interpreted as the Proponent and any other relevant mine owners.
- The cumulative noise generated by the project combined with the noise generated by other mines is to be measured in accordance with the relevant procedures in the NSW Industrial Noise Policy.

Traffic Noise Impact Assessment Criteria

- The Proponent shall take all reasonable and feasible measures to ensure that the traffic noise generated by the project (after commencement of mining operations) combined with the traffic noise generated by other mines does not exceed the traffic noise impact assessment criteria in Table 3:

Table 3: Traffic noise criteria dB(A)

Road	Day/Evening	Night
	$L_{Aeq}(5 \text{ hour})$	$L_{Aeq}(1 \text{ hour})$
Denman Road	60	55
Wybong Road, Bengalla Link Road	55	50

Note: Traffic noise generated by the project is to be measured in accordance with the relevant procedures in the EPA's Environmental Criteria for Road Traffic Noise.

Additional Noise Mitigation Measures

- Upon receiving a written request from:
 - a landowner of the land listed in the table to Appendix 5 (unless the landowner has requested acquisition); or

- a landowner of the land listed in Table 1 (except where a negotiated noise agreement is in place); or
- the owner of any residence where subsequent operational noise monitoring shows the noise generated by the project is greater than, or equal to, $L_{Aeq(15 \text{ minute})}$ 35 dB(A) (except where a negotiated noise agreement is in place); or
- an owner of any of the 6 residences on Wybong Road or Bengalla Link Road where traffic noise levels are predicted to exceed the traffic noise criteria in Table 3 (ie. Residence numbers 96B, 168, 203F, 203G, 246 and 249); or
- an owner of any of the 2 residences adjacent the Ulan to Muswellbrook rail line where rail noise levels are predicted in the EA to cause additional exceedances of the applicable rail noise criteria (ie. Residence numbers 125E and 203E),

the Proponent shall implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner.

These additional mitigation measures must be reasonable and feasible.

If within 3 months of receiving this request from the landowner, the Proponent 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 Director-General for resolution.

Within 3 months of this approval (or within 3 months of any subsequent modification to the approval which results in additional properties being affected), the Proponent shall notify all applicable landowners that they are entitled to receive additional noise mitigation measures, to the satisfaction of the Director-General.

9. Prior to starting mining operations, the Proponent shall ensure that all development on site is carried out during the day, with the exception of:
 - (a) development that is inaudible at residences on privately owned land;
 - (b) the delivery of materials to the site as requested by Police or other authorities for safety reasons;
 - (c) emergency work to avoid the loss of lives, property and/or to prevent environmental harm; or
 - (d) development specifically approved in writing by the Director-General.

Continuous Improvement

10. The Proponent shall:
 - (a) implement all reasonable and feasible best practice noise mitigation measures;
 - (b) operate a comprehensive noise management system on site 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 approval;
 - (c) investigate ways to reduce the noise generated by the project, including off-site road and rail noise and maximum noise levels which may result in sleep disturbance; and
 - (d) report on these investigations and the implementation and effectiveness of these measures in the AEMR,
 to the satisfaction of the Director-General.

Noise Management Plan

11. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Director-General. This plan must:
 - (a) be prepared in consultation with EPA, and be submitted to the Director-General for approval by the end of October 2012;
 - (b) describe the measures that would be implemented to ensure:
 - best practice management is being employed;
 - the noise impacts of the project are minimised during meteorological conditions when the noise limits in this approval do not apply; and
 - compliance with the relevant conditions of this approval;
 - (c) describe the project noise management system in detail;
 - (d) include a noise monitoring program that:
 - uses a combination of real-time and supplementary attended monitoring measures to evaluate the performance of the project;
 - adequately supports the proactive and reactive noise management system;
 - includes a protocol for determining exceedances of the relevant conditions of this approval; and
 - evaluates and reports on the effectiveness of the noise management system.

Note: The existing Noise Monitoring Program will continue to apply until this management plan is approved.

BLASTING AND VIBRATION

Airblast Overpressure Impact Assessment Criteria

12. The Proponent shall ensure that the airblast overpressure level from blasting at the project does not exceed the criteria in Table 3 at any residence on privately owned land.

Table 3: Airblast overpressure impact assessment criteria

Airblast overpressure level (dB(Lin Peak))	Allowable exceedance
115	5% of the total number of blasts over a period of 12 months
120	0%

Ground Vibration Impact Assessment Criteria

13. The Proponent shall ensure that the ground vibration level from blasting at the project does not exceed the criteria in Table 4.

Table 4: Ground vibration impact assessment criteria

Receiver	Peak particle velocity (mm/s)	Allowable exceedance
Residence on privately owned land	5	5% of the total number of blasts over a period of 12 months
	10	0%
Castle Hill (heritage slab hut)	5 (interim)	0%
500kV transmission line pylons	50	0%
Aboriginal rock shelters	40 (interim)	0%
Anvil Rock and 'The Book' rock formations	40 (interim)	0%

Notes:

- The impact assessment criteria for Castle Hill applies until further monitoring is undertaken to identify either blast control measures or undertake detailed archival recording of the heritage slab hut where measures cannot achieve the criteria. The impact assessment criteria for the Aboriginal rock shelters, Anvil Rock and 'The Book' apply until site specific impact assessment criteria are developed, as required by condition 14.
- The impact assessment criteria for residences and the 500kV transmission line pylons apply unless otherwise agreed with the relevant owner/s of the residence or infrastructure, and the Proponent has advised the Department in writing of the terms of this agreement.

14. Within 2 years of starting mining operations on site, or as otherwise agreed by the Director-General, the Proponent shall develop site specific ground vibration impact assessment criteria for the 16 Aboriginal rock shelters and 2 culturally significant rock formations (Anvil Rock and 'The Book') that may be affected by blasting operations to the satisfaction of the Director-General. These criteria must be:
- developed by a suitably qualified, independent geotechnical expert, whose appointment has been approved by the Director-General;
 - prepared in consultation with the EPA; and
 - based on blast monitoring and site specific data collected from the sites.

Blasting Hours

15. The Proponent shall only carry out blasting on site between 9am and 3pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of EPA.

Blasting Frequency

16. The Proponent may carry out:

- (a) a maximum of 2 blasts a day;
 - (b) 5 blasts a week, averaged over a 12 month period;
 - (c) only 1 blast a week, averaged over a 12 month period, with a maximum instantaneous charge of greater than 1,500 kilograms; and
 - (d) only 1 blast a day when it carries out a blast with a maximum instantaneous charge of greater than 1,500 kilograms,
- on site without the written approval of the Director-General.

Operating Conditions

- 17. During mining operations on site, the Proponent shall implement best blasting practice to:
 - (a) protect the safety of people, property, public infrastructure, and livestock;
 - (b) protect significant rock shelters and formations of Aboriginal and non-indigenous cultural heritage significance; and
 - (c) minimise the dust and fume emissions from blasting at the project, to the satisfaction of the Director-General.
- 18. The Proponent shall not undertake blasting within 500 metres of any privately owned land or any land not owned by the Proponent, unless suitable arrangements have been made with the landowner and any tenants to minimise the risk of flyrock-related impact to the property to the satisfaction of the Director-General.

Road Closure

- 19. Prior to blasting within 500 metres of Wybong Road, the Proponent shall prepare a Road Closure Management Plan for the project to the satisfaction of Council and DRE; and following approval, implement this plan to the satisfaction of Council and DRE.

Public Notice

- 20. During mining operations on site, the Proponent shall:
 - (a) notify the landowner/occupier of any residence within 2 km of the project (as depicted in the project layout plan in Figure 2, but excluding the rail and pipeline infrastructure) who registers an interest in being notified about the blasting schedule at the mine;
 - (b) operate a Blasting Hotline, or alternate system agreed to by the Director-General, to enable the public to get up-to-date information on the blasting schedule at the project; and
 - (c) advertise the blasting hotline number in a local newspaper at least 4 times each year, to the satisfaction of the Director-General.

Property Inspections

- 21. At least 6 months prior to starting mining operations on site, the Proponent shall advise all landowners of privately owned land within 2 km of the project (as depicted in the project layout plan in Figure 2, but excluding the rail and pipeline infrastructure) that they are entitled to a structural property inspection.

If the Proponent receives a written request for a structural property inspection from the landowner, the Proponent shall within 3 months of receiving this request and prior to blasting within 2km of the property:

- (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to inspect the condition of any building or structure on the land, and recommend measures to mitigate any potential blasting impacts; and
- (b) give the landowner a copy of the property inspection report.

Property Investigations

- 22. If any landowner of privately owned land within 2 km of the project (as depicted in the project layout plan in Figure 2, but excluding the rail and pipeline infrastructure) claims that buildings and/or structures on his/her land have been damaged as a result of blasting at the project, the Proponent shall within 3 months of receiving this request:
 - (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, 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 Proponent shall repair the damages to the satisfaction of the Director-General.

If the Proponent or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 8).

Blast Monitoring Program

23. The Proponent shall prepare and implement a Blast Monitoring Program for the project to the satisfaction of the Director-General. This program must:
- be prepared in consultation with the EPA;
 - be submitted to the Director General for approval prior to carrying out any development on site; and
 - include a protocol for evaluating blasting impacts on, and demonstrating compliance with the blasting criteria in this approval for:
 - privately owned residences and structures;
 - heritage structures (including Castle Hill);
 - the 500kV transmission line;
 - rock formations (including Anvil Rock and 'The Book'); and
 - rock shelters of Aboriginal cultural heritage significance.

AIR QUALITY

Impact Assessment Criteria

24. The Proponent shall ensure that the dust emissions generated by the project do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 5, 6, and 7 at any residence on privately owned land, or on more than 25 percent of any privately owned land (excluding the dust affected properties listed in the table to Appendix 5).

Table 5: Long term impact assessment criteria for particulate matter

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³

Table 6: Short term impact assessment criterion for particulate matter

Pollutant	Averaging period	Criterion
Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m ³

Table 7: Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m ² /month	4 g/m ² /month

Note: Deposited dust is 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.

Land Acquisition Criteria

25. If the dust emissions generated by the project causes sustained exceedances of the criteria in Tables 8, 9, and 10 at any residence on privately owned land, or on more than 25 percent of any privately

owned land, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 10-12 of schedule 4.

Table 8: Long term land acquisition criteria for particulate matter

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³

Table 9: Short term land acquisition criteria for particulate matter

Pollutant	Averaging period	Criterion	Percentile¹	Basis
Particulate matter < 10 µm (PM ₁₀)	24 hour	150 µg/m ³	99 ²	Total ³
Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m ³	98.6	Increment ⁴

¹Based on the number of block 24 hour averages in an annual period.

²Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Director-General in consultation with EPA.

³Background PM₁₀ concentrations due to all other sources plus the incremental increase in PM₁₀ concentrations due to the mine alone.

⁴Incremental increase in PM₁₀ concentrations due to the mine alone.

Table 10: Long term land acquisition criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m ² /month	4 g/m ² /month

Note: Deposited dust is 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.

Operating Conditions

26. The Proponent shall:
- (a) implement best management practice to minimise the off-site odour, fume and dust emissions of the project;
 - (b) operate a comprehensive air quality management system on site 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 approval;
 - (c) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events;
 - (d) minimise any visible off-site air pollution; and
 - (e) minimise the surface disturbance of the site generated by the project,
- to the satisfaction of the Director-General.

Air Quality Management Plan

27. The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Director-General. This plan must:
- (a) be prepared in consultation with EPA, and be submitted to the Director-General for approval by the end of October 2012;
 - (b) describe the measures that would be implemented to ensure:
 - best practice management is being employed;

- the air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events; and
 - compliance with the relevant conditions of this approval;
- (c) describe the project air quality management system;
- (d) include an air quality monitoring program that:
- uses a combination of real-time monitors and supplementary monitors, to evaluate the performance of the project;
 - adequately supports the proactive and reactive noise management system;
 - includes PM_{2.5} monitoring (although this obligation could be satisfied by the regional air quality monitoring network if sufficient justification is provided);
 - evaluates and reports on the effectiveness of the air quality management system; and
 - includes a protocol for determining exceedances of the relevant conditions of this approval; and
- (e) describe the management process and apply the necessary mitigation measures to minimise the effect of dust deposits on the performance of rainwater filtration for human consumption and electronic solar systems on private residential properties within a 4km radius.

Note: The existing Air Quality Monitoring Program will continue to apply until this management plan is approved.

METEOROLOGICAL MONITORING

28. During the life of the project, the Proponent shall ensure that there is a suitable meteorological station in the vicinity of the site that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline.

SURFACE AND GROUND WATER

Water Supplies

29. The Proponent shall not use any licensable water from the Wybong Creek Water Source for mining purposes.

Note: This restriction does not apply to water used outside the project disturbance area for revegetation purposes associated with implementation of the Offset Strategy, or to any licensable water within the project disturbance area that is collected as an incidental result of approved mining activities.

- 29A. The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of mining operations to match its available water supply, to the satisfaction of the Director-General.

Discharge Limits

30. The Proponent shall:
- (a) not discharge any dirty water from the site, except as may be expressly provided by an EPA Environment Protection Licence; and
 - (b) not discharge any saline water from the site.

Site Water Management Plan

31. The Proponent shall prepare and implement a Site Water Management Plan for the project to the satisfaction of the Director-General. This plan must:
- (a) be prepared in consultation with EPA and NOW by suitably qualified expert/s whose appointment/s have been approved by the Director-General;
 - (b) be submitted to the Director-General for approval prior to carrying out any development on site; and
 - (c) include:
 - a Site Water Balance;
 - an Erosion and Sediment Control Plan;
 - a Surface Water Monitoring Plan;
 - a Ground Water Monitoring Program; and
 - a Surface and Ground Water Response Plan.

Site Water Balance

32. The Site Water Balance must:
- (a) include details of:
 - sources and security of water supply;
 - water use on site;
 - water management on site;

- off-site water transfers;
 - reporting procedures; and
- (b) investigate and describe measures to minimise water use by the project.

32A. Deleted.

Erosion and Sediment Control

33. The Erosion and Sediment Control Plan must:
- (a) be consistent with the requirements of the Department of Housing's Managing Urban Stormwater: Soils and Construction manual;
 - (b) identify activities that could cause soil erosion and generate sediment;
 - (c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters;
 - (d) describe the location, function, and capacity of erosion and sediment control structures; and
 - (e) describe what measures would be implemented to maintain the structures over time.

Surface Water Monitoring

34. The Surface Water Management and Monitoring Plan must include:
- (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could potentially be affected by the project;
 - (b) surface water and stream health impact assessment criteria;
 - (c) a program to monitor surface water flows, quality and impacts on water users (upstream and downstream of the project in Anvil Creek, Sandy Creek, Big Flat Creek and Wybong Creek);
 - (d) a program to assess stream health conditions in Anvil Creek, Sandy Creek, Big Flat Creek and Wybong Creek;
 - (e) a program to monitor channel stability in Anvil Creek, Sandy Creek and Big Flat Creek; and
 - (f) reporting procedures for the results of the monitoring program.

Groundwater Monitoring

35. The Groundwater Monitoring Program must include:
- (a) detailed baseline data, based on sound statistical analysis, to benchmark the pre-mining natural variation in groundwater levels, yield and quality (including privately owned groundwater bores within the predicted drawdown impact zone identified in the EA);
 - (b) groundwater impact assessment criteria (including for monitoring bores and privately owned bores);
 - (c) a program for accurately delineating the boundary of the Big Flat Creek alluvial aquifer in any areas intersected by mining, including plans for isolation of the mining pit from the alluvium at least 6 months before mining within 150 metres of the alluvium;
 - (d) a program to monitor:
 - impacts on the groundwater supply of potentially affected landowners;
 - impacts on the Big Flat Creek and Wybong Creek alluvial aquifers;
 - impacts on groundwater dependent ecosystems and riparian vegetation;
 - the volume of ground water seeping into the open cut mine workings;
 - regional ground water levels and quality in the alluvial, coal seam, and overburden/interburden aquifers; and
 - the groundwater pressure response in the surrounding coal measures;
 - (e) procedures for the verification of the groundwater model; and
 - (f) reporting procedures for the results of the monitoring program and model verification.

Surface and Ground Water Response Plan

36. The Surface and Ground Water Response Plan must include:
- (a) a protocol for the investigation, notification and mitigation of any exceedances of the surface water, stream health and groundwater impact assessment criteria;
 - (b) measures to mitigate and/or compensate potentially affected landowners with privately owned groundwater bores within the predicted drawdown impact zone identified in the EA, including provision of alternative supply of water to the affected landowner that is equivalent to the loss attributed to the project;
 - (c) measures to mitigate and/or compensate potentially affected landowners for the loss of surface water flows in Sandy Creek, Big Flat Creek and Wybong Creek downstream of the project;
 - (d) measures to minimise, prevent or offset groundwater leakage from the Big Flat Creek alluvial aquifer;
 - (e) measures to mitigate any direct hydraulic connection between the backfilled open cuts and the Big Flat Creek alluvium if the potential for adverse impacts is detected;

- (f) a contingency plan for isolating the Big Flat Creek alluvium from Anvil Creek alluvium and mining areas in the event that it is required; and
- (g) the procedures that would be followed if any unforeseen impacts are detected during the project.

REHABILITATION AND LANDSCAPE MANAGEMENT

Rehabilitation

37. The Proponent shall progressively rehabilitate the site to the satisfaction of the Director-General and the DRE, in a manner that is generally consistent with the final landform in the EA (shown conceptually in Appendix 6). However, the Proponent must endeavour to incorporate at least 700 hectares of native grassland in the final rehabilitated landscape.

Offset Strategy

38. The Proponent shall implement the Offset Strategy and Corridor Strategy as outlined in Table 11, and as generally described in the EA (and shown conceptually in Appendix 6), to the satisfaction of the Director-General.

Table 11: Offset Strategy

Area	Minimum Size
Existing vegetated (treed) areas	1,540 ha
Treed areas to be established	1,150 ha
Grassland areas	330 ha
Total	3,020 ha

Notes:

- (a) The offset areas are in addition to, and outside, the rehabilitated areas of the project disturbance area.
- (b) The quantum of existing and revegetated treed areas may be varied within reason, subject to meeting the total minimum offset area.

39. The Proponent shall ensure that the offset strategy and/or rehabilitation strategy is focused on the re-establishment of:
- (a) significant and/or threatened plant communities, including:
 - Ironbark Woodland Complex;
 - Bulloak Woodland;
 - Paperbark Woodland;
 - Slaty Box Woodland;
 - Forest Red Gum Riparian Woodland;
 - Rough Barked Apple Woodland;
 - Swamp Oak Riparian Forest; and
 - Weeping Myall Woodland;
 - (b) significant and/or threatened plant species, including:
 - *Goodenia macbarronii*;
 - *Diuris tricolor*;
 - *Prasophyllum* sp. aff. *Petillum*;
 - *Oligochaetochilus* sp. aff. *Praetermissus*;
 - *Cymbidium canaliculatum*;
 - *Bothriochloa biloba*;
 - *Acacia pendula*;
 - *Prasophyllum* sp. *wybong*;
 - *Commersonia rosea*; and
 - *Pomaderris queenslandica*; and
 - (c) significant and/or threatened animal species, including molluscan fauna.

Long Term Security of Offset

40. By the end of April 2013, unless otherwise agreed by the Director-General, the Proponent shall make suitable arrangements to provide appropriate long term security for the offset areas to the satisfaction of the Director-General.

Translocation Plan for Orchids and Other Threatened Flora

40A. The Proponent shall prepare and implement a Translocation Plan for the identified orchids and other threatened flora species within the project disturbance area, to the satisfaction of the Director-General. This plan must:

- (a) be prepared in consultation with the Department and OEH, and be submitted to the Director-General for approval prior to the commencement of construction activities for the relocation of the Electricity Transmission Line;
- (b) identify and investigate the translocation potential (through transplanting, propagation or other methods) for threatened flora species, including:
 - orchid species, including:
 - *Diuris tricolor*;
 - *Cymbidium canaliculatum*;
 - *Prasophyllum* sp. *wybong*;
 - other flora species, including:
 - *Acacia pendula*;
 - *Bothriochloa biloba*;
 - *Commersonia rosea*;
 - *Pomaderris queenslandica*; and
- (c) describe the measures that would be implemented to:
 - maintain up-to-date records of the orchids and other species within the project disturbance area, based on additional survey where necessary;
 - translocate and manage the orchids and other species;
 - monitor and report on the success of the translocation; and
 - ensure suitable contingency measures are implemented if the monitoring suggests the translocation is not working as well as intended.

Note: The Translocation Plan may be prepared as part of the Rehabilitation and Offset Management Plan (see below).

Landscape Management Plan

41. The Proponent shall prepare and implement a detailed Landscape Management Plan for the project to the satisfaction of the DRE and Director-General. This plan must:

- (a) be prepared in consultation with OEH and NOW by suitably qualified expert/s whose appointment/s have been approved by the Director-General;
- (b) submitted to the Director-General for approval prior to starting mining operations on site; and
- (c) include a:
 - Rehabilitation and Offset Management Plan;
 - Final Void Management Plan; and
 - Mine Closure Plan.

Note: The Department accepts that the initial Landscape Management Plan may not include the detailed Final Void Management Plan and Mine Closure Plan. However, if this occurs, the Proponent will be required to seek approval from the Director-General for an alternative timetable for the completion and approval of the Final Void Management Plan and Mine Closure Plan.

Rehabilitation and Offset Management Plan

42. The Rehabilitation and Offset Management Plan must include:

- (a) the rehabilitation objectives for the site and offset areas;
- (b) a description of the short, medium, and long term measures that would be implemented to:
 - rehabilitate the site;
 - implement the Offset Strategy; and
 - manage the remnant vegetation and habitat on the site and in the offset areas;
- (c) detailed performance and completion criteria for the rehabilitation of the site and implementation of the Offsets Strategy;
- (d) a detailed description of how the performance of the rehabilitation of the mine and the offset areas would be monitored over time to achieve the stated objectives;
- (e) a detailed description of what measures would be implemented over the next 3 years to rehabilitate and manage the landscape of the site and offset areas including the procedures to be implemented for:
 - progressively rehabilitating areas disturbed by mining;
 - implementing revegetation and regeneration within the disturbance areas and offset areas, including establishment of canopy, sub-canopy (if relevant), understorey and ground strata;
 - reducing the visual impacts of the project;
 - protecting areas outside the disturbance areas;

- rehabilitating creeks and drainage lines on the site (including Anvil Creek and Clarks Gully), to ensure no net loss of stream length and aquatic habitat;
 - undertaking pre-clearance surveys;
 - managing impacts on fauna;
 - landscaping the site to minimise visual impacts;
 - conserving and reusing topsoil;
 - minimising the risk of *Phytophthora cinnamomi* spread, based on detailed soil investigations;
 - collecting and propagating seed for rehabilitation works;
 - salvaging and reusing material from the site for habitat enhancement;
 - salvaging, transplanting and/or propagating threatened flora and native grassland, based on additional survey and research;
 - controlling weeds and feral pests;
 - controlling access;
 - bushfire management; and
 - managing any potential conflicts between the rehabilitation of the mine and Aboriginal cultural heritage;
- (f) a description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and
- (g) details of who is responsible for monitoring, reviewing, and implementing the plan.

Notes:

- *The plan shall be prepared generally in accordance with the recommendations of the Panel's ecological assessment (available from the Department), unless otherwise authorised by the Director-General.*
- *Reference to "rehabilitation" in this approval includes all works associated with the rehabilitation and restoration of the site as described in the EA, and applies to all areas within the Mining Lease and Offset Strategy.*

Final Void Management

43. The Final Void Management Plan must:
- (a) justify the planned final location and future use of the final voids;
 - (b) incorporate design criteria and specifications for the final voids based on verified groundwater modelling predictions and a re-assessment of post-mining groundwater equilibration;
 - (c) assess the potential interactions between creeks on the site and the final voids; and
 - (d) describe what actions and measures would be implemented to:
 - minimise any potential adverse impacts associated with the final voids; and
 - manage and monitor the potential impacts of the final voids.

Mine Closure Plan

44. The Mine Closure Plan must:
- (a) define the objectives and criteria for mine closure;
 - (b) investigate options for the future use of the site, including the final voids;
 - (c) investigate ways to minimise the 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 project; and
 - (e) describe how the performance of these measures would be monitored over time.

Conservation and Biodiversity Bond

45. Within 3 months of the approval of the Landscape Management Plan, the Proponent shall lodge a conservation and biodiversity bond with the Department to ensure that the Offset Strategy is implemented in accordance with the performance and completion criteria of the Landscape Management Plan. The sum of the bond shall be determined by:
- (a) calculating the full cost of implementing the Offset Strategy and Conceptual Corridor Strategy; and
 - (b) employing a suitably qualified quantity surveyor to verify the calculated costs, to the satisfaction of the Director-General.

Notes:

- *If the Offset Strategy is completed to the satisfaction of the Director-General, the Director-General will release the conservation bond.*
- *If the Offset Strategy is not completed to the satisfaction of the Director-General, the Director-General will call in all or part of the conservation bond, and arrange for the satisfactory completion of the relevant works.*
- *If amendments to the Mining Act 1992 allow the Minister for Mineral Resources to require rehabilitation securities under a Mining Lease which apply to the implementation of rehabilitation works outside the*

boundary of a Mining Lease, the Proponent may transfer the conservation bond required under this approval to the Minister of Mineral Resources provided the Director-General and the *DRE* agree to the transfer.

ABORIGINAL CULTURAL HERITAGE

Aboriginal Cultural Heritage Management Plan

46. The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan to the satisfaction of the Director-General. This plan must:
- (a) be prepared in consultation with *OEH* and the Aboriginal communities;
 - (b) be submitted to the Director-General for approval prior to the disturbance of any Aboriginal object or site; and
 - (c) include a:
 - detailed salvage program and management plan for all Aboriginal sites within the project disturbance area;
 - detailed description of the measures that would be implemented to protect Aboriginal sites outside the project disturbance area, including the 16 Aboriginal rock shelter sites identified in the EA;
 - detailed plan for the management of Aboriginal cultural heritage values of high significance in the offset areas (see condition 38 above), including managing Site SC10 for use by the Aboriginal community for teaching and educational purposes, and maintaining reasonable access to Aboriginal sites;
 - detailed monitoring program for the 16 Aboriginal rock shelter sites identified in the EA;
 - description of the measures that would be implemented if any new Aboriginal objects or skeletal remains are discovered during the project; and
 - protocol for the ongoing consultation and involvement of the Aboriginal communities in the conservation and management of Aboriginal cultural heritage on the site.

Note: The 16 Aboriginal rock shelter sites include sites AC38, AC42, BFC12, CG01, CG08, CG09, CG10, WC05, WC25, WC26, WC27, WC33, WC43, WC45, WC46 and WC47, as shown on the figure in Appendix 7.

HERITAGE

Wybong Community Heritage

47. Prior to starting mining operations on site, the Proponent shall prepare a report documenting the history of the Wybong community to the satisfaction of the Director-General. This report must:
- (a) be prepared in consultation with the Wybong community and NSW Heritage Office; and
 - (b) include:
 - detailed historical research and oral history for all the land within the 40dBA noise contour (see the EA); and
 - archival recording, in accordance with the requirements and guidelines of the NSW Heritage Office, for all items of heritage value within the project disturbance area and blast affectation area (including 'Castle Hill').
48. The Proponent shall prepare and implement a detailed Conservation Management Strategy for all heritage items within the blast affectation area to the satisfaction of the Director-General. This strategy must:
- (a) be prepared in consultation with the relevant landowners and the NSW Heritage Office;
 - (b) be submitted to the Director-General for approval prior to starting mining operations on site; and
 - (c) include a:
 - program for baseline dilapidation surveys of the heritage items;
 - program to monitor the effects of blasting on the heritage items; and
 - description of the measures that would be implemented to protect relevant heritage items (particularly Castle Hill) from the effects of blasting; and
 - description of the measures that would be implemented to protect Anvil Rock and 'The Book' rock formations from the effects of blasting.

Note: For the purposes of these conditions the blast affectation area includes all properties predicted to exceed the 5mm/sec ground vibration criteria.

TRAFFIC AND TRANSPORT

Monitoring of Coal Transport

49. The Proponent shall:
- (a) keep records of the:
 - amount of coal transported from the site each year; and

- number of coal haulage train movements generated by the project (on a daily basis); and
- (b) include these records in the AEMR.

Traffic Management

50. The Proponent shall upgrade:
- (a) the Bengalla Link Road intersections with Wybong Road and Denman Road, to the satisfaction of the RMS and Council, in conjunction with the construction of the Bengalla Link Road extension and prior to carrying out any development on site apart from the defined early works;
 - (b) Wybong Road and its intersection with the mine access road to the satisfaction of Council, prior to carrying out any development on site apart from the defined early works;
 - (c) the Golden Highway/Wybong Road intersection to the satisfaction of the RMS, prior to carrying out any development on site apart from the defined early works, unless otherwise agreed by the Director-General;
 - (d) lighting and signposting of the relevant intersections to the satisfaction of the RMS/Council, in conjunction with the relevant intersection upgrades;
 - (e) all bus stops affected by the proposal to the satisfaction of Council, prior to carrying out any development on site apart from the defined early works; and
 - (f) the Wybong Road intersections with Wybong Post Office Road and Yarraman Road to the satisfaction of Council, by the end of April 2013, or as otherwise agreed by the Director-General.

With regard to the Wybong Road upgrade identified in (b) above, the Proponent shall:

- (i) reassess and rectify the identified defects in the road upgrade works to the satisfaction of Council, by the end of April 2013, unless otherwise agreed by the Director-General in consultation with Council;
- (ii) implement the additional recommendations identified in the 'Hyder Report', including improvements to curves, clear zones and intersection safety, and investigate and implement measures to improve safety at 'Bus Stop 2', to the satisfaction of Council by the end of April 2013, unless otherwise agreed by the Director-General in consultation with Council; and
- (iii) contribute to the maintenance of the upgraded road for the life of the mining operations in accordance with the terms of the planning agreement required in condition 12 of schedule 2.

If there are any disputes in relation to these upgrade and maintenance works, then either party may refer the matter to the Director-General for resolution.

Note: For the purposes of this condition:

- the Wybong Road upgrade refers to the section of Wybong Road from the mine access road to the intersection with Bengalla Link Road; and
- the 'Hyder Report' means the report titled *Mangoola Coal Project: Road Design, Safety and Traffic review of Wybong Road West*, prepared by Hyder Consulting, dated November 2011.

- 50A. The Proponent shall undertake the following in relation to the section of Wybong Road between the Golden Highway and the mine access road:
- (a) undertake a road condition survey, in consultation with Council and to the satisfaction of the Director-General, prior to carrying out any development on site;
 - (b) maintain the road to the satisfaction of Council, from the commencement of project-related works until the Bengalla Link Road extension is commissioned;
 - (c) undertake a second road condition survey, in consultation with Council and to the satisfaction of the Director-General, following the completion and commissioning of the Bengalla Link Road extension; and
 - (d) following approval of the second road condition survey, repair the road to at least the condition determined by the initial survey, to the satisfaction of Council.

The road condition surveys shall be undertaken by a suitably qualified expert/s whose appointment/s have been approved by the Director-General.

51. Prior to carrying out any development on site, the Proponent shall prepare (and subsequently implement) a construction traffic management plan for the project to the satisfaction of the RMS and Council; and following approval, implement the plan to the satisfaction of the RMS and Council. The plan shall include specific measures in relation to:
- speed limits, warning signage, barriers and repairs on Wybong Road, based on a detailed road safety audit;
 - restriction of project-related traffic to the nominated access routes, including an effective driver education and self-policing penalty system;
 - restriction of heavy vehicle access during school bus hours; and
 - consultation with the local community and relevant agencies regarding the project and traffic management measures.

- 51A. Prior to commencing any works requiring the use of the section of Mangoola Road included within Construction Route 1, the Proponent shall update the Construction Traffic Management Plan to the satisfaction of Council, to include specific measures for this section of road in relation to:
- warning signage, speed limits, barriers, and maintenance of the road surface condition; and
 - additional controls to manage pipeline construction underneath the road.
52. No project related traffic shall use Reedy Creek Road, Mangoola Road (apart from that section forming part of Construction Route 1 during construction of the project pipeline), Roxburgh Road or Castlerock Road to get to or from the site, except in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.

No project-related heavy vehicle traffic shall use Wybong Road west of the mine access road (to the intersection with the Golden Highway) to access the site, except in any emergency to avoid the loss of lives, property and/or prevent environmental harm.

Note: This condition does not apply to any employees that may reside on Reedy Creek Road, Mangoola Road, Roxburgh Road or Castlerock Road, or the infrequent use of the roads for consultation, environmental monitoring, and inspection and maintenance of nearby infrastructure.

Train Movements and Refuelling

- 52A. The Proponent shall:
- restrict train movements to/from site to a maximum of 20 train movements a day (ie. 10 trains in; 10 trains out);
 - use its reasonable endeavours to ensure that its rail spur is only accessed by locomotives that are approved to operate on the NSW rail network in accordance with noise limits L6.1 to L6.4 in RailCorp's EPL (No. 12208); and
 - only refuel trains on site that are directly associated with the coal transport operations of the project.

VISUAL IMPACT

Additional Visual Impact Mitigation

53. Within 12 months of this approval, the Proponent shall prepare a report that:
- identifies the residences that are likely to experience significant visual impacts during the construction and operation of the project; and
 - describes (in general terms) the additional mitigation measures that could be implemented to reduce the visibility of the mine from these residences, to the satisfaction of the Director-General.
54. Within 3 months of the Director-General approving this report, the Proponent shall advise all owners of residences identified in the report that they are entitled to additional mitigation measures to reduce the visibility of the mine from their properties.
55. Upon receiving a written request from an owner of a residence identified in this report, the Proponent shall implement additional visual impact mitigation measures (such as landscaping treatments or vegetation screens) in consultation with the landowner, and to the satisfaction of the Director-General.

These mitigation measures must be reasonable and feasible.

If within 3 months of receiving this request from the owner, the Proponent 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 Director-General for resolution.

Note: The additional visual impact mitigation measures must be aimed at reducing the visibility of the mine from significantly affected residences and do not necessarily require measures to reduce visibility of the mine from other locations on the affected properties. The additional visual impact mitigation measures do not necessarily have to include measures on the affected property itself (i.e. the additional measures may consist of measures outside the affected property boundary that provide an effective reduction in visual impacts).

- 55A. By July 2010 the Proponent shall plant a vegetation screen from the north of view point 3 to view point 4, as identified in Appendix 9. The Proponent shall maintain the vegetation screen for the life of the project.

Visual Amenity

56. The Proponent shall minimise the visual impacts of the project to the satisfaction of the Director-General.

Lighting Emissions

57. The Proponent shall:
- (a) take all practicable measures to mitigate off-site lighting impacts from the project; and
 - (b) ensure that all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*, to the satisfaction of the Director-General.

GREENHOUSE GAS

Energy Savings Action Plan

58. The Proponent shall prepare and implement an Energy Savings Action Plan for the project to the satisfaction of the Director-General. This plan must be prepared in accordance with the requirements and guidelines of *NOW*, and submitted to the Director-General for approval prior to starting mining operations on site.

Monitoring and Reporting

59. The Proponent shall:
- (a) monitor the greenhouse gas emissions generated by the project;
 - (b) investigate ways to reduce greenhouse gas emissions generated by the project; and
 - (c) report on greenhouse gas monitoring and abatement measures in the AEMR, to the satisfaction of the Director-General.

WASTE MINIMISATION

60. The Proponent shall:
- (a) monitor the amount of waste generated by the project;
 - (b) investigate ways to minimise waste generated by the project;
 - (c) implement reasonable and feasible measures to minimise waste generated by the project;
 - (d) ensure irrigation of treated wastewater is undertaken in accordance with *EPA's Environmental Guideline for the Utilisation of Treated Effluent*; and
 - (e) report on waste management and minimisation in the AEMR, to the satisfaction of the Director-General.
-

SCHEDULE 4 ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. Within 1 month of this approval, the Proponent shall notify the landowners of the land listed in the table in Appendix 5 in writing that they have the right to require the Proponent to acquire their land at any stage during the project.
2. If the results of monitoring required in schedule 3 identify that impacts generated by the project are greater than the impact assessment criteria in schedule 3, except where this is predicted in the EA, and except where a negotiated agreement has been entered into in relation to that impact, then the Proponent shall notify the Director-General and the affected landowners and/or existing or future tenants (including tenants of mine owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the project is complying with the criteria in schedule 3.
3. The Proponent shall develop a brochure to advise landowners and/or existing or future tenants (including tenants of mine owned properties) of the possible health and amenity impacts associated with exposure to particulate matter, to the satisfaction of the Director-General. The brochure shall be prepared in consultation with NSW Health, and be submitted to the Director-General within 6 months of the date of this approval.

The Proponent shall review relevant human health studies and update this brochure every 3 years, to the satisfaction of the Director-General.

The Proponent shall provide this brochure (and associated updates) to all landowners and/or existing or future tenants (including tenants of mine owned properties) of properties where:

- (a) the predictions in the EA identify that the dust emissions generated by the project are likely to be greater than the air quality land acquisition criteria in condition 25 of schedule 3; and
- (b) monitoring results identify that the mine is exceeding the air quality land acquisition criteria in condition 25 of schedule 3.

INDEPENDENT REVIEW

4. If a landowner considers the project to be exceeding the impact assessment criteria in schedule 3, except where this is predicted in the EA, then he/she may ask the Director-General in writing for an independent review of the impacts of the project on his/her land.

If the Director-General is satisfied that an independent review is warranted, the Proponent shall within 3 months of the Director-General advising that an independent review is warranted:

- (a) consult with the landowner to determine his/her concerns;
 - (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to determine whether the project is complying with the relevant impact assessment criteria in schedule 3, and identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and
 - (c) give the Director-General and landowner a copy of the independent review.
5. If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.
 6. If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent shall:
 - (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance; or
 - (c) secure a written agreement with the landowner to allow exceedances of the criteria in schedule 3,to the satisfaction of the Director-General.

If the additional monitoring referred to above subsequently determines that the project is complying with the relevant criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.

If the Proponent is unable to finalise an agreement with the landowner, then the Proponent or landowner may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 8).

If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 3, and the Proponent cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then the Proponent shall, upon receiving a written request from the landowner, acquire all or part of the landowner's land in accordance with the procedures in conditions 10-12 below.

7. If the independent review determines that the relevant criteria in schedule 3 are being exceeded, but that more than one mine is responsible for this non-compliance, then the Proponent shall, together with the relevant mine/s:
- (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the relevant criteria are complied with; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance; or
 - (c) secure a written agreement with the landowner and other relevant mines to allow exceedances of the criteria in schedule 3,
- to the satisfaction of the Director-General.

If the additional monitoring referred to above subsequently determines that the projects are complying with the relevant criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.

If the Proponent is unable to finalise an agreement with the landowner and/or other mine/s, then the Proponent or landowner may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 8).

If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 3, and the Proponent together with the relevant mine/s cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land on as equitable a basis as possible with the relevant mine/s, in accordance with the procedures in conditions 10-12 below.

8. If the landowner disputes the results of the independent review, either the Proponent or the landowner may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.

9. If, following the Independent Dispute Resolution Process, the Director-General decides that the Proponent shall acquire all or part of the landowner's land, then the Proponent shall acquire this land in accordance with the procedures in conditions 10-12 below.

LAND ACQUISITION

10. Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on:
- (a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the project the subject of the project application, 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 property 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 mitigation measures' in condition 8 of schedule 3;
 - (b) the reasonable costs associated with:
 - relocating within the Muswellbrook local government area, or to any other local government area determined by the Director-General;
 - obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and
 - (c) reasonable compensation for any disturbance caused by the land acquisition process.

However, if at the end of this period, the Proponent 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 Director-General for resolution.

Upon receiving such a request, the Director-General shall request the President of the NSW Division of the Australian Property Institute (API) to appoint a qualified independent valuer to:

- (a) consider submissions from both parties;
- (b) 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;
- (c) prepare a detailed report setting out the reasons for any determination; and
- (d) provide a copy of the report to both parties.

Within 14 days of receiving the independent valuer's report, the Proponent shall 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 Director-General 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 Director-General shall 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 and the detailed report of the party that disputes the independent valuer's determination.

Within 14 days of the Director-General's determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the Director-General's determination.

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

11. The Proponent shall pay all reasonable costs associated with the land acquisition process described in condition 10 above.
12. If the Proponent and landowner agree that only part of the land shall be acquired, then the Proponent shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.

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

ENVIRONMENTAL MANAGEMENT STRATEGY

1. The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must be submitted to the Director-General prior to carrying out any development on site, and:
 - (a) provide the strategic context for environmental management of the project;
 - (b) identify the statutory requirements that apply to the project;
 - (c) describe in general how the environmental performance of the project would be monitored and manage;
 - (d) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the project;
 - respond to any non-compliance;
 - manage cumulative impacts; and
 - respond to emergencies; and
 - (e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the project.

Adaptive Management

- 1A. The Proponent must assess and manage project-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 approval 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 Proponent 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 Director-General, to the satisfaction of the Director-General.

ENVIRONMENTAL MONITORING PROGRAM

2. The Proponent shall prepare and implement an Environmental Monitoring Program for the project to the satisfaction of the Director-General. This program must consolidate the various monitoring requirements in schedule 3 of this approval into a single document, and be submitted to the Director-General concurrently with the submission of the relevant monitoring programs/plans.

INCIDENT REPORTING

3. Within 7 days of detecting an exceedance of the limits/performance criteria in this approval or an incident causing (or threatening to cause) material harm to the environment, the Proponent shall report the exceedance/incident to the Department, and any other relevant agency. This report must:
 - (a) describe the date, time, and nature of the exceedance/incident;
 - (b) identify the cause (or likely cause) of the exceedance/incident;
 - (c) describe what action has been taken to date; and
 - (d) describe the proposed measures to address the exceedance/incident.

ANNUAL REPORTING

4. Within 12 months of this approval, and annually thereafter, the Proponent shall submit an AEMR to the Director-General and relevant agencies. This report must:
 - (a) identify the standards and performance measures that apply to the project;
 - (b) describe the works carried out in the last 12 months;
 - (c) describe the works that will be carried out in the next 12 months;
 - (d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
 - (e) include a summary of the monitoring results for the project during the past year;
 - (f) include an analysis of these monitoring results against the relevant:

- impact assessment criteria/limits;
 - monitoring results from previous years; and
 - predictions in the EA;
- (g) identify any trends in the monitoring results over the life of the project;
- (h) identify any non-compliance during the previous year; and
- (i) describe what actions were, or are being, taken to ensure compliance.

INDEPENDENT ENVIRONMENTAL AUDIT

5. Within 2 years of this approval, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
- (a) be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been endorsed by the Director-General;
 - (b) assess the environmental performance of the project, and its effects on the surrounding environment;
 - (c) assess whether the project is complying with the relevant standards, performance measures, and statutory requirements;
 - (d) review the adequacy of any strategy/plan/program required under this approval; and, if necessary,
 - (e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy/plan/program required under this approval.

Note: This audit team must include experts in the field of mine rehabilitation; and noise, blasting, air quality, and flora and fauna impact assessment.

6. Within 6 weeks of completing this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General with a response to any recommendations contained in the audit report.

Revision of Strategies, Plans and Programs

7. Within 3 months of the submission of an:
- (a) audit under condition 5 above;
 - (b) AEMR under condition 4 above;
 - (c) incident report under condition 3 above; and
 - (d) any modification to the conditions of this approval,
- the Proponent shall review, and if necessary revise, the strategies, plans, programs and reports required under this approval to the satisfaction of the Director-General.

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

COMMUNITY CONSULTATIVE COMMITTEE

8. Within 3 months of this approval, the Proponent shall establish a Community Consultative Committee for the project. The CCC shall:
- (a) be comprised of:
 - 2 representatives from the Proponent, including the person responsible for environmental management on site;
 - at least 1 representative from Council (if available); and
 - at least 4 representatives from the local community, whose appointment has been approved by the Director-General in consultation with the Council;
 - (b) be chaired by an independent chairperson, whose appointment has been approved by the Director-General;
 - (c) meet at least twice a year;
 - (d) review the Proponent's performance with respect to environmental management and community relations;
 - (e) undertake regular inspections of the mine's operations;
 - (f) review community concerns or complaints about the mine's operations, and the Proponent's complaint handling procedures; and
 - (g) provide advice to:
 - the Proponent on improved environmental management and community relations, including the provision of information to the community and the identification of community initiatives to which the Proponent could contribute;
 - the Department regarding the conditions of this approval; and
 - the general community on the performance of the mine with respect to environmental management and community relations; and

- (h) be operated generally in accordance with any guidelines the Department may publish on the operation of Community Consultative Committees for mining projects.

Note: The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval.

- 9. The Proponent shall:
 - (a) ensure that at least 2 of its representatives attend CCC meetings;
 - (b) provide the CCC with regular information on the environmental performance and management of the project;
 - (c) provide meeting facilities for the CCC;
 - (d) arrange site inspections for the CCC, if necessary;
 - (e) respond to any advice or recommendations the CCC may have in relation to the environmental management or community relations;
 - (f) take minutes of the CCC meetings, and put a copy of these minutes on its website within 1 month of the CCC meeting; and
 - (g) forward a copy of the minutes of each CCC meeting, including a response to any recommendations from the CCC, to the Director-General within 1 month of the CCC meeting.

ACCESS TO INFORMATION

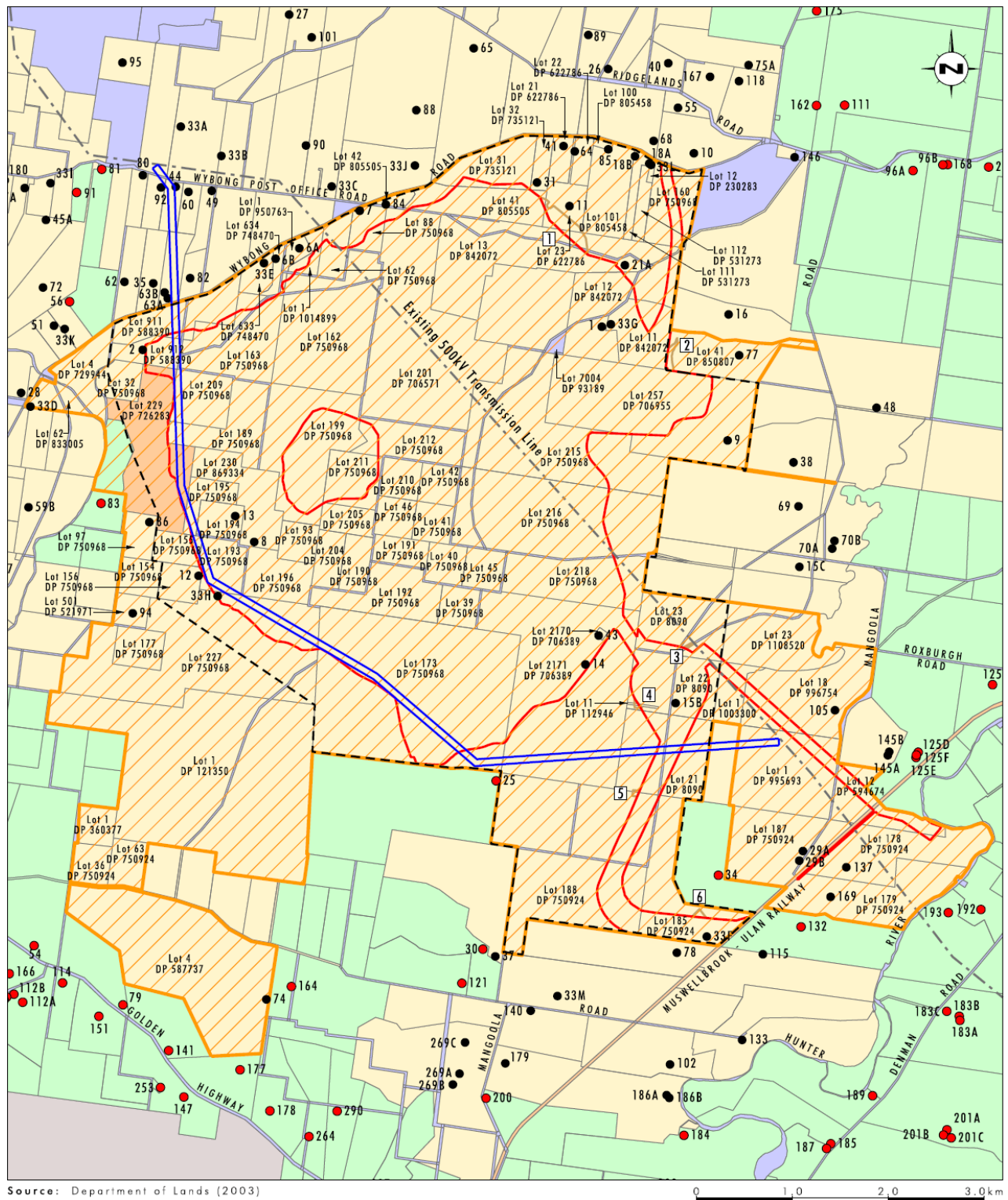
- 10. Within 3 months of the approval of any strategy/plan/program required under this approval (or any subsequent revision of these strategies/plans/programs), or the completion of the audits or AEMRs required under this approval, the Proponent shall:
 - (a) provide a copy of the relevant document/s to the relevant agencies and the CCC;
 - (b) put a copy of the relevant document/s on the Proponent's website.
- 11. During the project, the Proponent shall:
 - (a) make a summary of monitoring results required under this approval publicly available on its website; and
 - (b) update these results on a regular basis (at least every 3 months).

APPENDIX 1 SCHEDULE OF LAND

Lot	DP	Owner	Lot	DP	Owner
12	842072	Xstrata Mangoola Pty Limited	101	805458	Xstrata Mangoola Pty Limited
160	750968	Xstrata Mangoola Pty Limited	41	805505	Xstrata Mangoola Pty Limited
11	842072	Xstrata Mangoola Pty Limited	13	842072	Xstrata Mangoola Pty Limited
227	750968	Xstrata Mangoola Pty Limited	229	726283	The State of New South Wales
199	750968	Xstrata Mangoola Pty Limited	173	750968	Xstrata Mangoola Pty Limited
193	750968	Xstrata Mangoola Pty Limited	41	850807	Xstrata Mangoola Pty Limited
185	750924	Xstrata Mangoola Pty Limited	12	230283	Xstrata Mangoola Pty Limited
31	735121	Xstrata Mangoola Pty Limited	112	531273	Xstrata Mangoola Pty Limited
7004	93189	The State of New South Wales	111	531273	Xstrata Mangoola Pty Limited
2170	706389	Xstrata Mangoola Pty Limited	100	805458	Xstrata Mangoola Pty Limited
188	750924	Xstrata Mangoola Pty Limited	22	622786	Xstrata Mangoola Pty Limited
912	588390	Xstrata Mangoola Pty Limited	21	622786	Xstrata Mangoola Pty Limited
911	588390	Xstrata Mangoola Pty Limited	32	735121	Xstrata Mangoola Pty Limited
218	750968	Xstrata Mangoola Pty Limited	42	805505	Xstrata Mangoola Pty Limited
201	706571	Xstrata Mangoola Pty Limited	1	950763	Xstrata Mangoola Pty Limited
163	750968	Xstrata Mangoola Pty Limited	634	748470	Xstrata Mangoola Pty Limited
162	750968	Xstrata Mangoola Pty Limited	633	748470	Xstrata Mangoola Pty Limited
93	750968	Xstrata Mangoola Pty Limited	32	750968	Xstrata Mangoola Pty Limited
1	1014899	Xstrata Mangoola Pty Limited	156	750968	Xstrata Mangoola Pty Limited
62	750968	Xstrata Mangoola Pty Limited	4	729944	Xstrata Mangoola Pty Limited
46	750968	Xstrata Mangoola Pty Limited	62	833005	Xstrata Mangoola Pty Limited
45	750968	Xstrata Mangoola Pty Limited	47	750968	Xstrata Mangoola Pty Limited
42	750968	Xstrata Mangoola Pty Limited	177	750968	Xstrata Mangoola Pty Limited
41	750968	Xstrata Mangoola Pty Limited	1	121350	Xstrata Mangoola Pty Limited
40	750968	Xstrata Mangoola Pty Limited	1	1003300	Xstrata Mangoola Pty Limited
39	750968	Xstrata Mangoola Pty Limited	23	1108520	Xstrata Mangoola Pty Limited
216	750968	Xstrata Mangoola Pty Limited	18	996754	Xstrata Mangoola Pty Limited
215	750968	Xstrata Mangoola Pty Limited	1	995693	Xstrata Mangoola Pty Limited
212	750968	Xstrata Mangoola Pty Limited	12	594674	Xstrata Mangoola Pty Limited
211	750968	Xstrata Mangoola Pty Limited	178	750924	Xstrata Mangoola Pty Limited
210	750968	Xstrata Mangoola Pty Limited	179	750924	Xstrata Mangoola Pty Limited
209	750968	Xstrata Mangoola Pty Limited	1	360377	Xstrata Mangoola Pty Limited
205	750968	Xstrata Mangoola Pty Limited	36	750924	Xstrata Mangoola Pty Limited
204	750968	Xstrata Mangoola Pty Limited	63	750924	Xstrata Mangoola Pty Limited
196	750968	Xstrata Mangoola Pty Limited	4	587737	Xstrata Mangoola Pty Limited
192	750968	Xstrata Mangoola Pty Limited			
191	750968	Xstrata Mangoola Pty Limited			
190	750968	Xstrata Mangoola Pty Limited			
189	750968	Xstrata Mangoola Pty Limited			
88	750968	Xstrata Mangoola Pty Limited			
230	869334	Xstrata Mangoola Pty Limited			
257	706955	Xstrata Mangoola Pty Limited			
23	622786	Xstrata Mangoola Pty Limited			
155	750968	Xstrata Mangoola Pty Limited			
195	750968	Xstrata Mangoola Pty Limited			
194	750968	Xstrata Mangoola Pty Limited			
2171	706389	Xstrata Mangoola Pty Limited			
11	112946	Xstrata Mangoola Pty Limited			
23	8090	Xstrata Mangoola Pty Limited			
22	8090	Xstrata Mangoola Pty Limited			
21	8090	Xstrata Mangoola Pty Limited			

Other Lands

Crown Roads, Council Roads, the bed and banks of the Hunter River and the Muswellbrook – Ulan railway, identified in the area shown on Figure 1 – Project Application Boundary



Legend

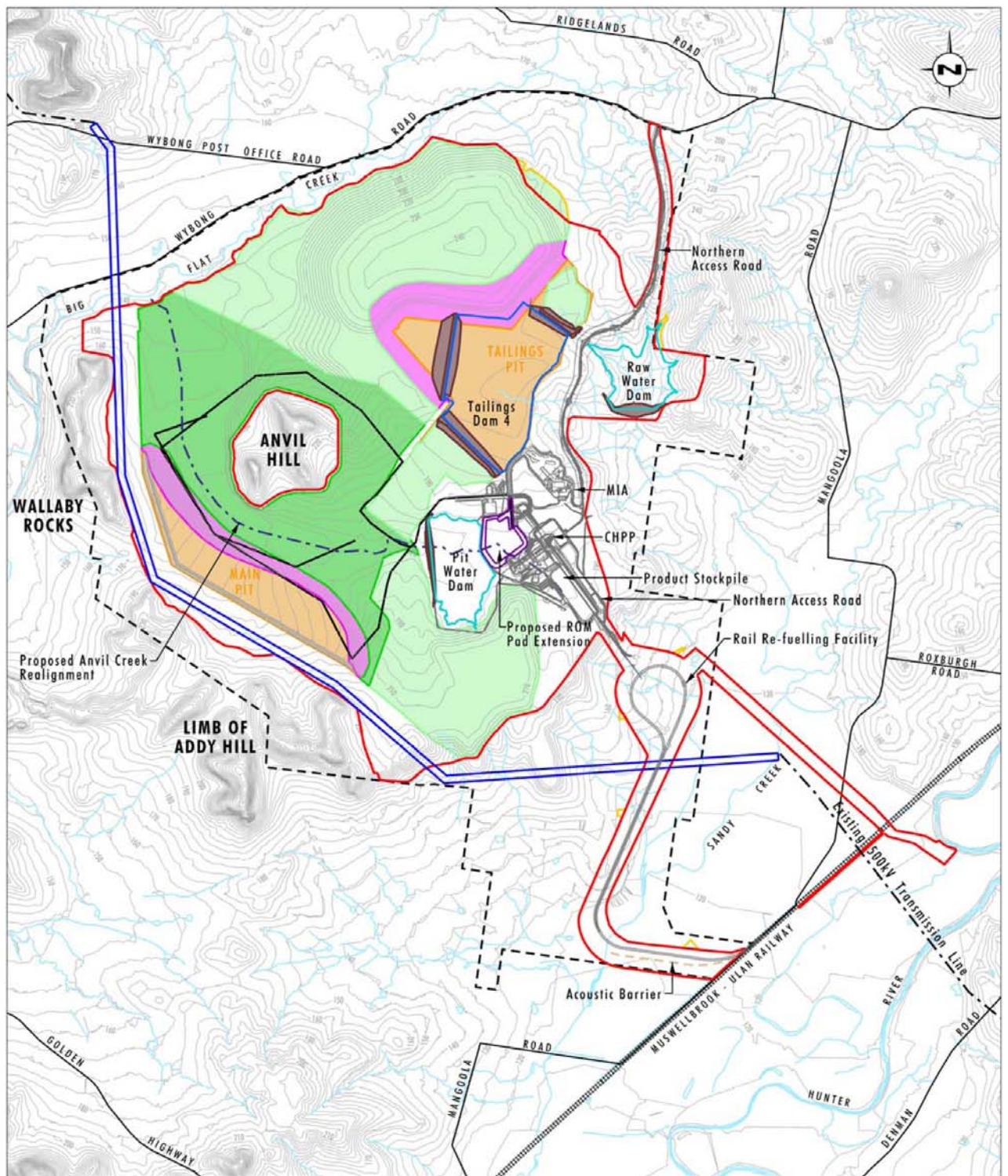
- Approved Project Disturbance Boundary
- Mining Lease 1626 Boundary
- Modified Project Disturbance Boundary
- Titles in s.75W Modification Area
- Proposed 500kV Transmission Line Easement
- Cadastral Boundary
- Private Residence
- Mine Owned Residence

- Land Ownership Status:
- Xstrata Mangoola Pty Limited
 - Crown Land
 - The State of NSW
 - Private
 - Commonwealth of Australia

FIGURE A2.1

s.75W Modification
Schedule of Lands

APPENDIX 2 PROJECT LAYOUT PLAN



Source: Xstrata Mangooka (2010)
Base Map: Dept. of Lands (2003)
Note: Contour Interval 5m

0 1.0 2.0 2.5 km

Legend

- | | |
|---|--|
| Approved Project Disturbance Boundary | Active Pit |
| Mining Lease 1626 Boundary | Rehabilitation - in progress |
| Modified Project Disturbance Boundary | Rehabilitation - completed |
| Proposed ROM Pad Extension | Haul Road |
| Proposed 500kV Transmission Line Easement | |
| Active Overburden Emplacement | |

FIGURE 11.8

Proposed Year 15
Mine Plan

APPENDIX 3 STATEMENT OF COMMITMENTS

[Note: References to sections, figures and appendices are references to the EA]

6.2 Community Enhancement Program

- 6.2.2 [Xstrata](#) will work with the local Council to facilitate local employment opportunities within the Muswellbrook Shire.

6.4 Noise

Noise Mitigation Measures

The following noise control measures will be employed throughout the life of the Project unless otherwise agreed by the Department:

- 6.4.3 The CPP, coal stockpiles and associated infrastructure will be located near the eastern boundary of the Proposed Disturbance Area to take advantage of natural topographic shielding which will reduce noise impacts on surrounding areas.
- 6.4.4 The CPP and crushers will have noise enclosures, and shielding will be installed for conveyors.
- 6.4.5 The rail loop will be located to use natural topography for shielding as much as possible. In addition, a 4 metre high noise barrier will be constructed on parts of the track to meet the noise modelling in the EA.
- 6.4.6 At night, trucks will be restricted to operate below the maximum elevation of the overburden emplacement areas.
- 6.4.9 If there are more than 20 privately-owned properties in the acquisition zone that have not entered into a negotiated agreement, [Xstrata](#) will either:
- (a) carry out no night time mining operations; or
 - (b) prepare and implement a noise management plan, in consultation with the [EPA](#), and to the satisfaction of the Director-General to reduce the noise impact of mining operations on the properties in the acquisition zone.

Notes:

1. This plan may include measures to reduce the intensity of mining operations, or restrict night time mining operations.
2. In this commitment, negotiated agreement means a written agreement between [Xstrata](#) and the landowner in which the landowner agrees not to be counted as a number in the acquisition zone.

6.4.10 [Xstrata Mangoola](#) confirms that those residences identified as having rights for noise mitigation and management in accordance with the original Project Approval No 06-0014, will still have those rights available to them, irrespective of whether the modification (Mod 4) results in their property no longer being predicted to receive the level of noise impacts above the relevant trigger level specified in the current Project Approval.

6.5 Blasting and Vibration

Blast Controls

- 6.5.6 [Xstrata](#) will design and undertake blasts to ensure the relevant vibration and blast overpressure criteria are met at the 500 kV transmission line.
- 6.5.7 [Xstrata](#) will refine and manage its blasting practices or undertake ameliorative measures so as not to significantly increase the risk of instability or affect the structural integrity of the rock shelter sites that are considered to be of significant Aboriginal cultural value in the Wallaby Rocks, Western Rocks and Limb of Addy Hill plateaus. This will include an ongoing monitoring program and review of blast design parameters.
- 6.5.8 Techniques to minimise blast impacts will be employed as necessary to ensure compliance with relevant criteria. This may include blast initiation using electronic detonation techniques, limiting blast MIC, consideration of wind speed and direction prior to blasting, use of adequate stemming, implementing a delay detonation system, and careful drilling and hole loading to ensure that the required blast design is implemented.

- 6.5.9 The Mine Manager or delegate will undertake a pre-blasting review of weather conditions to identify any conditions which may significantly increase blasting impact or dust impacts. When weather conditions are suitable or if safety requirements dictate at other times, the Mine Manager or delegate will issue a blast clearance prior to each blast proceeding.
- 6.5.10 Wybong Road will be temporarily closed during blast events within 500 metres of the road.
- 6.5.12 All relevant personnel will be trained on environmental obligations in relation to blasting controls.
- 6.5.13 The date, location of blast holes and quantity of explosive detonated each day will be documented.
- 6.5.14 Monitoring will be undertaken at locations representative of surrounding nearest private residences and other sensitive locations to verify compliance with relevant vibration and blast overpressure criteria, and identify appropriate further blast refinement or management.
- 6.5.15 Blast management procedures will be periodically reviewed to evaluate performance and identify corrective action, if required.
- 6.5.16 Blast monitoring results will be reported in the AEMR.

6.6 Air Quality

Air Quality Controls

- 6.6.2 Water sprays will be used at coal handling transfer points and on stockpile areas that are capable of generating dust.
- 6.6.3 All active roads will be clearly defined and the development of minor roads will be limited. Minor roads used regularly for access will be constructed so as to minimise dust generation (for example, by using well-compacted select material) and will be watered as required.
- 6.6.4 Speed limits will apply and be enforced on all roads on the mine site.
- 6.6.5 Water carts will be used on active haul roads and unsealed working areas. Surface moisture levels on all haul roads will be maintained at suitably elevated levels and/or chemical treatments will be applied to achieve 90% dust suppression.
- 6.6.6 Only the minimum area necessary for mining operations will be disturbed at any time.
- 6.6.7 Reshaping and rehabilitation of mining and overburden emplacement areas, and obsolete roads, will be undertaken as soon as practicable.
- 6.6.8 Drills will be fitted with dust suppressant measures.
- 6.6.9 Blasting design and operation will be managed to achieve optimum material breakage and movement to facilitate efficient mining while minimising the explosives used to achieve this outcome. This includes consideration of material and explosives characteristics, excavating equipment specifications, hole spacing and stemming material specification, accurate placement and drilling of holes, accurate explosives loading and well-managed stemming of blast holes. These measures will assist with minimising dust generation in the blasting process.
- 6.6.10 Cover crops will be established on any topsoil and subsoil stockpiles that are not planned to be used in less than six months.
- 6.6.11 Meteorological conditions will be monitored and weather data will be considered in the timing of blasts to assist with minimising the impacts of blast generated dust.
- 6.6.12 Dust control measures to be employed during construction will include use of water carts, defining of trafficked areas, imposition of vehicle speed limits and constraints on work under extreme unfavourable weather conditions.
- 6.6.13 A spontaneous combustion management strategy will be developed for the Project and will include coal stockpile and reject emplacement management measures, monitoring potential causes of spontaneous combustion events, and actions that can be implemented in the event of spontaneous combustion occurring.
- 6.6.14 Mine personnel will be provided with training in dust controls during induction for mine operations.

- 6.6.15 [Xstrata](#) will install first flush systems on residential rain water tanks, at the request of landowners located within 4 kilometres of the Project Disturbance boundary.

6.7 Water Management

- 6.7.1 Conceptual surface water controls have been designed to ensure that clean runoff is separated from runoff within disturbed mining and infrastructure areas. Conceptual sediment and erosion controls have been designed to ensure any runoff from disturbed areas is appropriately treated.
- 6.7.2 The drainage lines to be constructed as part of the final landform generally along the alignment of Anvil Creek as it existed prior to approval will be designed and constructed to provide a stable vegetated channel with a natural appearance that blends in with any adjoining riparian areas. Native trees and shrubs will be planted along the drainage alignment to enhance the long term stability of the drainage system and to provide suitable habitat for native fauna.
- 6.7.3 A comprehensive water quality monitoring program will continue throughout the life of the Project to monitor the surrounding surface water quality.

6.7.3a [Xstrata Mangoola](#) will submit to the NSW Office of Water, plans for isolation of the mining excavation from the Big Flat Creek at least 6 months prior to operations extending to within 150 metres of Big Flat Creek.

Groundwater

- 6.7.4 The existing groundwater monitoring bore locations will be maintained and a number of additional bores will be constructed at new locations beyond the mine pit areas, and in spoils following reshaping. Locations for these piezometers will be subject to consultation with [NOW](#). These bores will be monitored every two months for a range of parameters including water table level, pH, and EC and further analyses every six months for total dissolved solids (TDS), major ions, and heavy metals. Daily monitoring of water levels by automatic data loggers at existing piezometers and in selected new piezometers will continue. Analyses of this data will include comparison against model predictions, establishment of triggers for remedial action, expert review as required, and reporting to regulatory agencies at appropriate intervals.
- 6.7.5 As discussed in **Section 5.3.2.3**, it is possible (but unlikely) that two existing groundwater wells not owned by [Xstrata](#) may be affected by the Project. If the data obtained from the groundwater monitoring program indicates that the Project is having an adverse affect on these groundwater bores (that is, reduced groundwater yield from existing wells), then an alternative water supply will be provided by [Xstrata](#).
- 6.7.6 If monitoring indicates it is required, a barrier cut off wall within the alluvium associated with Big Flat Creek will be constructed to limit groundwater seepage into the mine.
- 6.7.7 Final voids have been designed to intercept leachate from overburden emplacement areas and minimise discharge of saline groundwater. Final void design will be reviewed at least three years prior to anticipated mine closure.
- 6.7.8 Analyses of the monitoring data will include comparison against model predictions, establishment of triggers for remedial action, expert review as required, and reporting to regulatory agencies at appropriate intervals. The monitoring results and the analyses will be reported in the AEMR.

6.7.9 [Xstrata Mangoola](#) will install piezometers in accordance with the [Xstrata Mangoola Groundwater Monitoring Program](#) by the end of 2011. Monitoring of piezometers will become part of the site's monitoring schedule for the ongoing collection of data and reported in accordance with current Mangoola Coal Mine Project Approval. In addition, based on further groundwater advice, additional piezometers will be installed.

6.8 Ecological Management and Site Rehabilitation

- 6.8.2 [Xstrata](#) is committed to long term protection of the Proposed Offset Areas and will finalise the appropriate tenure / conservation mechanism to achieve this, in consultation with the Department, [OEH](#) and [DRE](#).
- 6.8.3 [Xstrata](#) will seek to acquire all proposed components of the Proposed Offset Areas within one year of the date of project approval. If one or more proposed components of the Proposed Offset Areas have not been acquired within this time frame, [Xstrata](#) will consult with [OEH](#) and the Department to identify alternatives.

- 6.8.4 The land to be included in the conceptual corridors will include one external corridor to the north and one external corridor to the west, with the final location to be determined in consultation with [OEH](#) and the Department.
- 6.8.5 [Xstrata](#) will take all reasonable steps to acquire all proposed component(s) of the conceptual corridors within one year of the date of granting of project approval. If proposed component(s) of the conceptual corridors have not been acquired within this time frame, [Xstrata](#) will consult with [OEH](#) and the Department to identify alternatives.
- 6.8.6 Where tree hollows are lost by felling hollow-bearing trees (including stags), hollow fallen timber will be replaced by nest boxes set in appropriate locations at appropriate heights for the target fauna species. This will be managed in accordance with procedures in Mangoola Coal's ROMP.
- 6.8.7 The ongoing health of *Diuris tricolor* will be monitored in the Habitat Enhancement Area adjacent to Modification Area 1, and at least 2 reference populations elsewhere in the Habitat Enhancement Area for at least five years. This will be included in the revised Mangoola Coal ROMP with baseline monitoring established prior to mining in the modifications areas and annual monitoring for at least 5 years following mining in the modifications areas.
- 6.8.8 If there is significant and sustained decline in vigour of the Pine Donkey Orchids immediately adjacent to the open pit in Modification Area 1 then Xstrata Mangoola, over a three (3) year period, will engage a suitably qualified ecologist to recommend actions in relation to achieving the long-term survival of this population. This will be included in the revised ROMP.
- 6.8.9 Prior to any vegetation clearing in any of the modifications areas, a pre-clearance survey for *Acacia pendula* plants will be done. In the event that any plants are found they are to be marked and managed in accordance with Mangoola Coal's ROMP.
- 6.8.10 Translocation of *Diuris tricolor* from the approved disturbance area into suitable known habitats within the Biodiversity Offset Areas will continue to occur, as per the Project Approval for the Mangoola Coal Mine, and defined further in the ROMP. This will be extended to include any records of this species identified (during seasonal surveys) in the proposed modification areas.

6.9 Aboriginal Cultural Management

Site Management in Proposed Disturbance Area

- 6.9.1 Surface collection and grader scrapes will be undertaken for sites identified in the EA, prior to works commencing in these areas. Manual excavation will be undertaken in areas where the grader scrapes reveal features such as hearths, heat treatment pits, knapping floors or significant artefact concentrations.
- 6.9.2 Site AC13 will be subject to a detailed geomorphic investigation, a sub-surface test pitting program, large area manual excavation and grader scrapes.
- 6.9.3 Site SC10 will be managed for use by the Aboriginal and wider communities for teaching and educational purposes.

Conservation Management

- 6.9.4 The Proposed Offset Areas shown on **Figure 5.8** provide for conservation of archaeological terrain units evaluated as having equal or greater overall significance than in the Proposed Disturbance Area. [Xstrata](#) is committed to conserving all 98 identified sites and the landscapes in which they occur, within the Proposed Offset Areas. The Proposed Offset Areas will conserve all the rockshelter sites within Wallaby Rocks, Limb of Addy Hill, Western Rocks and Anvil Hill. Anvil Hill rockshelter sites (four sites), however, may be affected by the indirect impacts of blasting. This impact will be mitigated and management strategies for the rockshelters on Anvil Hill are discussed in **Appendix 13**.
- 6.9.6 The Proposed Offset Areas shown on **Figure 5.8** of the Anvil Hill Project EA provide for conservation of archaeological terrain units evaluated as having equal or greater overall significance than in the Proposed Disturbance Area. Xstrata Mangoola is committed to conserving all 98 identified sites and the landscapes in which they occur, within the Proposed Offset Areas. The Proposed Offset Areas will conserve all the rockshelter sites within Wallaby Rocks, Limb of Addy Hill, Western Rocks and Anvil Hill. Anvil Hill rockshelter sites (four sites), however, may be affected by the indirect impacts of blasting. This impact will be mitigated and management strategies for the rockshelters on Anvil Hill are discussed in **Appendix 13** of the Project Anvil Hill EA.

- 6.9.7 Xstrata Mangoola will continue to operate in accordance with the approved Mangoola Coal Aboriginal Cultural Heritage Management Plan (ACHMP) for the ongoing management of the Aboriginal heritage items within the approved project disturbance boundary. The ACHMP will continue to be implemented in consultation with the registered local Aboriginal stakeholders and will be revised within the next 12 months. The revision will include:
- additional information on all newly identified sites on land owned or managed by Xstrata Mangoola, including sites identified within the areas affected by the modifications;
 - a requirement to ensure that if Aboriginal objects are salvaged or uncovered due to development activities, any custodial arrangements will comply with the provision of Section 85 of the NPW Act and that every opportunity will be afforded to Registered Aboriginal Parties to provide input into decisions regarding short and long-term and/or final custodial arrangements for salvaged artefacts;
 - amendments to the NPW Act; and
 - details of further consultation with the Aboriginal community.
- 6.9.8 In the event that surface disturbance identifies a new Aboriginal site, the site will be managed in accordance with the procedures in the existing ACHMP for previously unrecorded sites. This procedure will be updated during the revision of the ACHMP, consistent with the requirements of OEH.
- 6.9.9 In the event that human remains are located following any surface disturbance, these will be managed in accordance with relevant procedures in the Mangoola Coal's ACHMP.
- 6.9.10 All reasonable efforts will be made to avoid impacts to Aboriginal cultural heritage at all stages of the development works. Where impacts are unavoidable possible management options for unavoidable impacts and detailed management recommendations and methodologies have been developed in consultation with the Registered Aboriginal Parties. The requirement for submission of Aboriginal Site Impact Recording (ASIR) cards following salvage will also be incorporated into these documents.
- 6.9.11 The Aboriginal Cultural Education Program developed for the Mangoola Coal Mine will continue to be implemented as part of the induction process for all employees and contractors.
- 6.9.12 An additional suitable culturally appropriate offset will be determined following additional consultation with the relevant Aboriginal stakeholders, in consultation with OEH and to the satisfaction of the Department.
- 6.9.13 Xstrata Mangoola will continue to consult with and involve all relevant registered local Aboriginal representatives for the project, in the ongoing management of the Aboriginal cultural heritage values. Evidence of this consultation will be collated and provided to the consent authority upon request.

6.10 Heritage

- 6.10.2 Archival recording will be undertaken for all heritage items identified within the Proposed Disturbance Area, prior to disturbance of such sites, to the standards of local heritage significance as specified by the guidelines of the NSW Heritage Office.
- 6.10.3 The surface collection and salvage of Ham House 1 and Ham House 2 and associated dairies, creamery and structures will be undertaken.
- 6.10.4 Xstrata will complete a detailed archival recording of the Castle Hill homestead to the standard of local heritage significance.
- 6.10.5 Potential further sites of local heritage value located within the area at which the relevant vibration criteria are predicted to be exceeded will be inspected, subject to landowner permission for access, and appropriately recorded prior to blasting. This will include assessing the structural status and identifying appropriate ameliorative measures, where relevant.
- 6.10.6 In the unlikely event that significant historical archaeological remains not identified as part of this study are discovered at the site, all works in the immediate area will cease and the Heritage Branch, Department of Planning and Infrastructure will be notified, in accordance with Section 146 of the *Heritage Act 1977* (NSW).
- 6.10.7 The location of site/items 20 and 21 will be included in a revision of the Heritage Management Plan.

6.11 Traffic and Transport

- 6.11.2 Wybong Road will be upgraded in association with Council, from the intersection with Bengalla Link Road to the proposed mine access road. This includes an upgrade to a sealed carriageway minimum

6.5 metres wide, road marked centreline to relevant standards, enhancement of safety and advisory signage, and upgrade of sections to ensure safe operation of school bus zones and stops. All works will be undertaken in consultation with Council and to the standards recommended in the detailed traffic assessment in **Appendix 16**.

- 6.11.3 The intersection of Wybong Road and the mine access road will be a Type B rural layout with a left turn auxiliary lane from Wybong Road into the proposed access road.

6.12 Greenhouse Gas

- 6.12.1 **Xstrata** will implement the following approaches to improving energy efficiency and reducing greenhouse emissions from the Project:

- use of minimum 5% bio-diesel or similar in the mining fleet, where environmental benefit is demonstrated;
- implementation of an energy management system within 2 years of the commencement of mining;
- conduct of an energy efficiency audit each three years after the commencement of mining; and
- installation of gas boosted solar hot water system.

Xstrata will continue to assess and implement energy and greenhouse management initiatives during the Project design, operation and decommissioning.

- 6.12.2 In addition to these initiatives, **Xstrata** will review various emission trading schemes and abatement initiatives available and assess the suitability of these for the Project (for example, the NSW Greenhouse Gas Abatement Scheme). The objective of these measures is to seek further opportunities to reduce or offset GHG emissions from the Project.

6.12.3 **Xstrata Mangoola** will continue to monitor and seek to improve its energy and greenhouse gas performance against performance targets.

6.12.4 **Xstrata Mangoola** will report its greenhouse gas and energy performance via legislative reporting requirements.

6.13 Visual Controls

Vegetative Screenings

- 6.13.1 Where access allows, vegetative screens will be planted along the lower sections of Mangoola Road from Roxburgh Road to the new rail loop intersection and along the ridge extending west from Limb of Addy Hill.

- 6.13.2 Final revegetation of disturbed areas will consider the reduction of visual impacts.

Infrastructure

- 6.13.4 The link road from the CPP to the Tailings Dam will be relocated to avoid the knoll 500 metres east of the product stockpile. This will ensure existing vegetation on the knoll shields views of the CPP and stockpile from VP 2.

- 6.13.5 The colour of building roofs and walls will be selected to differentiate elements and reduce visual mass.

- 6.13.6 The spur on the north-east edge of Anvil Hill at RL 220 will be recreated as part of the overburden emplacement areas to assist screening of the CPP from Years 10 to 20 when viewed from the north around VP 10.

- 6.13.7 The north, east and south sides of the workshop and CPP will be clad to meet the noise modelling in the EA.

- 6.13.8 All floodlights in the open cut area will be shielded to the maximum extent practicable.

- 6.13.9 Workshop doors will be orientated south or south-west, where possible, to reduce light spill.

- 6.13.10 Where safe to do so, trucks on access roads will make use of portable visual edge markers to increase drivers' visibility of road edges when driving with dipped headlamps.

Operational Measures

- 6.13.11 At night, work will be restricted to lower levels on the overburden emplacement areas to reduce noise impacts which will also reduce potential direct lighting effects from random elements such as truck headlights and flashing beacons.

**APPENDIX 4
GENERAL TERMS FOR THE PLANNING AGREEMENT**

Funding Area	Project	Proponent Contribution²	Funding Time Frame	Contribution Origin
Roads	Wybong Road maintenance ¹ (as required under condition 50 of schedule 3)	\$55,000 a year during mining operations ³ , following upgrade of Wybong Road as required under condition 50 of schedule 3	Annually ⁴	MOD 4
	General road maintenance	\$220,000 a year during mining operations ³	Annually ⁴	MOD 4
Local Environmental Management	Wybong Uplands Land Management Strategy	\$500,000	\$100,000 x 5 years, from commencement of construction.	Original project approval
	Council environmental management and monitoring	\$20,000 a year during mining operations ³	Annually ⁴	MOD 4
Local Employment	Education and Training Strategy	\$600,000	3 – 6 annual contributions to be paid from commencement of construction.	Original project approval
	Local Apprenticeships	Proponent to use its best endeavours to engage 6 apprentices a year sourced from residents within the Muswellbrook Shire and Aberdeen	Annually ⁴	MOD 4
Community Projects	Recreation Assets Renewal Fund	\$1,200,000	Contributions to start on commencement of production, with flexible instalments. and interest on the capital outstanding to be contributed annually.	Original project approval
Community Infrastructure	Denman recreation area enhancements	\$2,200,000	3-4 annual contributions to be paid from commencement of production, with a weighting towards the latter contributions in accordance with Council's schedule of works.	Original project approval
Additional environmental and community projects	Miscellaneous	\$235,000 a year during mining operations ³	Annually ⁴	MOD 4

1. Refers to the section of Wybong Road from the mine access road to the intersection with the Bengalla Link Road.
2. Subject to detailed timing, CPI indexation and termination as detailed in the Proponent's Letter of Offer dated 30 March 2012 (the Letter of Offer)
3. Including 12 months after the end of mining operations, as detailed in the Letter of Offer
4. From the date of approval of MOD 4, as detailed in the Letter of Offer

**APPENDIX 5
LANDOWNERS WITH ACQUISITION RIGHTS**

Residence ID*	Owner	Lot	DP	Significant Noise Impact	Significant Air Impact	Significant Blast Impact - Vibration	Significant Blast Impact - Overpressure
Residences							
30	Baywalis Management Pty Ltd	18	750969	Yes	-	Yes	-
56	Buddin KW & Bezzina S	23	240086	Yes	Yes	Yes	Yes
34	Cole G R	186	750924	Yes	-	-	-
121	Fairweather JA	2	593485	Yes	-	-	-
132	Horden RJ & AM	180	750924	Yes	-	-	-
81	Phelps JR & CM	12	240086	Yes	-	-	-
83	Ray MD & JT	9	750968	-	Yes	Yes	Yes
91	Shorter GM & O'Hara PJ	10	240086	Yes	-	-	-
25	Withers KL, LA, RIC & PJ RAY	168	750968	Yes	-	Yes	Yes
Additional Properties >25% Affected							
-	Googe FN & WL	1/1	75029/ 414239	Yes	-	-	-
-	Fairweather CR, ALJ, JMA & WS	71	9011088	Yes	-	-	-
66	LeBreton	122	585122	Yes	-	-	-
162	Thiecke, AH & JA	3	556410	Yes	-	-	-
164	Valantine, MG	88	818690	Yes	-	-	-

* As identified in the Environmental Assessment



Source: Dept. of Lands (2003)

Legend

- Approved Project Disturbance Boundary
- Mining Lease 1626 Boundary
- Modified Project Disturbance Boundary
- Proposed 500kV Transmission Line Easement
- Approved Worst Case 35dBA
- Proposed Worst Case 35dBA
- Approved Worst Case 40dBA
- Proposed Worst Case 40dBA

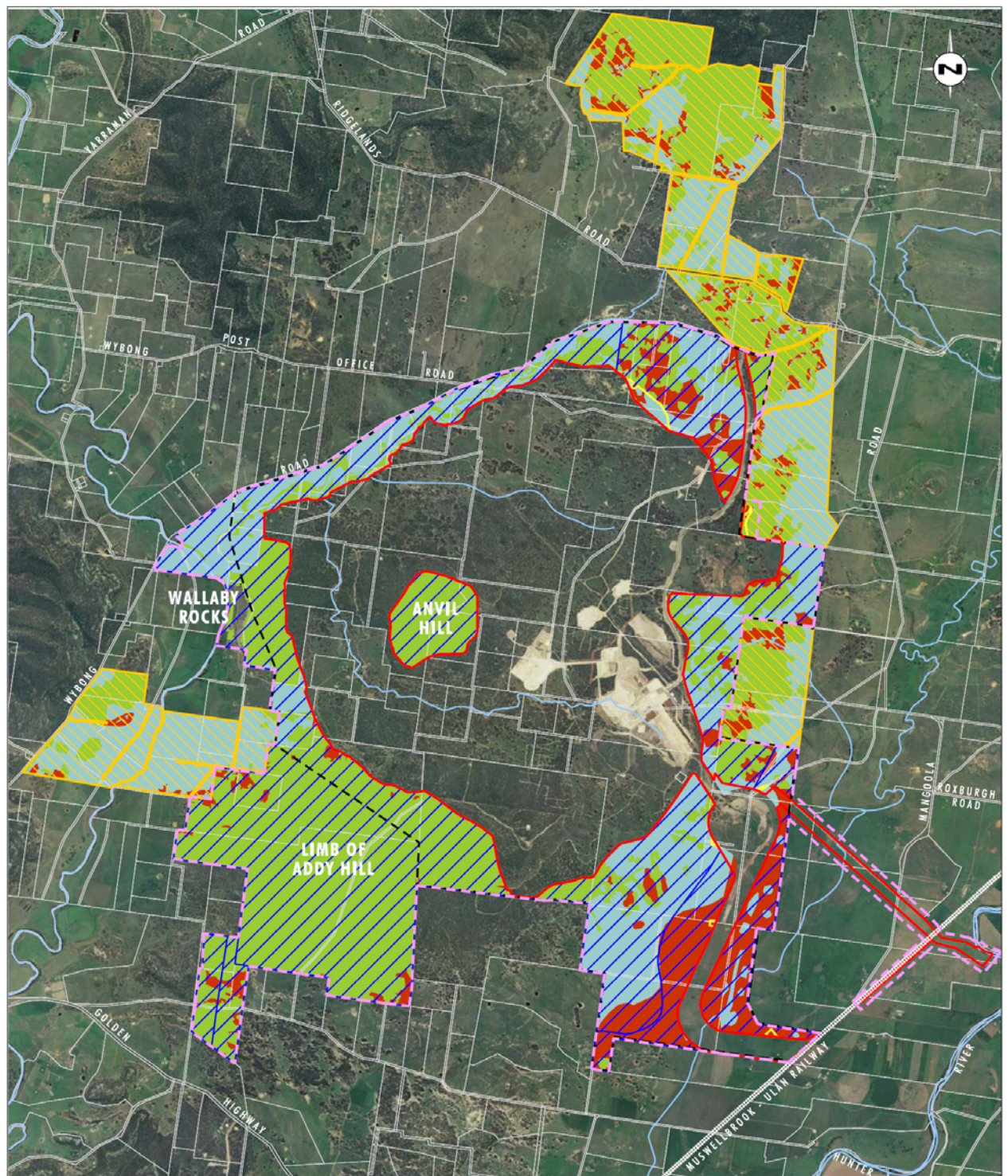
- Cadastral Boundary
- Private Residence
- Mine Owned Residence
- Commonwealth Residence
- Private Property with > 25% Land Affected by 40dBA

- Land Ownership Status:
- Xstrata Mangoola Pty Limited
 - Crown Land
 - The State of NSW
 - Private
 - Commonwealth of Australia
 - Other Mine Owned
 - Unknown

DRAFT FIGURE 1

Worst Case Noise Contours - Comparison Between Approved and Proposed Projects

APPENDIX 6 CONCEPTUAL OFFSET STRATEGY AND REHABILITATION PLANS



Source: Dept. of Lands (2003), Xstrata Mangoola (2010)

Note: Proposed Revegetation/Regeneration Areas are conceptual and subject to the outcomes of further ecological and archaeological surveys.

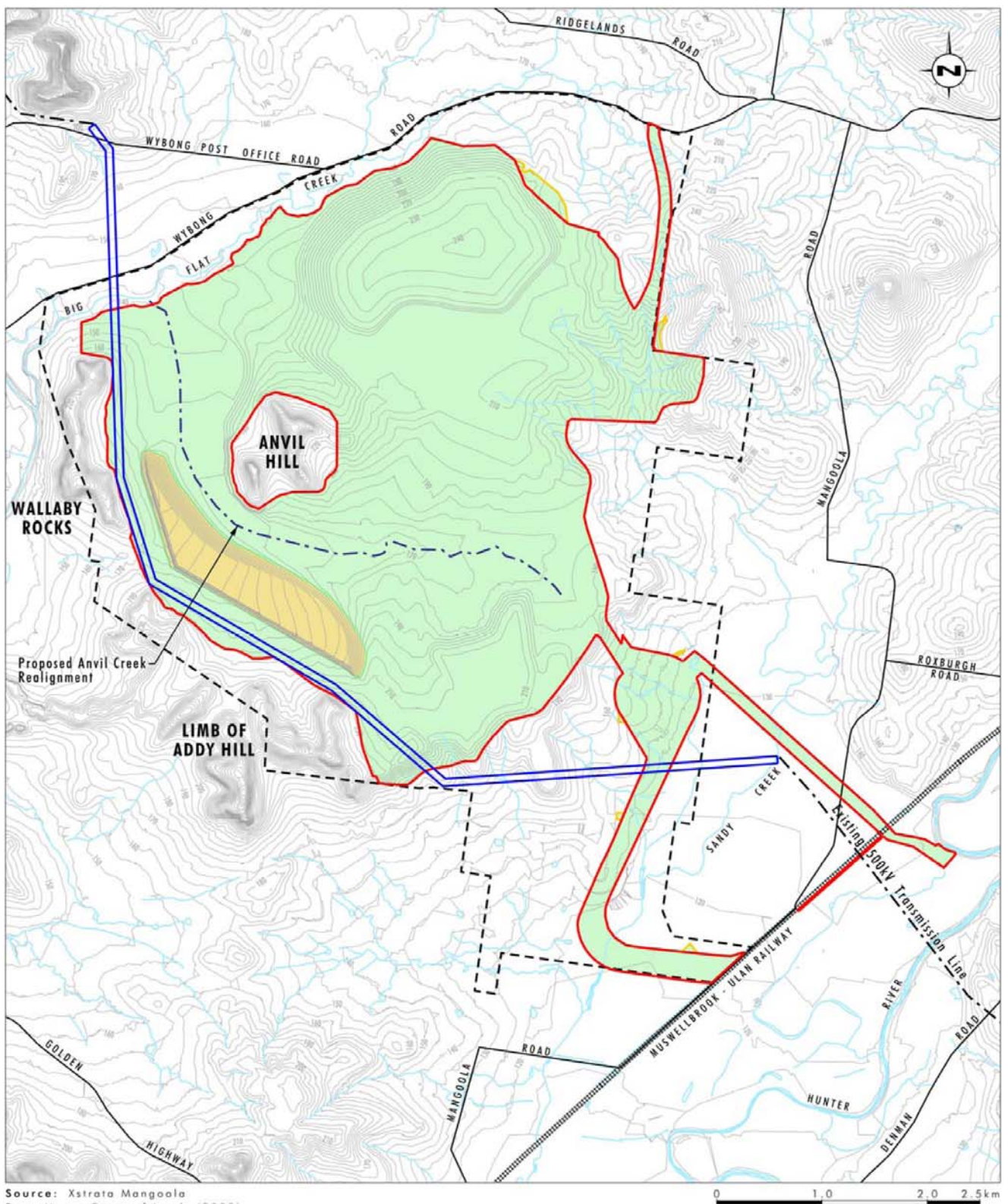
0 0.5 1.0 2.5km
1:60 000

Legend

- | | |
|--|---|
| Approved Project Disturbance Boundary | Current Treed Vegetation |
| Mining Lease 1626 Boundary | Proposed Revegetation/Regeneration Areas |
| Modified Project Disturbance Boundary | Grassland |
| Project Boundary | |
| Corridors | |
| Offset Areas | |

FIGURE 1

Offset and Corridor
Concept Plan

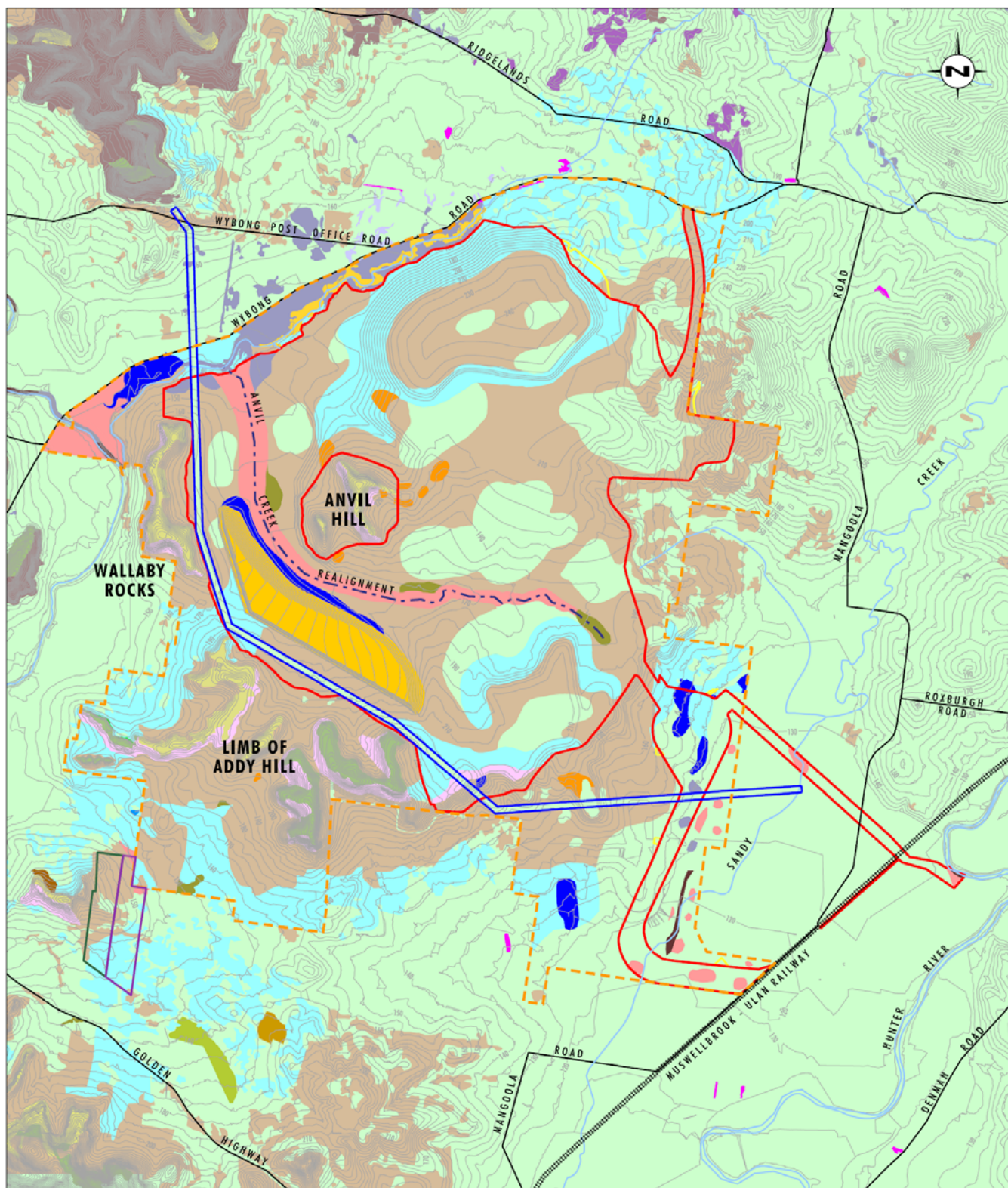


Legend

- Approved Project Disturbance Boundary
- - - Mining Lease 1626 Boundary
- Modified Project Disturbance Boundary
- Proposed 500kV Transmission Line Easement
- Rehabilitation - completed
- Final Void

FIGURE 11.10

Conceptual Final Landform



Source: Peake (2006) Note: Contour Interval 5m AHD

Legend

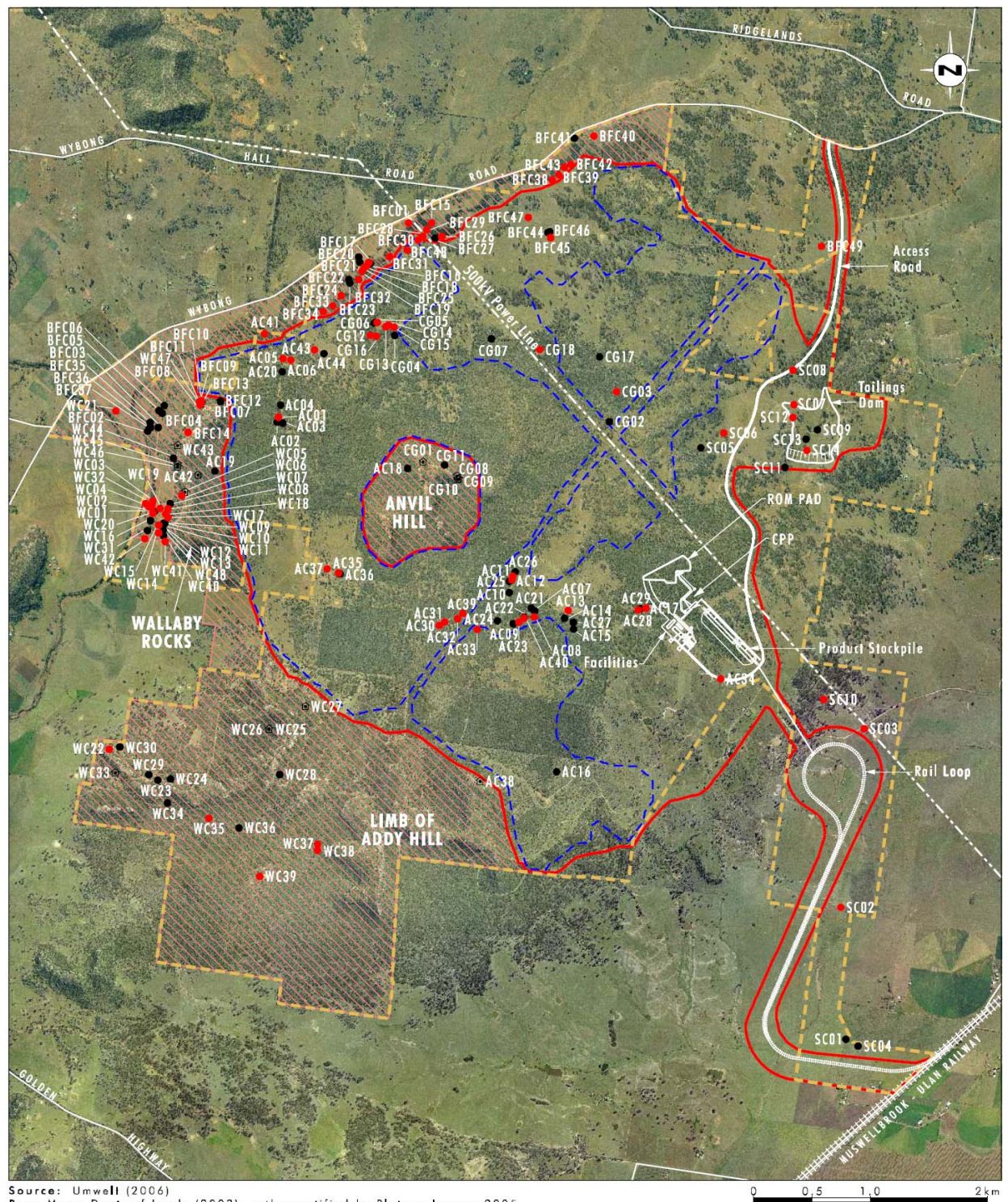
- Approved Project Disturbance Boundary
- Proposed 500kV Transmission Line Easement
- Modified Project Disturbance Boundary
- Combined Ecology Offset Boundary
- Proposed ETL Relocation Offset Area
- Proposed Mod. Additional Biodiversity Offset Area
- Ironbark-Wattle Low Exposed Woodland Complex
- Forest Red Gum Riparian Woodland
- Mixed Species Revegetation/Plantation
- Disturbed/Modified Native Grassland

- Coast Myall Exposed Woodland
- Sheltered Grey Gum Woodland
- Improved Pasture
- Spotted Gum Open Forest
- Swamp Oak Riparian Forest
- Vineyard
- Tall Mixed Shrubland Complex
- Drooping Sheoak Woodland
- River Oak Riparian Forest
- Exotic Rushland
- Bullock Woodland
- Red Ash Sheltered Forest
- Cypress Pine Woodland
- Paperbark Woodland
- Slaty Box Woodland (VEC, TSC Act)
- Weeping Myall Woodland (EEC, TSC and EPBC Acts)
- Ironbark Woodland Complex (EEC, TSC Act)
- Final Void
- Rough-barked Apple Woodland (consistent with EEC, TSC Act)

DRAFT FIGURE 12.26

Post Mining Rehabilitated Vegetation Communities

APPENDIX 7 ABORIGINAL SITES

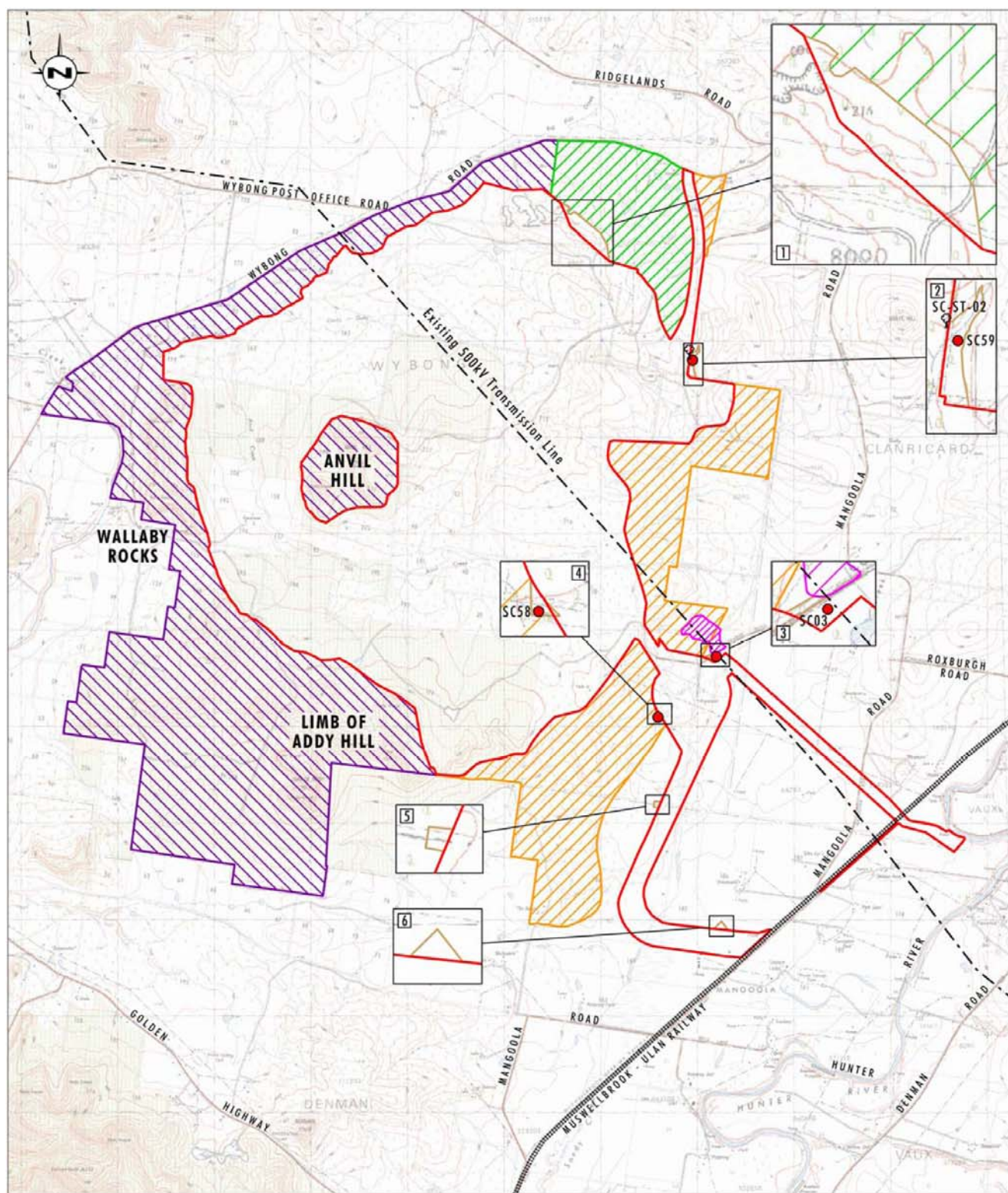


Legend

- Proposed Disturbance Area
- Archaeological Survey Area
- Proposed Mining Area
- Proposed Offset Area
- Artefact Scatter (Open Camp Site)
- Isolated Find
- Shelter with PAD

FIGURE 5.26

Aboriginal Sites and
Cultural Heritage Offsets



Source: Dept. of Lands (2006)

Legend

- Approved Project Disturbance Boundary
- Modified Project Disturbance Boundary
- Approved Aboriginal Cultural Heritage Offset Areas
- Habitat Enhancement Area
- Surveyed Habitat Enhancement Area
- SC10 Management Zone
- Artefact Scatter
- ♂ Scarred Tree

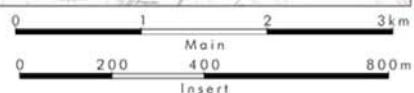
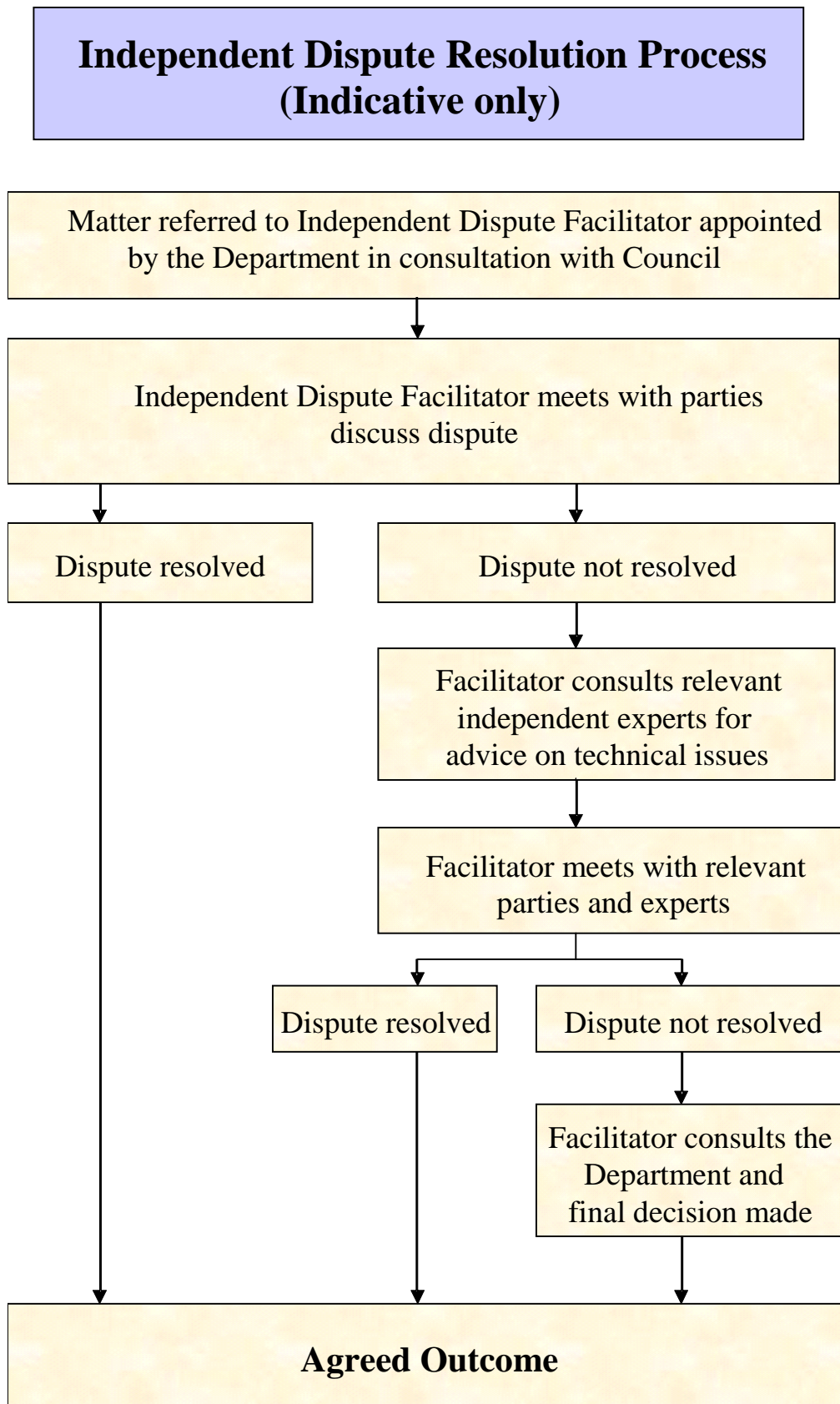


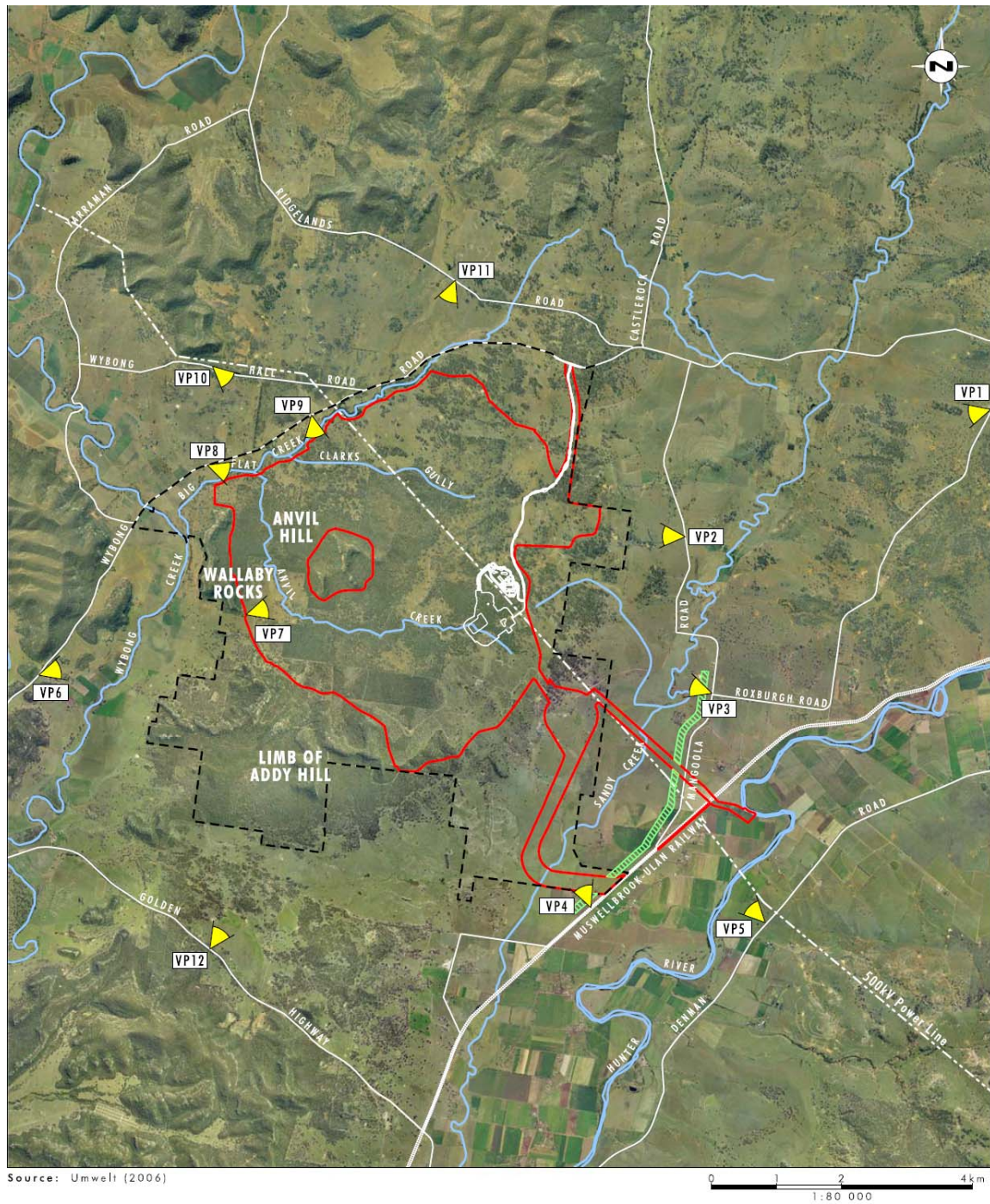
FIGURE 12.6

Location of Sites Associated with Modification Areas

**APPENDIX 8
INDEPENDENT DISPUTE RESOLUTION PROCESS**



APPENDIX 9 VISUAL VEGETATION SCREEN



Legend

- ▬ Proposed Disturbance Area
- Project Area
- ▲ Viewpoint
- VP6 Viewpoint Number
- ▬ Proposed Vegetation Screening

FIGURE 4.1
Visual Assessment Locations