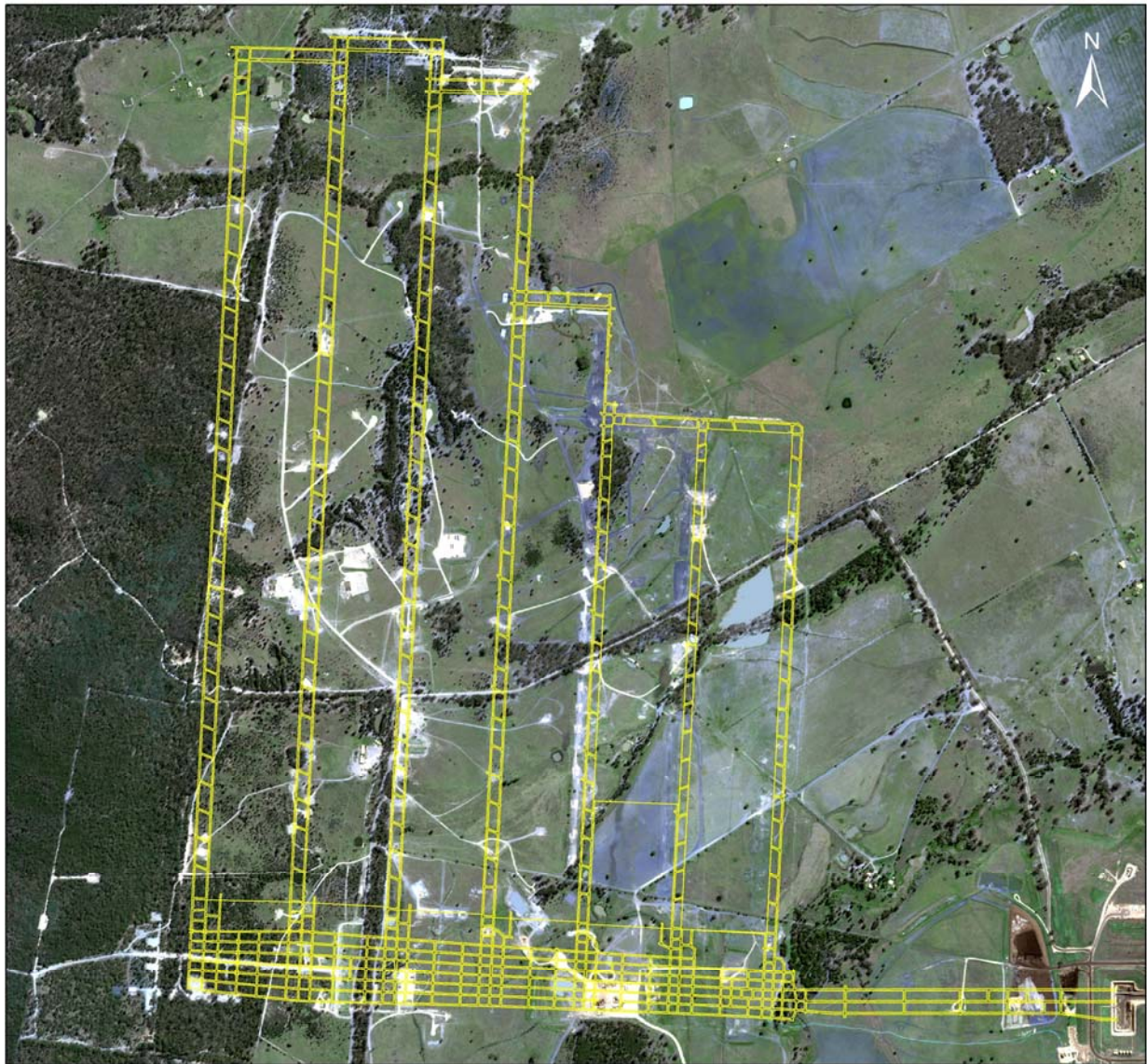


## Narrabri Mine

### Landscape Management Plan (LW101 - 106)

Prepared for  
**Narrabri Coal Operations Pty Ltd**

18 May 2016



## DOCUMENT TRACKING

Item	Detail
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## ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd with support from Narrabri Coal Operations Pty Ltd

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## Abbreviations

ABBREVIATION	DESCRIPTION
DPI Water	Department of Primary Industries – Water
ELA	Eco Logical Australia Pty Ltd
EMS	Environmental Management System
LSMP	Landscape Management Plan
MCP	Mine Closure Plan
ML	Mining Lease
MOP	Mine Operations Plan
Mt	million tonnes
Mtpa	million tonnes per annum
NCOPL	Narrabri Coal Operations Pty Ltd
NSC	Narrabri Shire Council
OEH	Office of Environment and Heritage
PA	Project Approval
RMP	Rehabilitation Management Plan
ROM	Run-of-mine

# 1 Introduction

The Narrabri Coal Mine (NCM) is located approximately 28 km south-east of Narrabri and approximately 10 km north-west of Baan Baa in north-western New South Wales (Figure 1). NCM is owned and operated by Narrabri Coal Operations Pty Ltd (NCOPL), which is a joint venture between Narrabri Coal Pty Ltd (70%), Upper Horn Investments (Australia) Pty Limited (7.5%), J-Power Australia Pty Limited (7.5%), Daewoo International Narrabri Investment Pty Limited and Kores Narrabri Pty Limited (7.5%), EDF Trading Australia Pty Limited (7.5%), in which Narrabri Coal Pty Ltd is an owned subsidiary of Whitehaven Coal Limited (WCL).

NCM covers an area of approximately 5,229 ha within the Kurrajong and Pine Creek tributary catchments of the Namoi River Catchment. NCM is located within an area of mainly freehold agricultural and forested land, with small sections located within the Pilliga East and Jacks Creek State Forests.

NCM is located within Mining Lease (ML) 1609, which is held by WCM and has been in operation since 2008. Mining at the site is being undertaken in two stages, during which the mine progressed from a 2.5 Million tonnes per annum (Mtpa) continuous miner operation (Stage 1), to an 8 Mtpa longwall mining operation (Stage 2).

Stage 1, (project approval for Stage 1 (PA 05\_0102) was issued on 13 November 2007), involved the establishment of surface facilities to support the underground operations using underground continuous miner methods. As a requirement of PA 05\_0102, a Landscape Management Plan (LSMP) was prepared for Stage 1 by Eco Logical Australia (ELA) in 2009 (ELA 2009), which covers the construction of surface infrastructure associated with the mine, a box cut and pit bottom area and the infrastructure associated with the underground mining area. Stage 1 of the project covers a combined surface area of 255 ha designated for all surface infrastructure associated with this mine. The mining operation will utilise continuous miner methods at 11 (Mtpa) for a minimum of 21 years; although, this method would provide for a mine life of 50 years for Stage 1 operations.

Stage 2, (project approval (PA) 08\_144, as modified, was issued on the 26<sup>th</sup> July 2010), involves converting the existing mining operations to longwall mining of 20 longwall panels. As a requirement of PA 08\_0144, as modified, for Stage 2 of the Narrabri Coal Mine operations, the existing Landscape Management Plan (LSMP) for Stage 1 was revised to encompass all proposed mining activities and potential impacts associated with the landscape management for the site (Stages 1 and 2).

Schedule 5, Condition 3 of the Stage 2 approval required the preparation of a LSMP to the satisfaction of the Secretary and the Division of Resources and Energy (DRE). The two key components of the LSMP were:

- A Rehabilitation Management Plan (RMP)
- A Mine Closure Plan (MCP).

This revised LSMP has been prepared to fulfil the LSMP requirements identified in PA 08\_0144, as modified. The revised LSMP extends the Longwall 101 to 105 Extraction Plan to include LW 106 based on the detailed Mine Subsidence Assessment for the Proposed Addition of Longwall 106 to the Longwall 101 to 105 Extraction Plan by Ditton Geotechnical Services Pty Ltd (DGS 2015).



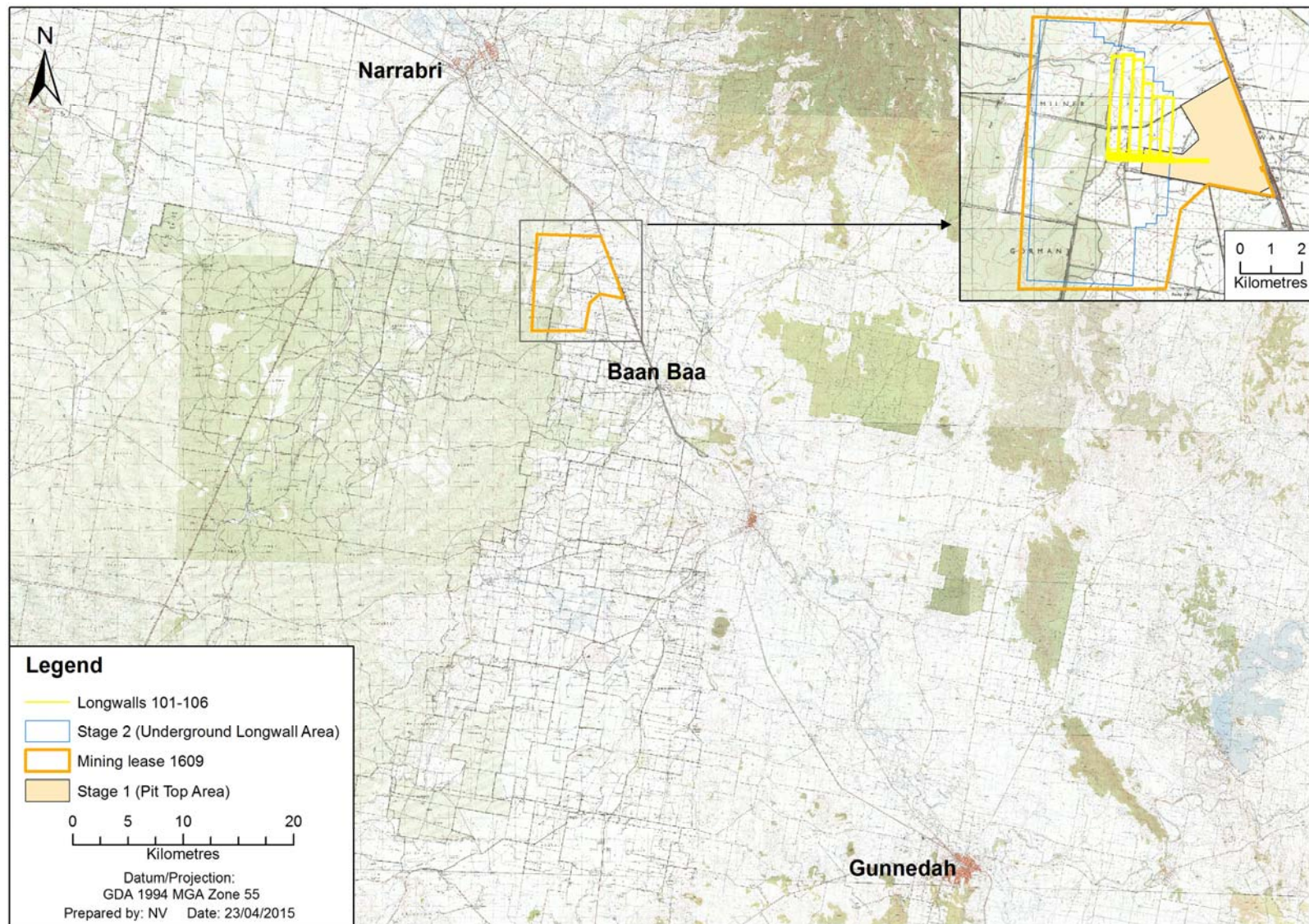


Figure 1: Location of the Narrabri Coal Mine.

## 2 Background

Prior to NCM, no mining activities have been undertaken on the site. Following mining surveys in the 1980's, a 6.5 m intersection of high quality coal at a depth of 167 m was identified (R. W. Corkery & Co Pty Ltd 2007). An Exploration License (EL 6243) was granted to NCOPL in May 2004. A 229 Million tonne (Mt) coal resource was identified and the decision to proceed with the project was made in late 2005. The preparation of a number of environmental studies was undertaken, with the Environmental Assessment submitted to the Department of Planning in August 2006 for Stage 1 of the mine and in November 2009 for Stage 2 of the mine.

Stage 1 of the mine project (PA 05\_0102) was approved on 13 November 2007. Stage 1 covers the site establishment of infrastructure associated with the mine and its operation. During this time a maximum of 2.5 Mtpa of coal will be produced by continuous mining methods.

Stage 2 of the mine project (PA 08\_0144) was approved on 26<sup>th</sup> July 2010. The MOP (NCOPL 2011) for Stage 2 of the mine project is in effect until the 31<sup>st</sup> December 2017, when a revision of the MOP will be undertaken. Stage 2 covers the progression from mining by continuous miner (open cut) to longwall mining, construction and use of mine ventilation and gas drainage infrastructure, mine dewatering and other associated infrastructure. During this stage, the mine will progress from a 2.5 Mtpa continuous miner operation, to an 11 Mtpa longwall mining operation.

The total area of the Mining Lease (ML 1609) covers 5,298 ha (Figure 2). This includes 457.4 ha for the construction and operation of all mine surface facilities (NCOPL 2011). Infrastructure associated with the mine is located in the Pit Top Area (Stage 1). The Pit Top Area covers an area of approximately 255 ha. Surface facilities include materials handling and processing, train loading, a rail loop, administration facilities and water management. Construction of surface infrastructure associated with the mine began in early 2008. The construction of the box cut began in May 2008.

The coal resource is contained within the Hoskissons Coal Seam at a depth of 160 - 170 m (Belford Dome Resource Assessment 2007). The coal seam is between 8 – 10 m thick in the western half of the ML 1609. The eastern half of the ML 1609 is cut off at approximately 160 m by the overlying Digby formation (Belford Dome Resource Assessment 2007). The coal seam generally strikes north-south and dips gently to the west. It has been calculated that there are approximately 230 Mt of coal resource, of which 160 Mt are recoverable (Belford Dome Resource Assessment 2007).

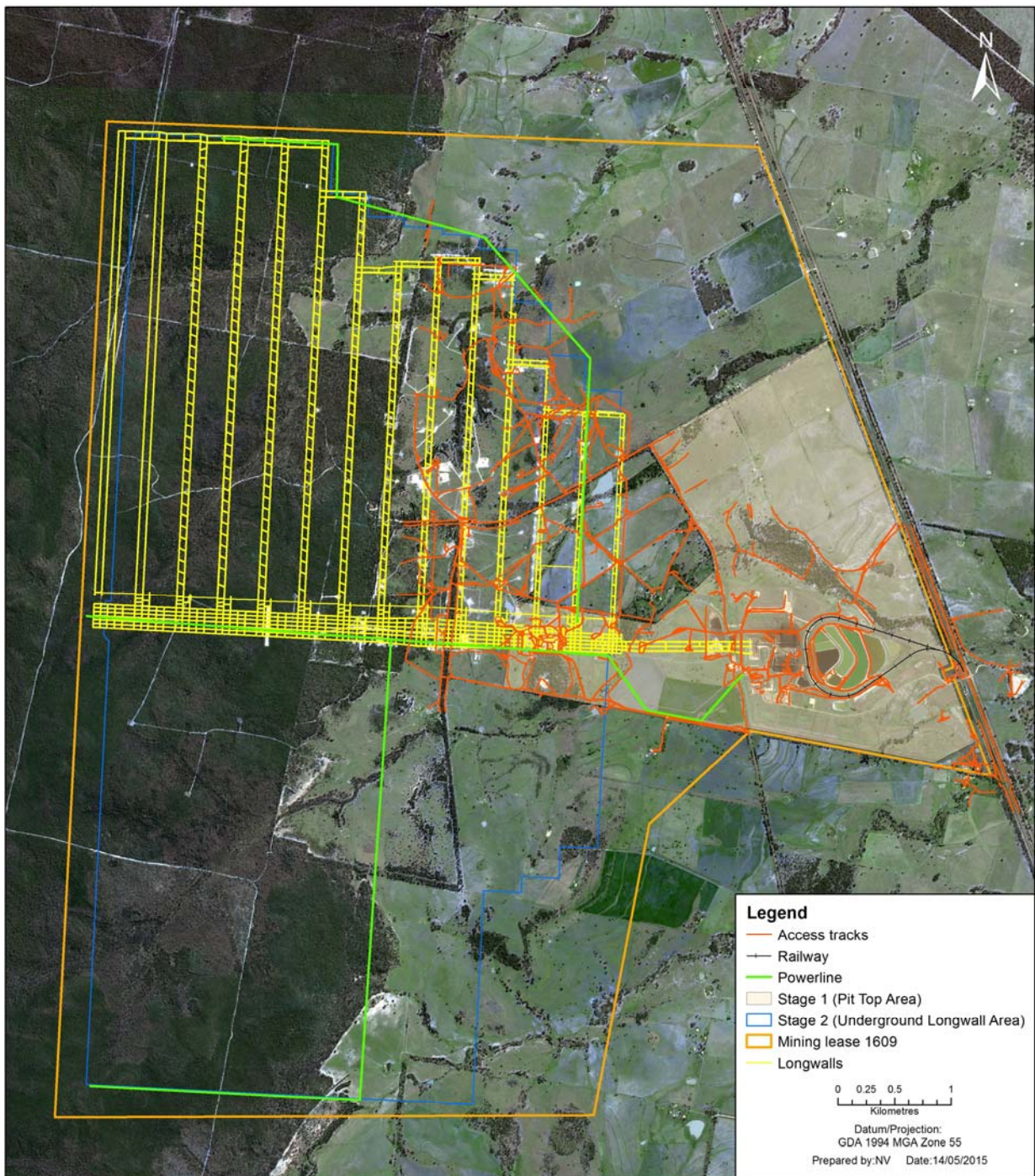
Access to the coal mine is from the Kamilaroi Highway and all associated infrastructure is located approximately 1 km west of the highway. Transportation of the mined coal to the Run of Mine (ROM) stockpile will be by underground conveyers (R. W. Corkery & Co Pty Ltd 2007). From here the stockpile will be crushed/resized and stored in the Product Stockpile before being loaded to rail for transportation to Newcastle (R. W. Corkery & Co Pty Ltd 2007).

The Project Approvals (PA 05\_0102 and PA 08\_0144) were issued under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and include several conditions, including the development of a LSMP for Stage 1 (Schedule 3, Condition 29) and the revision of the LSMP for Stage 2 (Schedule 5, Condition 3). The conditions of PA 08\_0144, as modified, and the sections in this document where they are addressed in the LSMP are shown in Table 1 and Appendix A.

This version of the LSMP has been revised in accordance with Schedule 3, Condition 4(g) which requires appropriate revisions to the LSMP be prepared and submitted with each Extraction Plan for



second workings (the extraction of coal using longwall methods). These revisions have been prepared based on the revised subsidence predictions prepared by Ditton Geotechnical Services (DGS 2015).



**Figure 2: Area of the Mining Lease, Pit Top Area (Stage 1) and Underground Longwall Area (Stage 2)**



**Table 1: Conditions of consent associated with PA 08\_0144 which are relevant to this LSMP**

Condition Number	Condition Requirement	Relevant Section of this Report
Schedule 3 Condition 4	<p>The proponent shall prepare and implement Extraction Plans for any second workings to be mined to the satisfaction of the Secretary. Each Extraction Plan must:</p> <p>g) Include the following to the satisfaction of DRE:</p> <ul style="list-style-type: none"> <li>• Appropriate revisions to the Landscape Management Plan required under Condition 3 of Schedule 5;</li> </ul>	This document version and Appendix D and E
Schedule 5 Condition 3	<p>The proponent shall revise the Landscape Management Plan for the Stage 1 project to encompass all proposed and potential impacts associated with landscape management for the site (Stages 1 and 2), and will subsequently implement this revised version of the Landscape Management Plan to the satisfaction of the Secretary and DRE. This plan must:</p> <p>a) Be submitted to the Secretary for approval by 31<sup>st</sup> June 2015</p> <p>b) Be prepared by suitably qualified expert/s whose appointments have been endorsed by the Secretary</p> <p>c) Be prepared in consultation with DPI Water, OEH and NSC</p> <p>d) Include a:</p> <ul style="list-style-type: none"> <li>• Rehabilitation Management Plan</li> <li>• A Mine Closure Plan</li> </ul>	<p>Appendix A</p> <p>Appendix D</p> <p>Appendix E</p>
Schedule 5 Condition 4	<p>The Rehabilitation Management Plan must include:</p> <p>a) The rehabilitation objectives for the site</p> <p>b) A strategic description of how the rehabilitation of the site would be integrated with the surrounding land use</p> <p>c) A general description of the short and long term measures that would be implemented to rehabilitate the site</p> <p>d) A detailed description of the measures that would be implemented to remediate predicted subsidence impacts under individual Extraction Plans</p> <p>e) A detailed description of the measures that would be implemented to minimise environmental impacts of mining operations, and to rehabilitate the site, including measures to be implemented for:</p> <ul style="list-style-type: none"> <li>• Managing the remnant vegetation and habitat on site</li> <li>• Minimising impacts on fauna</li> <li>• Minimising visual impacts</li> <li>• Conserving and reusing topsoil</li> <li>• Controlling weeds, feral pests, and access</li> <li>• Managing bushfires</li> <li>• Managing any potential conflicts between rehabilitation works and Aboriginal Cultural Heritage</li> </ul>	Appendix D

Condition Number	Condition Requirement	Relevant Section of this Report
	<ul style="list-style-type: none"> <li>f) Detailed performance and completion criteria for the rehabilitation of the site</li> <li>g) A detailed description of how the performance of the rehabilitation works would be monitored over time, to achieve the stated objectives and against the relevant performance and completion criteria</li> <li>h) Details of who is responsible for monitoring, reviewing and implementing the plan</li> </ul>	
Schedule 5 Condition 5	<p>The Mine Closure Plan must:</p> <ul style="list-style-type: none"> <li>a) Define the objectives and criteria for mine closure</li> <li>b) Investigate options for the future use of the site</li> <li>c) Provide a detailed methodology for decommissioning the sites evaporation/storage ponds and the treatment of any accumulated salt within and around these ponds</li> <li>d) Investigate ways to minimise the adverse socio-economic effects associated with mine closure, including reduction in local and regional employment levels</li> <li>e) Describe the measures that would be implemented to minimize or manage the on-going environmental effects of the project</li> <li>f) Describe how the performance of the measures would be monitored over time</li> </ul>	Appendix E

In accordance with Schedule 5, Condition 3 (b) of the project approval, NCOPL sought approval from the Department of Planning and Environment (DP&E) for the appointment of Eco Logical Australia Pty Ltd to prepare the LSMP and RMP, with SLR Consulting Australia (SLR) preparing the MCP. A copy of the approval letter from DP&E is attached in Appendix B.

### 3 Purpose and Objectives

The purpose of the LSMP is to:

- Address legislative requirements and guidelines relevant to the LSMP and related RMP and MCP
- Provide NCOPL with a clear and concise description of their responsibilities in relation to the LSMP (including the RMP and MCP) during the operation and subsequent closure of the NCM.

### 4 Structure of the Landscape Management Plan

In accordance with the requirements of Schedule 5, Condition 3(d) and Schedule 6, Condition 2 of the PA 08\_0144, the LSMP is to be made up of two plans; a RMP; and a MCP. The relationship between these plans and the NCOPL Environmental Management System (EMS) is shown in Figure 3.

An additional aim of the LSMP is to state how the objectives for the completion criteria of the final rehabilitation of the mine will be achieved. Further details of this are provided in the RMP and MCP. Completion criteria for the long term rehabilitation of the mine are largely conceptual, as the life of the mine will exceed 25 years. Long term final rehabilitation objectives have been outlined in the Stage 1 MOP (R.W. Corkery & Co. Pty Ltd 2007) and Stage 2 MOP (NCOPL 2011) and relate closely to the rehabilitation criteria in Section 5 of the Stage 1 and Stage 2 MOP's. Completion criteria include:

- The creation of low maintenance, geo-technically stable, safe and well vegetated landform which blends with the surrounding natural landscape
- Backfilling of the box cut and blending of the final landform with the surrounding topography such that the visual impact of the post-mining landform is minimised
- Decommissioning and removal of all project related infrastructure not required for the future use of the site
- Remediating any land contaminated by accumulated salts or hydrocarbon spills / leaks
- Re-establishment of agricultural land of comparable land capability to that of the pre-disturbance environment i.e. Class III.

The following is a summary of the key aspects addressed in both of the RMP and MCP. Further details of each individual plan can be seen in Appendix C and Appendix D, respectively.

#### 4.1 Rehabilitation Management Plan

The RMP is to:

- Define rehabilitation objectives for the site
- Describe how the rehabilitated site would be integrated with the surrounding land use



- Provide short and long term measures to be implemented to rehabilitate the site
- Provide a detailed description of the measures that would be implemented to remediate predicted subsidence impacts under individual extraction plans
- Provide a detailed description of the measures that would be implemented to rehabilitate the site, including measures for:
  - Managing remnant vegetation and habitat on site
  - Minimising impacts on fauna
  - Minimising visual impacts
  - Conserving and reusing topsoil
  - Controlling weeds, feral pests and access
  - Managing bushfires
  - Managing any potential conflicts between the rehabilitation works and Aboriginal Cultural Heritage
- Detailed performance criteria
- Detailed monitoring programme over time to meet the stated objectives and against relative performance and completion criteria
- Details of who is responsible for monitoring, reviewing and implementing the plan.

## **4.2 Mine Closure Plan**

The MCP is to:

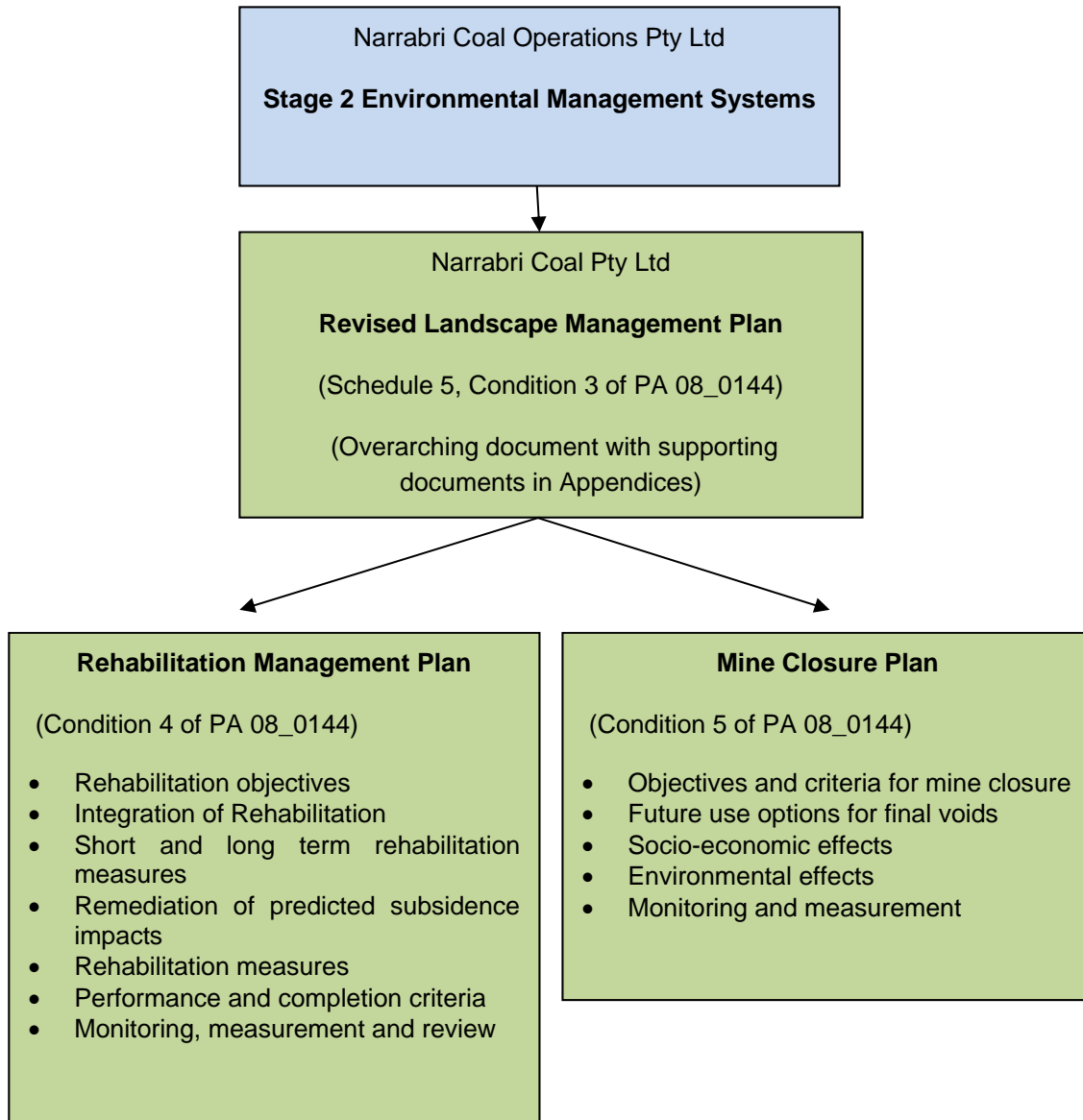
- Provide an overall framework for mine closure including rehabilitation and decommissioning strategies. In this regard a Mine Closure Plan should be considered a template on which future activities should be based
- Ensure that adequate financial provision is made available to cover the cost of decommissioning, final rehabilitation and any other post closure costs related to the closure of the Narrabri Mine
- Establish clear and agreed criteria with all relevant stakeholders, which can be used to provide the standard to which the final mine rehabilitation and post mining land use can be assessed against
- Reduce or eliminate adverse environmental effects once the mine ceases operation
- Ensure closure is completed in accordance with good industry practice as well as meeting the statutory requirements that may be applicable
- Ensure the closed mine does not pose an unacceptable risk to public health and safety (SLR 2016).

### 4.3 Revision of Plan

This revision of the Narrabri Coal Mine Stage 2 LSMP is aimed at incorporating longwall 106. The rehabilitation domains utilised within the original Stage 2 LSMP have been retained for this LSMP. For the purposes of the MCP, new domains were utilised, given the works required for mine closure. Table 2 below provides a summary of the Domains and the nomenclature used throughout the RMP and MCP.

**Table 2: Domain consistency through RMP and MCP**

RMP	MCP
Domain 1 - Workshop, offices, bath house, staff car parking, access road, rail crossings, rail loop, and rail load out bin	Domain 1 - Workshop, offices, bath house, staff car parking, , rail crossing, rail load-out bin, water pipeline, crushing and sizing equipment and coal stockpile areas. This also includes all other lands around the pit top area (excludes boxcut, access road, rail loop)
Domain 2 - Crushing and sizing equipment and coal stock piles	
Domain 3 - Box cut and transport , conveyor and ventilation drifts	Domain 2 - Box-cut and transport, conveyor and ventilation drifts
Domain 4 - Evaporation ponds and water storage dams	Domain 5 - Evaporation ponds and water storage dams (Dams A1 – Dam D)
Domain 5 - Other lands in the Pit Top Area (excluding Kurrajong Creek);	Domain 6 - Area directly above longwall operations; including all other lands within the surrounding Mine Lease area
Domain 6 - Underground Longwall Area and wider mining lease	
Domain 7 - Brine Storage Dams (BR1 – BR5)	Domain 4 - Brine Storage Dams (BR1 – BR 5)
Domain 8 - Rejects Emplacement Area and all weather unsealed road access.	Domain 3 - Rejects Emplacement Area and all weather unsealed access road



**Figure 3: Structure of the Landscape Management Plan**



## 5 Reporting and Reviewing

### 5.1 Reporting

All internal and external reporting will be undertaken in accordance with the Narrabri Coal Mine EMS, which includes reporting within the Annual Environmental Management Report (AEMR).

Specific individual reporting requirements are indicated in both the RMP and MCP. The reporting requirements identified in each of these plans are identified below in Table 3.

### 5.2 Reviewing

The Narrabri Coal Mine has an operational life of more than 25 years using continuous and longwall mining techniques. During the life of the mine, the mine plan may change depending on operational circumstances. The LSMP and its individual components will be required to be updated where needed to capture any mine plan changes. Three years prior to the mines closure, the LSMP will be reviewed to address the final mine plan and any changes that have occurred since the LSMP was last updated.

The LSMP, RMP and MCP will require a review within 3 months of any modification to the conditions of approval and if necessary revised as required to the satisfaction of the Secretary. In addition, each Extraction Plan prepared for the longwall panels will require the revision of the LSMP to the satisfaction of the Secretary.

**Table 3: Reporting Requirements of the Rehabilitation Management Plan and Mine Closure Plan**

Plan	Reporting Requirements	Responsibility
Rehabilitation Management Plan	5 year Review	Narrabri Coal
Mine Closure Plan	5 year Review	Narrabri Coal

## 6 Roles and Responsibilities

The Group Environmental Manager, NCOPL, is responsible for the implementation of this LSMP. The General Manager, NCOPL, (or their delegate) is responsible for:

- Delegating tasks associated with this LSMP when the Group Environmental Manager is absent
- Providing adequate resources to implement this LSMP
- Providing adequate training to employees and contractors regarding the requirements identified in this LSMP.

## 7 References

Belford Dome Resource Assessment (2007) *Narrabri Coal Project, Geological Assessment*. Prepared for Narrabri Coal Pty Ltd. Prepared by Belford Dome Resource Assessment, Pty Ltd

DGS (2015) *Mine Subsidence Effect Predictions and Impact Assessment for the Proposed Addition of Longwall 106 to the Longwall 101 to 105 Extraction Plan at the Narrabri Coal Mine, Narrabri*. Prepared by Ditton Geotechnical Services, Charlestown.

Eco Logical Australia (ELA) (2009) *Narrabri Coal Mine Stage 1 Landscape Management Plan*. Prepared for Narrabri Coal Operations Pty Ltd

Narrabri Coal Operations Pty Ltd (NCOPL) (2011) *Mining Operations Plan for the Stage 2 Longwall Project of the Narrabri Coal Mine*.

SLR (2016) *Narrabri Coal Mine – Revised Conceptual Mine Closure Plan for Stage 2 Longwall Operations*. Prepared by SLR Consulting Australia Pty Ltd

R. W. Corkery & Co Pty Ltd (2007) *Mine Operations Plan for the Construction and Continuous Development of Stage 1 of the Narrabri Coal Mine for the period ending 31 December 2011*. R. W. Corkery and Co. Pty Ltd

# Appendix A PA 08\_0144 Conditions

## SCHEDULE 5 REHABILITATION AND OFFSETS

### REHABILITATION

*Note: These conditions should be read in conjunction with sections 4, 8 and 12 of the revised Statement of Commitments and condition 3(c) of schedule 3.*

#### Rehabilitation Objectives

1. The Proponent shall rehabilitate the site to the satisfaction of the Director-General and I&I NSW in accordance with the rehabilitation objectives in Table 1.

*Table 1: Rehabilitation Objectives*

<b>Domain</b>	<b>Rehabilitation objective</b>
Surface Facilities Area	Set through condition 4 below
Other land affected by the project	Restore ecosystem function, including maintaining or establishing self-sustaining native ecosystems: <ul style="list-style-type: none"> <li>• comprised of local native plant species; with</li> <li>• a landform consistent with the surrounding environment</li> </ul>
Built features	Repair/restore to pre-mining condition or equivalent
Community	Minimise the adverse socio-economic effects associated with mine closure including the reduction in local and regional employment
	Ensure public safety

*Note: The Proponent may be required to define other rehabilitation objectives in management plans or strategy required under this schedule.*

#### Progressive Rehabilitation

2. To the extent that mining operations permit, the Proponent shall carry out rehabilitation progressively, that is, as soon as reasonably practicable following the disturbance.

#### Landscape Management Plan

3. The Proponent shall revise the Landscape Management Plan for the Stage 1 project to encompass all proposed mine activities and potential impacts associated with landscape management for the site (Stages 1 and 2) and subsequently implement this revised version of the Landscape Management Plan to the satisfaction of the Director-General and I&I NSW. This plan must:
  - (a) be submitted to the Director-General for approval by 30 June 2011;
  - (b) be prepared by suitably qualified expert/s whose appointment/s have been endorsed by the Director-General;
  - (c) be prepared in consultation with NOW, DECCW and NSC; and
  - (d) include a:
    - Rehabilitation Management Plan; and
    - Mine Closure Plan.

#### Rehabilitation Management Plan

4. The Rehabilitation Management Plan must include:
  - (a) the rehabilitation objectives for the site;
  - (b) a strategic description of how the rehabilitation of the site would be integrated with surrounding land use;
  - (c) a general description of the short and long term measures that would be implemented to rehabilitate the site;
  - (d) a detailed description of the measures that would be implemented to remediate predicted subsidence impacts under individual Extraction Plans;
  - (e) a detailed description of the measures that would be implemented to minimise environmental impacts of mining operations and to rehabilitate the site, including measures to be implemented for:
    - managing remnant vegetation and habitat on site;
    - minimising impacts on fauna;
    - minimising visual impacts;
    - conserving and reusing topsoil;



- controlling weeds, feral pests, and access;
  - managing bushfires; and
  - managing any potential conflicts between rehabilitation works and Aboriginal cultural heritage.
- (f) detailed performance and completion criteria for the rehabilitation of the site;
- (g) a detailed description of how the performance of the rehabilitation works would be monitored over time to achieve the stated objectives and against the relevant performance and completion criteria; and
- (h) details of who is responsible for monitoring, reviewing and implementing the plan.

*Note: In accordance with condition 11 of schedule 2, the preparation and implementation of Rehabilitation Management Plans is likely to be staged, with each plan covering a defined area (or domain) for rehabilitation. In addition, while mining operations are being carried out, some of the proposed remediation or rehabilitation measures may be included in the detailed management plans that form part of the Extraction Plan. If this is the case, however, then the Proponent will be required to ensure that there is good cross-referencing between the various management plans.*

#### **Mine Closure Plan**

5. The Mine Closure Plan must:
- (a) define the objectives and criteria for mine closure;
  - (b) investigate options for the future use of the site;
  - (c) provide a detailed methodology for decommissioning the site's evaporation/storage ponds and the treatment of any accumulated salt within or around those ponds;
  - (d) investigate ways to minimise the adverse socio-economic effects associated with mine closure, including reduction in local and regional employment levels;
  - (e) describe the measures that would be implemented to minimise or manage the on-going environmental effects of the project; and
  - (f) describe how the performance of these measures would be monitored over time.

#### **OFFSETS**

##### **Biodiversity Offset Strategy**

6. The Proponent shall provide a suitable biodiversity offset strategy to compensate for the impacts of Stages 1 and 2 of the project. This offset strategy must:
- (a) be prepared in consultation with DECCW;
  - (b) be submitted to the Director-General for approval by 31 December 2010, or as otherwise agreed by the Director-General;
  - (c) provide a detailed assessment of offset proposal/s involving the property/ies (agreed to by DECCW) adjoining Mt Kaputar National Park to confirm the ability of either of these property/ies to meet "like for like or better" and "maintain or improve" conservation outcomes;
  - (d) include and assess proposals to offset impacts to the Inland Grey Box EEC, *Bertya oppositifolia*, and foraging habitat for the Superb Parrot;
  - (e) include proposals on offsetting both direct and indirect impacts (ie edge effects) of the project; and
  - (f) determine the best overall combination of lands to provide a suitable offset.
7. The Proponent shall make suitable arrangements to provide appropriate long-term security for the offset areas by 31 December 2011, or other date agreed by the Director-General, to the satisfaction of the Director-General.

## Appendix B Endorsement by DP&E







Development Assessment Systems & Approvals  
Mining Projects  
Contact: Stephen O'Donoghue  
Phone: 0677 345 626  
Email: [stephen.o'donoghue@planning.nsw.gov.au](mailto:stephen.o'donoghue@planning.nsw.gov.au)

Mr Steve Farrar  
Environmental Officer – Narrabri Mine  
Whitehaven Coal Limited  
Locked Bag 1002  
NARRABRI NSW 2390

Dear Mr Farrar

**Narrabri Coal Project – Stage 2 (08\_0144)  
Approval of Experts for revised Extraction Plan**

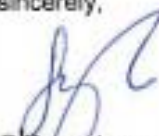
I refer to your letter dated 23 April 2015, seeking the approval of nominated experts as being suitably qualified and experienced to produce relevant components of the revised Extraction Plan (EP) for Longwalls 1-5 to now incorporate Longwall Panel 6. The Department notes that Whitehaven personnel (Tony Dwyer and Steve Farrar) are proposed to draft non-expert /administrative components of the revised EP.

The Department has reviewed the qualifications and experience of the nominees and considers that they are suitable. Accordingly, the Secretary has approved the appointment of:

- Mr Steve Ditton of Ditton Geotechnical Services for revised subsidence predictions;
- Mr Paul Frazier and Nathalie van der Veer of Eco Logical Australia Pty Ltd to revise the Biodiversity and Land Management Plans and revise the Landscape Management Plan (Rehabilitation);
- Mr Andrew Hutton of SLR Consulting to revise the Mine Closure Plan;
- Mr Saul Martinez to revise the Water Management Plan; and
- Ms Amanda Kerr and Mr Luke Kirkwood of AECOM Australia Pty Ltd to revise components of the Extraction Plan relating to Heritage.

If you have any queries on this matter, please contact myself on the details listed above.

Yours sincerely,

  
Steve O'Donoghue  
A/ Investigations (Lead) Northern Region  
as the Secretary's nominee

23/4/15



**Planning &  
Environment**

**Development Assessment Systems & Approvals  
Mining Projects**

Contact: Stephen O'Donoghue

Phone: 0477 345 626

Email: [stephen.o'donoghue@planning.nsw.gov.au](mailto:stephen.o'donoghue@planning.nsw.gov.au)

Mr Steve Farrar  
Environmental Officer – Narrabri Mine  
Whitehaven Coal Limited  
Locked Bag 1002  
NARRABRI NSW 2390

Dear Mr Farrar

**Narrabri Coal Project – Stage 2 (08\_0144)  
Approval of Experts for revised Extraction Plan**

I refer to your letter dated 23 April 2015, seeking the approval of nominated experts as being suitably qualified and experienced to produce relevant components of the revised Extraction Plan (EP) for Longwalls 1-5 to now incorporate Longwall Panel 6. The Department notes that Whitehaven personnel (Tony Dwyer and Steve Farrar) are proposed to draft non-expert /administrative components of the revised EP.

The Department has reviewed the qualifications and experience of the nominees and considers that they are suitable. Accordingly, the Secretary has approved the appointment of:

- Mr Steve Ditton of Ditton Geotechnical Services for revised subsidence predictions;
- Mr Paul Frazier and Nathalie van der Veer of Eco Logical Australia Pty Ltd to revise the Biodiversity and Land Management Plans and revise the Landscape Management Plan (Rehabilitation);
- Mr Andrew Hutton of SLR Consulting to revise the Mine Closure Plan;
- Mr Saul Martinez to revise the Water Management Plan; and
- Ms Amanda Kerr and Mr Luke Kirkwood of AECOM Australia Pty Ltd to revise components of the Extraction Plan relating to Heritage.

If you have any queries on this matter, please contact myself on the details listed above.

Yours sincerely,

A handwritten signature in blue ink, appearing to be 'S O'Donoghue'.

Steve O'Donoghue  
**A/ Investigations (Lead) Northern Region**  
as the Secretary's nominee

23/4/15

Planning and Environment, Mining Projects, GPO Box 39, SYDNEY NSW 2001  
Phone: (02) 9228 6483 Fax: (02) 9228 6466 DX 10181 Sydney Stock Exchange Website: [www.planning.nsw.gov.au](http://www.planning.nsw.gov.au)



## Appendix C Agency Correspondence

### Office of Environment & Heritage



Date: 22 September 2015  
Your reference: BF150825\_EP LW106  
Rev\_OEH  
Our reference: DOC15/372702  
Contact: Terry Mazzer 02 - 6883 5302

Steven Farrer  
Environmental Superintendent  
Narrabri Mine  
Whitehaven Coal  
Locked Bag 1002  
Narrabri NSW 2390

Dear Steven

**RE: Narrabri Mine Extraction Plan Revision to Include LW106**

I refer to your letter dated 25 August 2015 seeking comment from the Office of Environment and Heritage (OEH) on the revisions to the Extraction Plans dealing with Biodiversity, Landscape, Water and Heritage. This response will deal with the first three reports. OEH comment on the Heritage aspects will follow at a later date.

OEH understands that the purpose of the revisions is to include consideration of longwall 106 alongside longwalls 101 to 105. Thus most changes are incremental in nature. We have reviewed the information provided and make a small number of recommendations regarding these plans. Details are provided in Attachment A. Please note that this assessment is not a detailed review of the project, and therefore additional information regarding issues within OEH's responsibilities may be requested at a later stage.

If you have any questions regarding this matter please contact Terry Mazzer on 02 6883 5302 or email [terry.mazzer@environment.nsw.gov.au](mailto:terry.mazzer@environment.nsw.gov.au).

Yours sincerely

A handwritten signature in black ink, appearing to read "S Ardill".

**SONYA ARDILL**  
Senior Team Leader Planning, North West Region  
Regional Operations

Attachment A: OEH review of the Narrabri Mine Extraction Plan Revision

PO Box 2111 Dubbo NSW 2830  
Level 1 48-52 Wingewarra Street Dubbo NSW  
Tel: (02) 6883 5300 Fax: (02) 6884 8875  
ABN 30 841 387 271  
[www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)



## OEH review of the Narrabri Mine Extraction Plan Revision – 08\_0144

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### Acronyms

BMP	Biodiversity Management Plan
OEH	NSW Office of Environment and Heritage
RMP	Rehabilitation Management Plan

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### **1 Biodiversity Management Plan – Subsidence effects**

OEH understands that predicted subsidence effects have been updated following measurement of actual subsidence at longwalls 101-104. Section 5.3 of the BMP discussed predicted subsidence effects and impacts including sub-surface cracking causing root shearing and rerouting creek flows, ponding of water etc. Section 5.4 then details the potential effects on biodiversity.

OEH notes that the revised subsidence parameters are often greater in magnitude than had previously been predicted. It is also the case that there have been known impacts of subsidence above previously extracted longwalls at the mine such as tree death and ponding of water. Consequently OEH is disappointed that there has been no enhancement of the performance measures and indicators, monitoring program, management measures or contingency response in light of this new information. For example, the monitoring and response sections seem to be focussed on vegetation clearing on the surface but should also focus on sites where vegetation may be affected by subsidence impacts.

#### Recommendation

- 1.1 Upgrade the performance measures and indicators, monitoring program, management measures or contingency response to deal with subsidence-induced damage to vegetation.

### **2 Biodiversity Management Plan – Scale back of monitoring**

Section 1.1 and 7.6 of the BMP propose scaling back of some monitoring parameters if no impacts associated with subsidence have been observed within three years of the completion of the each longwall. While OEH is not necessarily opposed to this further consultation would be required with government agencies as noted in s7.6.

#### Recommendation

- 2.1 Review monitoring parameters and consult with agencies on which, if any, could be scaled back.

### **3 Rehabilitation Management Plan – Aboriginal heritage sites**

While this response does not generally cover heritage aspects OEH has noted a discrepancy in the section titled "Aboriginal heritage sites" on page 28. The statement from the previous RMP that artefacts should be removed to a keeping place has been removed. However, at the end of the paragraph there is mention that these artefacts should be returned.

#### Recommendation

- 3.1 Clarify whether it is intended that artefacts are removed for safekeeping or left in-situ.



Date: 30 September 2015  
Your reference: SF150825\_EP LW106  
Rev\_OEH  
Our reference: DOO15/372702  
Contact: Paul Houston 02 - 6883 5361

Steven Farrer  
Environmental Superintendent  
Narrabri Mine  
Whitehaven Coal  
Locked Bag 1002  
Narrabri NSW 2390

Dear Steven

**RE: Narrabri Mine Extraction Plan Revision to Include LW106**

I refer to your letter dated 25 August 2015 seeking comment from the Office of Environment and Heritage (OEH) on the revisions to the Extraction Plans dealing with Biodiversity, Landscape, Water and Heritage. This response deals with the Aboriginal heritage aspects of the plan, and are in addition to comments made in our letter dated 22 September 2015.

If you have any questions regarding this matter please contact Paul Houston on 02 6883 5361 or email [paul.houston@environment.nsw.gov.au](mailto:paul.houston@environment.nsw.gov.au).

Yours sincerely

A handwritten signature in black ink, appearing to read 'SArdill'.

**SONYA ARDILL**  
Senior Team Leader Planning, North West Region  
Regional Operations

Attachment A: OEH review of the Narrabri Mine Extraction Plan Revision – Aboriginal Heritage comments

PO Box 2111 Dubbo NSW 2830  
Level 1 48-52 Wingewarra Street, Dubbo NSW  
Tel: (02) 6883 5300 Fax: (02) 6884 8875  
ABN 30 841 387 271  
[www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

## ATTACHMENT A

## OEH review of the Narrabri Mine Extraction Plan Revision – 08\_0144 – Aboriginal Heritage comments and recommendations

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### Issue 1: Consultation protocols.

The proponent should develop a communication strategy in consultation with the Registered Aboriginal Parties (RAPs) that defines the process for how the communication will occur between the parties and include:

- Address for service
- What is an acceptable form of communication e.g. in written form email or by phone
- Timeframes (for requests and responses)
- Process if there is no response within the timeframe

### Issue 2: Dispute Resolution

The proponent should provide a clear definition of what constitutes a dispute, and develop a dispute resolution process (with appropriate timeframes) in consultation with the RAPs.

### Issue 3: Handling complaints

The proponent should develop a process for handling complaints or reinstate the previous process for handling complaints.

### Issue 5: Definitions or Interpretations

The lack of definitions or interpretations may lead to confusion for the parties involved in this plan. The proponent should include a definitions table for any potentially contentious words e.g. Ground Disturbance, Complaints, Disputes etc. so there is a clear understanding by all parties about the interpretation of what is meant by these words.

### Issue 6: Appendix A - Aboriginal Site salvage, Site collection

Step 9: The proponent should insert appropriate timeframes in relation to written notification. These timeframes should be form part of the communication strategy.

Step 10: If the proponent is to return the salvage material to an authorised Aboriginal organisation this needs to be done under a Care Agreement. An additional step should be added in relation to applying for a care agreement before the material can be returned to an authorised Aboriginal organisation.

### Issue 7: Which sites have a high likelihood of been impacted upon from the project:

OEH is unsure from reading the report which of the sites have a high likelihood of been impacted upon by this project. Under 2.1 Artefact scatters (last paragraph) "Those sites identified as having a high likelihood will be salvaged prior to mining", however Table 3 does not clearly define which sites are of high, medium or low likelihood of been impacted.

To avoid confusion, Table 3 should be updated to clearly describe which of the sites is of high, medium or low likelihood of been impacted upon.

### Issue 8: Table 5 -1.01

To avoid confusion about the condition of the sites before and after the completion of each longwall panel, this process should be done in conjunction with the RAPs, not just the Archaeologist. Further,

appropriate timeframes should be developed for this process to occur. Table 5, 1.01 should be amended accordingly.





Should you have any queries in relation to this matter please contact me at the Narrabri Mine to discuss. Again, your early advice in relation to the plan will be appreciated.

Yours sincerely

A handwritten signature in blue ink, appearing to read "SF", written over a faint blue line.

Steven Farrar  
Environmental Officer  
Narrabri Mine  
Ref: sf300611\_OEH-LMP



**Steven Farrar**

---

**From:** Turnbull Kharl [Kharl.Turnbull@environment.nsw.gov.au]  
**Sent:** Thursday, 29 September 2011 3:00 PM  
**To:** Steven Farrar  
**Cc:** OHern Robert  
**Subject:** Narrabri Mine Stage 2 Development Consent

Hi Steven

As just discussed, thank you for forwarding the following Management Plans for our records:

Narrabri Mine Stage 2 Energy Savings Action Plan  
Narrabri Mine Stage 2 Landscape Management Plan  
Narrabri Mine Stage 2 Noise Management Plan  
Narrabri Mine Stage 2 Aboriginal Cultural Heritage Management Plan  
Narrabri Mine Stage 2 Air Quality Monitoring Plan  
Narrabri Mine Stage 2 Water Management Plan

The Office of Environment and Heritage (OEH) encourages the development of such plans to ensure that proponents have determined how they will meet their statutory obligations and designated environmental objectives. However, we do not approve or endorse these documents as our role is to set environmental objectives for environmental/conservation management, not to be directly involved in the development of strategies to achieve those objectives.

Should you have any further enquiries please do not hesitate to contact me.

Regards

Kharl Turnbull  
Regional Programs Officer  
Environment Protection and Regulation Group  
Office of Environment and Heritage  
Department of Premier and Cabinet  
PO Box 494 (85 Faulkner St) | Armidale NSW 2350  
Phone (02) 6773 7000 | Fax (02) 6772 2336

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PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

**Division of Resources and Energy (Department of Trade and Investment, Regional Infrastructure and Services)**



OUT15/34336

Mr Howard Reed  
Director Resource Assessments  
Department of Planning & Environment  
GPO Box 39  
SYDNEY NSW 2001

Dear Mr Reed

**Narrabri Mine Longwall 106  
Condition 4(g) Schedule 3 of Narrabri Coal Project Approval (08\_0144)**

Narrabri Mine requires the Division of Resources & Energy's satisfaction consistent with Condition 4(g) of Schedule 3 of Project Approval 08\_0144.

Narrabri Mine submitted the document "Narrabri Mine Extraction Plan LW 101 to LW 106" to the Division of Resources & Energy (DRE) on 19 August 2015. DRE assessed the following plans within that document in relation to Longwall 106 only, as Longwalls 101 to 105 have current Extraction Plan approval:

1. Coal Resource Recovery Plan, Revision C dated June 2015;
2. Subsidence Monitoring Program, Revision G dated June 2015;
3. Built Features Management Plan, Revision F dated June 2015;
4. Public Safety Management Plan, Revision F dated June 2015; and
5. Landscape Management Plan, Version 1 dated 4 August 2015.

DRE consider that the proposed resource recovery is appropriate given the geological and operational constraints of the proposed mining.

Documents 2, 3 & 4 above meet the requirement of Condition 4(g) of Schedule 3 of the Project Approval 08\_0144 subject to the Leaseholder's compliance with Work Health and Safety laws. This letter does not constitute an endorsement of the contents of the Extraction Plan with respect to the abovementioned Work Health & Safety laws.

DRE regulates the rehabilitation of subsidence effects through the mine's Mining Operations Plan (MOP). DRE deem the Narrabri Mine MOP to satisfy appropriate revisions to the Landscape Management Plan required under condition 3 of Schedule 5 of Project Approval 08\_0144. Further, DRE supports a revision of existing vegetation offsetting for the Narrabri Coal Mine should tree deaths occur due to mining within the Inland Grey Box Woodland Endangered Ecological Community.

If you have any further enquiries do not hesitate to contact Mr Paul Langley, Subsidence Executive Officer on (02) 4931 6448.

Yours sincerely

A handwritten signature in blue ink that reads 'K Hargreaves 2.12.15'.

**Kylie Hargreaves  
Deputy Secretary  
Resources & Energy**

GPO Box 5477, Sydney NSW 2001, Australia  
Level 49 MLC Centre, 19 Martin Place, Sydney NSW 2000, Australia.  
Tel: +612 9338 6600 Fax: +612 9338 6860 www.trade.nsw.gov.au ABN: 72 189 919 072



OUT15/23338  
10/9000

Mr Steve Farrar  
Environmental Superintendent  
Narrabri Coal Mine  
Locked Bag 1002  
NARRABRI NSW 2390

Dear Steve,

**Re: Narrabri Underground Coal Mine - LW106 Extraction Plan**

The NSW Department of Industry - Division of Resources and Energy (DRE) acknowledges receipt of the *"Narrabri Mine Extraction Plan Revision to Include LW106"* (EP) on 19 August 2015.

DRE Environmental officers have reviewed the EP and advise that:

- Narrabri Coal Pty Ltd (NCPL) should provide a detailed description of rehabilitation works undertaken in addressing subsidence impacts within Annual Environment Management Reports; and
- Capping of the Reject Emplacement Area (REA) (as part of rehabilitation of this precinct), on completion of reject material placement, must be undertaken in a manner acceptable to DRE.

If you have any queries, please contact the undersigned on 4931 6553.

A handwritten signature in blue ink, appearing to read "John Trotter".

John Trotter  
Inspector Environment  
Environmental Sustainability Unit  
1 September 2015

Resources & Energy – Environmental Sustainability Unit  
PO Box 344 Hunter Region Mail Centre NSW 2310  
516 High St MAITLAND NSW 2320  
Tel: 02 4931 6590 Fax: 02 4931 6790 Web: [www.resourcesandenergy.nsw.gov.au](http://www.resourcesandenergy.nsw.gov.au)  
ABN 72189919072



Narrabri Coal Operations Pty Ltd ABN 15 129 850 139  
10 Kurrajong Creek Road, Baan Baa NSW 2390  
Locked Bag 1002, Narrabri NSW 2390  
Tel: 02 6794 4755 Fax: 02 6794 4753  
www.whitehavencol.com.au

30<sup>th</sup> June 2011

Michael Lloyd  
Department of Primary Industries (DPI)  
PO Box 344  
HUNTER REGION MAIL CENTRE NSW 2310

Dear Michael

**RE: NARRABRI MINE STAGE 2 LANDSCAPE MANAGEMENT PLAN**

I refer to the Narrabri Mine which received project approval from the Minister for Planning as per Development Consent 08\_0144 dated 26<sup>th</sup> July 2010.

Condition 5(3) of the consent is outlined below:

*"The Proponent shall revise the Landscape Management Plan for the Stage 1 project to encompass all proposed mine activities and potential impacts associated with landscape management for the site (Stages 1 and 2) and subsequently implement this revised version of the Landscape Management Plan to the satisfaction of the Director General and I&I NSW. This plan must:*

- (a) be submitted to the Director-General for approval by 30 June 2011;*
- (b) be prepared by suitably qualified expert/s whose appointment/s have been endorsed by the Director-General;*
- (c) be prepared in consultation with NOW, DECCW and NSC; and*
- (d) include a:*
  - Rehabilitation Management Plan; and*
  - Mine Closure Plan."*

Please find enclosed the draft Landscape Management Plan for your review. A copy of the plan has also been referred to the Office of Environment and Heritage (OEH) (formerly DECCW), Narrabri Shire Council (NSC) and the NSW Office of Water (NOW) as required under the consent for their review and comment.

Please review the draft Landscape Management Plan and provide comments and/or advice at your earliest opportunity. In the meantime, Narrabri Mine will liaise with the OEH, NSC and NOW with regard to any required modifications to the plan before submitting written advice of their acceptance of the Plan to the Department of Planning and Infrastructure (DoPI) for formal approval.



Should you have any queries in relation to this matter please contact me at the Narrabri Mine to discuss. Again, your early advice in relation to the plan will be appreciated.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Steven Farrar".

Steven Farrar  
Environmental Officer  
Narrabri Mine  
Ref: sf300811\_DPI-LMP



**Steven Farrar**

---

**From:** Steven Farrar  
**Sent:** Friday, 28 October 2011 7:57 AM  
**To:** 'michael.lloyd@industry.nsw.gov.au'  
**Cc:** Danny Young; Shane Pegg  
**Subject:** RE: Narrabri Mine Stage 2 Landscape Management Plan

Hi Michael,

Will DRE be providing comments on the Narrabri Mine Stage 2 Landscape Management Plan? We are in the process of finalising all management plans and we are aiming to submit the final plans to Department of Planning and Infrastructure by the end of next week.

If you have any questions please don't hesitate to contact me on the numbers below.

Regards,

**Steve Farrar**  
Environmental Officer – Narrabri Mine

Whitehaven Coal Limited  
10 Kurrajong Creek Road, Baan Baa NSW 2390  
Tel: +61 2 6794 4167 Fax: +61 2 6794 4753 Mobile: +61 411 322 146  
Email: [sfarrar@whitehavencoal.com.au](mailto:sfarrar@whitehavencoal.com.au) [www.whitehavencoal.com.au](http://www.whitehavencoal.com.au)



---

**From:** [michael.lloyd@industry.nsw.gov.au](mailto:michael.lloyd@industry.nsw.gov.au) [<mailto:michael.lloyd@industry.nsw.gov.au>]  
**Sent:** Friday, 1 July 2011 12:46 PM  
**To:** Steven Farrar  
**Cc:** Danny Young; Shane Pegg  
**Subject:** Re: Narrabri Mine Stage 2 Landscape Management Plan (Email 1 of 2)

Thank you Steve,  
I will review the documents as soon as i can. There unfortunately is a backlog at the moment though but should get to it in a couple of weeks.

Regards

Michael Lloyd | A/Team Leader - Northern | Environmental Sustainability Branch | Division of Resources & Energy  
Mineral Resources | Trade & Investment, Regional Infrastructure & Services  
516 High Street Maitland NSW 2320 | PO Box 344 | Hunter Region Mail Centre NSW 2310  
T: 02 4931 6576 | F: 02 4931 6790 | M: 0430 598 093 | E: [michael.lloyd@industry.nsw.gov.au](mailto:michael.lloyd@industry.nsw.gov.au)  
W: [www.industry.nsw.gov.au](http://www.industry.nsw.gov.au) | [www.dpi.nsw.gov.au](http://www.dpi.nsw.gov.au)

---

**From:** Steven Farrar <[sfarrar@whitehavencoal.com.au](mailto:sfarrar@whitehavencoal.com.au)>  
**To:** Michael Lloyd <[michael.lloyd@industry.nsw.gov.au](mailto:michael.lloyd@industry.nsw.gov.au)>  
**Cc:** Shane Pegg <[SPegg@whitehavencoal.com.au](mailto:SPegg@whitehavencoal.com.au)>, Danny Young <[DYoung@whitehavencoal.com.au](mailto:DYoung@whitehavencoal.com.au)>  
**Date:** 30/06/2011 05:29 PM  
**Subject:** Narrabri Mine Stage 2 Landscape Management Plan (Email 1 of 2)

---

Hi Michael,

I have recently started at the Narrabri Mine as the fulltime Environmental Officer. As you are probably aware, the existing management plans for the Narrabri Mine are being revised in accordance with the Stage 2 Longwall Project approval (PA 08\_0144).

Please find attached the revised Narrabri Mine Stage 2 Landscape Management Plan for your review and comment (1 of 2 emails as it is a large file). A cover letter is also attached outlining the requirements for the Landscape Management Plan revision. The appointment of Eco Logical Australia Pty Ltd and GSS Environmental was approved by the Director-General of Planning in a letter dated 6 May 2011, attached.

A hard copy will also be forwarded to DPI's Hunter office.

If you have any questions please don't hesitate to contact me on the numbers below.

Regards,

**Steve Farrar**

Environmental Officer – Narrabri Mine

**Whitehaven Coal Limited**

10 Kurrajong Creek Road, Baan Baa NSW 2390

Tel: +61 2 6794 4167 Fax: +61 2 6794 4753 Mobile: +61 411 322 146

Email: [sfarrar@whitehavencoal.com.au](mailto:sfarrar@whitehavencoal.com.au) [www.whitehavencoal.com.au](http://www.whitehavencoal.com.au)



[attachment "DPI LMP submission letter.pdf" deleted by Michael Lloyd/DII/NSW] [attachment "DK\_Approval of Experts for NMP LMP & WMP 060511.pdf" deleted by Michael Lloyd/DII/NSW] [attachment "Narrabri Coal Mine Rehabilitation Managemen Plan Final.pdf" deleted by Michael Lloyd/DII/NSW] [attachment "Narrabri Coal Mine Landscape Managemen Plan Final.pdf" deleted by Michael Lloyd/DII/NSW]

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**DPI Water**



**WHITEHAVEN COAL**

Narrabri Coal Operations Pty Ltd ABN 15 129 850 139  
10 Kurrajong Creek Road, Baan Baa NSW 2390  
Locked Bag 1002, Narrabri NSW 2390  
Tel: 02 6794 4755 Fax: 02 6794 4758  
www.whitehavencoal.com.au

30<sup>th</sup> June 2011

Martin O'Rourke  
NSW Office of Water (NOW)  
PO Box 550  
TAMWORTH NSW 2340

Dear Martin

**RE: NARRABRI MINE STAGE 2 LANDSCAPE MANAGEMENT PLAN**

I refer to the Narrabri Mine which received Development Consent from the Minister for Planning as per Development Consent 08\_0144 dated 26<sup>th</sup> July 2010.

Condition 5(3) of the consent is outlined below:

*"The Proponent shall revise the Landscape Management Plan for the Stage 1 project to encompass all proposed mine activities and potential impacts associated with landscape management for the site (Stages 1 and 2) and subsequently implement this revised version of the Landscape Management Plan to the satisfaction of the Director General and I&I NSW. This plan must:*

- (a) be submitted to the Director-General for approval by 30 June 2011;*
- (b) be prepared by suitably qualified expert/s whose appointment/s have been endorsed by the Director-General;*
- (c) be prepared in consultation with NOW, DECCW and NSC; and*
- (d) include a:*
  - Rehabilitation Management Plan; and*
  - Mine Closure Plan."*

In accordance with Condition 3 above, the draft Landscape Management Plan is enclosed for the review and comment of NOW.

Your early review of the draft plan will be appreciated. Should you have any requests for modification or amendments, please provide such advice at your earliest opportunity. Should the draft plan meet your requirements, please provide such advice in writing to enable Narrabri Mine to refer that advice to the Department of Planning and Infrastructure. This will enable formal approval of the management plan.



Should you have any queries in relation to this matter please contact me at the Narrabri Mine to discuss. Again, your early advice in relation to the plan will be appreciated.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Steven Farrar".

Steven Farrar  
Environmental Officer  
Narrabri Mine  
Ref: sf300611\_NOW-LMP



## Office of Water

Whitehaven Coal  
Locked Bag 1002  
NARRABRI NSW 2390

2 November 2011

c: Brett McCulloch  
t: 02 6676 7381  
f: 02 6676 7388  
e: [brett.mcculloch@water.nsw.gov.au](mailto:brett.mcculloch@water.nsw.gov.au)

Our ref : ER20766  
Your ref: sf300611\_NOW-LMP

**Attention: Steven Farrar**

Dear Mr Farrar

### **PA 08\_0144 – Narrabri Mine Stage 2 Longwall Project - Management Plan Review**

I refer to your letter of 30<sup>th</sup> June 2011 requesting the NSW Office of Water's (NOW) review and comment of the draft Water Management, Rehabilitation Management and Mine Closure Plans. The findings of the review and suggested recommendations, modifications and/or amendments are outlined below in **Attachment A**.

If you require further information please contact Brett McCulloch, A/Planning and Assessment Coordinator on (02) 6676 7381 at the Murwillumbah office.

Yours sincerely

A handwritten signature in blue ink, appearing to read "M. Mignanelli".

**Mark Mignanelli**  
Manager Major Projects and Assessment

## Attachment A

## PA 08\_0144 – Narrabri Mine Stage 2 Longwall Project - Management Plan Review

## 1. Site Water Balance - Schedule 4 (14)

*(a) Water licensing legislation and policy requirements for project site*

The project site is located on Lots 151 and 152 DP816020, Lots 60 and 115 DP757124 and Lots 381 and 382 DP10228753 as indicated in s.1.1 of the Water Management Plan (WMP) (Attachment B). The land area within the mine site boundary (Attachment B) is subject to a groundwater embargo under s.113A of the *Water Act 1912* (WA) (NSW Government Gazette No.159A, 22 December 2008, pg 12947). In addition, the mine site area is subject to a surface water embargo under s.22BA of WA (NSW Government Gazette No. 35, 17 March 2006, pg 1420). The project site will be under the proposed Water Sharing Plan (WSP) for the Namoi Unregulated and Alluvial water sources which is still under development. Further, the area will be subject to the proposed WSP that will cover the groundwater management area Gunnedah Basin (Porous Rock). On the western side of the mine site, the project site boundary is partly within the *WSPs for the NSW Great Artesian Basin Groundwater Source 2008*. The eastern mine boundary is 1.5 km from the western boundary of the *Upper and Lower Namoi Groundwater Sources 2006* (Attachment B). The watercourses within the project site are tributaries of the Namoi River and the eastern boundary of the property is approximately 4 km from the Namoi River which is under the *WSP for the Upper Namoi and Lower Namoi Regulated River Water Sources 2003*.

The proponent must be aware of the following NSW Government water legislation, policy and licensing requirements. All works that intercept groundwater for monitoring, dewatering and test purposes are authorised under Part 5 of the *Water Act 1912* (WA) until such time the *NSW Government Aquifer Interference Policy* has been finalised and s.91(3) of the WMA is enacted. The proponent must comply with the harvestable rights orders under Chapter 3, Part 1, div.2, s.54 of WMA with respect to the construction or use of a dam on land within the harvestable rights area constituted by the order. Any dams used solely for the purposes of capture, containment and recirculation of drainage and/or effluent, surface water erosion and sediment controls are defined as a "excluded work" under the WMA and are exempt from the requirement for an access licence under the *Water Management (General) Regulation 2011* (WMR) (Part 2, div.2, cl.18), water use approval (Part 3, sub div.2, cl.31) and a water supply work approval (Part 3, sub div.3, cl.36). In addition, activities in accordance with the harvestable right order in connection with the construction and use of the dam/s on land within the harvestable rights area are exempt from requirement of a control activity approval (Schedule 5, Part 2, 20, WMR). The "excluded work" must be constructed on a minor stream (i.e. < 3<sup>rd</sup> order) under Chapter 3, Part 1, s.53(1)(b) of the WMA or off-river. Notwithstanding the above, an exemption for the requirement for a water management work and use approvals under the *Water Management Act 2000* (WMA) (Chapter 3, Part 3, div.2, s.92) exists for Part 3A Major Projects under s.75U of *Environmental Planning and Assessment Act 1979* (EP&AA), but an access licence is still required (Chapter 3, Part 2, div.2, s.61, WMA). However, for the majority of the land area covered by the mine site boundary (Attachment B) the licensing requirements are governed by the WA until such time the proposed WSPs for surface and groundwater sources have commenced.

The proponent holds access licences and/or water supply work approvals for the take of water, which are governed by the rules of the WSPs mentioned above and may be used as an external water source for the project as shown in Attachment C. A new water supply work approval will be required only if there are changes to the authorised works (e.g. increase in the number or capacity of pumps). It is optional to amend the existing combined approvals (i.e. water supply works and use approvals) to include an additional purpose such as mining. No water supply work approval is required for the construction of a water pipe for use solely for conveying water from one place to another (e.g. between the mine site and the Namoi River) (Part 3, sub div.3, cl.34, WMR) and water use approval (Part 3, sub div.3, cl.35, WMR). Nevertheless, it is recommended the proponent contact NOW's Licensing Branch at the Tamworth office on (02) 6701 9600 to discuss any licensing arrangements that may be required and also State Water in Dubbo on 1300 662 077 following the issue of any new or amended water supply works approvals that affect the proponent's associated water access licenses in the *WSP for the Upper Namoi and Lower Namoi Regulated River Water Sources*.

*(b) Sources and security of water supply*

Table 5-1 of the WMP summarises the annual site water requirements for the Stage 2 Narrabri Coal Mine based on the water demand for longwall coal production from August 2011 for various purposes and life stages. The proposed purpose of water use are dust suppression (surface & underground), surface coal processing, potable use and estimates on water that will be recycled industrially and underground. Section 5.2.1 of the WMP discusses the various sources of water which include: pumped out mine water, Namoi River, groundwater (Namoi River sand beds), mine site runoff/direct rainfall and underground recycle. The following requirements, modifications and amendments are recommended by NOW according to NSW Government legislation (WA and WMA), embargo orders, WSPs and relevant policies.

*(i) Water balance modelling*

Section 5.3 of the WMP states: *"water balance modelling indicates that the onsite water requirements, given in Table 5-1, would exceed the water that could be collected on-site and dewatered from the underground during the first 10 years of mining. During these years the excess demand will be met from the offsite supplies and therefore offsite transfers of water are not proposed at this stage"*. This is confusing as based on the figures in Tables 5-1 (i.e. annual mine site water requirement of 346 ML in yr 2) and 5-3 and rainfall runoff estimates in Section 5.2.5 (approximately 71 ML/yr on average) there should be enough onsite water for all water requirements by year 4 (337 ML/yr predicted groundwater inflows). If this is correct then offsite transfers will commence before year 10.

*(ii) Water Allocations*

Attachment C shows the licences that pertain to the mine site boundary (Attachment B) and other licences held by the proponent which are also mentioned in Table 5-2 of WMP. Following the review of NOW's internal and NSW Government Land and Property Information (LPI) databases it was apparent that (Attachment C):

1. WAL7411 has been cancelled and subdivided (Table 5-2). The WAL held by Narrabri Coal Operations Pty Ltd (NCOPL) is WAL20152 (Attachment C).
2. The approval 90CA807192, access licence 90AL807191 and WAL14515 are not held in the name of NCOPL. Further, the access licence is categorised as



supplementary water and as such the access rights are subject to rules relating to that category under the *WSP for the Upper and Lower Namoi Groundwater Sources 2006*.

3. The combined approval 90CA807277 that is attached to 90AL807276 and WAL12833 is not held in NCOPL. The proponent must attach the access licence to a water supply work approval held in their name and detach from combined approval 90CA807277.
4. As indicated in the comments column of Attachment C a number of licences must be transferred to NCOPL or decommissioned. In the cases where NCOPL are not the owner of the land proof of occupancy must be supplied (e.g. a mining lease that covers the land over the site of the bore).
5. NCOPL must submit to NOW Licensing Branch a number of Form "A"s as indicated in Attachment C.
6. The WAL6762 and WAL20131 (Attachment C) have been excluded from Table 5-2 of WMP.

NOW advises the proponent address the issues raised 1 to 6 above with NOW's Licensing Branch located at the Tamworth office.

As shown in Attachment C the available water from external sources amounts to 1146 ML not 1123 ML as indicated in Table 5-2 (pg 37) of WMP. Furthermore, the combined approval (90CA802130) held by the proponent is also linked to a number of access licenses and WALs. The proponent needs to clarify which water supply work approvals are proposed to be used and the associated access licences and WALs from all offsite allocations including the relevant water source and WSP.

In s.5.1 of the WMP it is mentioned that a true indication of water requirements will not be apparent until the first 12 months of production, which will enable a more rigorous assessment of water use against predictions. The proponent must contact NOW's Licensing Branch at the Tamworth office if there are changes to water demands that result in the increase in water usage onsite or require more access from external sources.

In s.5.2.4 on pg 38 of the WMP it is stated: *"gas extraction from above the coal seam is currently underway. Groundwater from Gas extraction from the above coal seam has been recorded as on site as approximately 100 ML/year. This is a component of the total groundwater inflows estimated above."* Although, the 100 ML pumped is considered to be part of the licence 90BL254679, licence 90BL254679 has property account 90PT982814 associated with it. 90BL254679 is for the excavation and groundwater pumped from the excavation. Each bore that is extracting groundwater as part of the gas extraction will have to be licensed as well and tied into property account 90PT982814.

*(iii) Mine inflow rates and dewatering activity*

The licence 90BL246067 authorises an excavation for mining purposes with an entitlement of 818 ML (Attachment C). Table 5-3 in the WMP shows a maximum predicted mine in-flow of 1419 ML/annum by year 18 of production. This exceeds the volumetric entitlement authorised on-site by 601 ML/annum. Condition 4 of the licence states *"the final entitlement will be determined by modelling exercise above but it will not exceed 818 ML"*. Therefore, the proponent will be required to transfer groundwater entitlement to the project site to meet the estimated in-flow rates in year 18 in accordance with the trading rules of the affected proposed WSPs for the area. Further, the existing groundwater embargo does not exempt the proponent to make application under Part 5 of WA to cater

for any increases in entitlement. However, an existing groundwater entitlement must be purchased on the water market and transferred to the property. Any water trade is not guaranteed and will require an assessment by NOW prior to approval.

The WMP purports that due to the poor water quality in some geological formations intersected in stage 1 of mining, the pumped out mine water will be limited to surface dust suppression and coal processing or mixed with clean water for use underground. There is mention that groundwater of better water quality may be used from west of the site. The proponent will require an access licence from the affected water source; however, it is unclear where the extraction will occur and from what water source. The proponent must indicate which water source will be accessed, as the affected water source may be covered by either the proposed WSPs for the Namoi Unregulated and Alluvial and the Gunnedah Basin (Porous Rock) or the Great Artesian Basin.

The proponent must ensure groundwater pumped out of the mine is monitored during mining operations to refine in-flow rates, water quality and quantity (connected aquifer draw down levels). The groundwater monitoring plan should be in accordance with Condition 11 "Groundwater Monitoring Plan" of the 90BL254679. In addition, it is recommended that additional monitoring bores are installed to the east of the mine site to determine the level of hydrogeological link between the Namoi Alluvium and Gunnedah Basin formations.

*(iv) Runoff management on Mine Site*

The WMP predicts that water storage dams and sediment basins may harvest 71 ML/annum on average from the Pit Top Area and that priority will be given to utilising mine site runoff for dust suppression and underground mining use. Dams that are solely used for the capture, containment and recirculation of drainage and/or effluent and used for control and prevention of soil erosion do not require a licence under the WA and a water supply work and use approval under the WMA when the relevant WSPs commence. The use of water for dust suppression and the taking of water from or by means of an "excluded work" will be exempt from the requirement for an access licence. The proponent must ensure that when exercising the exemption for "excluded works" that the water captured in the dams are draining contaminated sites or otherwise the provisions of the farm dam policy will apply with respect to the construction and use of farm dams and utilisation of the maximum harvestable rights dam capacity (MHRDC) for the property. For example, any dams that are not draining contaminated sites or are not used solely for sediment and erosion control that are within the harvestable rights area will require a licence under the WA or access licence under the WMA (i.e. mining/industrial use) if they exceed the MHRDC for the property.

The dams that are defined as an "excluded work" are not considered in the calculation which derives the total volume of existing storages within the harvestable rights area. The proponent can utilise the MHRDC for the project site from dams proposed or constructed that are not defined "excluded works" to the capacity derived from the MHRDC for the property and use such dams for any purpose without the requirement for a licence.

*(v) Use of off-site water allocations*

It is noted that the on-site water requirements will exceed the water that can be collected on-site and dewatered from the underground during the first 10 years. It is proposed that the difference will be met from offsite water allocations as shown in Attachment C.

However, currently the proponent proposes to use 925 ML from external sources. As mentioned above the proponent is required to address the issues in Attachment C and must clarify and inform NOW all approvals, access licences and WALs proposed to be used from external sources for the project.

*(vi) Reporting Procedures*

The reporting procedures as expressed in s.5.4 of WMP are to the satisfaction of NOW.

**2. Erosion and Sediment Control - Schedule 4 (15)**

It is stated in s.4 (pg 30) of WMP that the erosion and sediment control plan that was developed for the construction phase of the project is consistent with the Blue Book - *Managing Urban Stormwater: Soils and Construction, Volume 1, 4<sup>th</sup> Edition, 2004* (Landcom) ("blue book"), which was approved by the Director General. For stage 2 of the mining operation the proponent considers that the existing erosion and sediment control plan will not be altered.

Following the review of s.4 of the WMP, NOW is of the opinion that the erosion and sediment control provisions (a) to (e) in Schedule 4 (15) of the Project Approval have been addressed satisfactorily. NOW recommends any proposed or amended erosion and sediment controls structures must be consistent with the requirements of the "blue book". In addition, the construction of sediment dams must be in accordance with the Harvestable Rights policy and related sections under the WMA. NOW requires that all structural works including works for stormwater capture and treatment are to be located outside any riparian buffers; however, consideration may be given to the construction of on-line works on minor streams with adequate justification.

Any stormwater management plan for the site must maintain environmental flows and inundation patterns in any affected watercourses so that post development flow match or better pre-development flows.

**3. Surface Water Monitoring Program - Schedule 4 (16)**

NOW endorses the surface water monitoring plan but further enhancements and recommendations need to be addressed by the proponent. The proponent must develop an extensive surface water monitoring plan to the satisfaction of NOW prior to the commencement, during and for an appropriate period following the finalisation of longwall mining. The monitoring program must monitor the potential impacts of the proposal on watercourses within and adjacent (upstream and downstream) of the mine site. In particular, NOW has concerns with respect to the impacts of the mine on the hydrological regime and geomorphology of streams adjacent and within the project site. NOW insists that the monitoring plan must be adequate and implemented prior to longwall mining and address the following issues on affected watercourses: loss of baseflows, changes to stream slope or gradients, channel diversion and redirection of streamflow.

NOW recommends baseline monitoring at a frequency of fortnightly sampling within and adjacent to the development site to a standard satisfactory of the Office of Environment and Heritage (OoEH) and NOW from both affected streams and storages. NOW recommends that the water quality standards are compared against thresholds outlined in Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ 2000) and that the appropriate physical and chemical parameters

The procedures for reporting and contingency measures for any exceedance of physical and chemical parameters outlined in s.6.6 of WMP are considered by NOW as satisfactory.

It is noted in Schedule 4 (13) of the Project Approval that *The Raffinate Discharge and Transfer Control and Monitoring Plan does not need to be produced and approved until 3 months prior to the planned discharge or transfer of raffinate from the site.* The proponent must contact NOW on completion of the draft plan and forward the document for review.

## 5. Groundwater Monitoring Program – Schedule 4 (18)

As acknowledged by the proponent in the WMP, NOW has previously recommended the installation of additional monitoring bores to further establish the hydrogeological link between the Namoi Alluvium and the Gunnedah Basin and any impacts on the Great

Artesian Basin. Furthermore, NOW stresses the necessity for baseline monitoring at a preferred frequency of fortnightly sampling of groundwater quantity and quality for all aquifers within and adjacent to the development site, which in most cases is contrary to the monitoring schedule in s.7.4 (pg 54) of the WMP. However, NOW acknowledges and supports the proponent's plan to review after the first two years of operation, the frequency of monitoring and the range of parameters analysed.

The WMP (s.7.2, pg 47) mentions a number of monitoring bores that are proposed to be utilised or installed. For example, s.7.3.1 of WMP mentions 25 standpipe bores, 7 vibrating wire bores and 11 registered bores are used to assess groundwater levels/pressure, while the standpipes are also used for sampling for groundwater quality. The proponent must ensure that all monitoring bores have been licensed accordingly and that access and landholder's consents have been granted if bore locations are offsite. Attachment B and C show the licensed bores on the project site. The proponent must contact the Licensing Branch at the Tamworth office of NOW if further information is required regarding licensing unauthorised bores or amendment to existing bore licenses.

NOW's preferred outcome is that no induced hydraulic coupling occurs between the underlying hard rock and the Namoi River Alluvium (i.e. drainage of alluvium) as a result of underground mining operations and subsequent subsidence impacts. The WMP suggest that the proponent will incorporate a more comprehensive monitoring program to assess subsidence impacts from the longwall mining operation as they develop. In addition to the proposed multi-level vibrating wire piezometers and extensometers, NOW endorses the implementation of engineering structures (e.g. impermeable cut-off structures) designed and implemented to the applicants cost and to the satisfaction of NOW. The proponent will require a licence for any unforeseen drawdown resulting from groundwater pumping at the mine site or subsidence impacts causing the displacement of the Namoi Alluvial waters. The licensed volumetric entitlement is to be equivalent to the volume of the groundwater affected.

The proponent indicates in s.7.4 of the WMP that the integrity of the low permeability of lining of the storage ponds will be assessed by bores in the area around the rail loop bordering the ponds to ensure the ponds are preventing any release of brine to any ground or surface water sources that may be affected. NOW finds the program to monitor, detect and quantify any leakage/leachate from the site's evaporation/storage ponds is satisfactory. NOW advocates that the proposed additional groundwater monitoring points are implemented prior to planning and construction of the additional brine storage/evaporation ponds. Further, as part of the Statement of Conditions (SoC), the proponent must ensure a program is in place to monitor the coal reject emplacement area as specified in SoC 3.11 and 3.17.

NOW is satisfied the proponent has addressed adequately the procedures for reporting the results of parameters measured, frequency of monitoring and groundwater modelling, including an organised internal approach to data management and monitoring documentation, which will identify potential issues and provide a path to appropriate contingency actions if required. NOW supports the commissioning of an experienced hydrogeologist to oversee and review monitoring data and groundwater modelling.

Notwithstanding the above considerations and recommendations, NOW advises the proponent meet with hydrogeologist Martin O'Rourke from the Tamworth office and representatives from the Major Projects and Assessment Unit of NOW to discuss the

following pertinent issues and concerns with respect to the groundwater monitoring program presented in the WMP:

1. Table 7-1 was revised on the 30 June 2011 but the water levels are for September 2008. More up to date results should be presented in the plan.
2. The list of bores in Table 7-1 is the same as a list that was provided to NOW on the 28 May 2010 after discussions with NCOPL on its monitoring bore network at the time. It was advised to NCOPL in the above discussions that the monitoring bore network was inadequate in that there were no monitoring bores between the mine and the Namoi Alluvium, and bores to the full depth of the mine on the western side with screens in all aquifers. Therefore, NOW considers the WMP has not addressed the inadequacies of the monitoring bore network that was highlighted to NCOPL over 12 months ago.
3. Section 7.4 (pg 54) discusses a lot about what NCOPL proposes to do with respect to the monitoring schedule but fails to present the groundwater data that has already been gathered since the commencement of the project. NOW would like to discuss and peruse all parameter that have already been gathered including the reporting and peer review process.
4. Section 8.2 (pg 65) mentions reporting to OoEH and DoPI, but NOW recommends they also be included in the reporting procedure.
5. The Trigger column shown in Table 8-1 (pg 67) mentions *Alluvium/Colluvium Piezometers*. NOW would like to discuss how NCOPL intend to distinguish between the impacts of mining activity and neighbouring irrigators on NOW monitoring bores.

## 6. Landscape Management Plan – Schedule 5 (3)

### (a) Rehabilitation Management Plan (RMP) – Schedule 5 (4)

The RMP plan has been reviewed and NOW considers the plan adequately addresses the specific criteria outlined in Schedule 5 (4a-h) of the Project Approval. The proponent has included in the RMP the short and long-term rehabilitation objectives for the site. NOW endorses the primary aim of the RMP which is to direct ongoing activities that will create a final landform that is similar to the pre-mining landscape. The proponent has followed the NSW Minerals Council Ltd (2007) and the Australian and New Zealand Minerals Energy Council (2000) in the development of the RMP. The proponent has also cross-referenced between various management plans when there has been mention of proposed remediation or rehabilitation measures included in those plans.

### (b) Mine Closure Plan (MCP) – Schedule 5 (5)

NOW considers the proponent has prepared a MCP that addresses satisfactorily most of the criteria specified in Schedule 5 (5a-f) of the Project Approval. In particular, NOW considers that the MCP has adequately addressed the decommissioning of the following water management structures:

- Namoi River water pipeline (s.5.1.1, MCP);
- surface water diversions, water storage, erosion and sediment control dams (s.5.1.4, MCP);

- water conditioning plant, pumping and reticulation infrastructure (s.5.1.4, MCP);
- exploration bores, piezometers and miscellaneous dams (s.5.1.6, MCP); and
- subsidence areas and environmental monitoring locations (s.5.1.6, MCP).

In s.5.1.4 and 5.1.5 of the MCP the decommissioning of the brine storage dams and evaporation ponds are discussed with respect to the disposal of brine and/or accumulated salts. In past correspondence NOW has expressed concerns regarding the uncertainties surrounding the effects of reinjecting brine and salt into the goaf areas. It is recommended that the process of reinjection of the brine is reassessed as part of the groundwater model review in the third year from the date of mine commencement based on knowledge of brine quality from actual mine operations. This will ensure that there is a minimal impact from the brine disposal on surrounding aquifers.

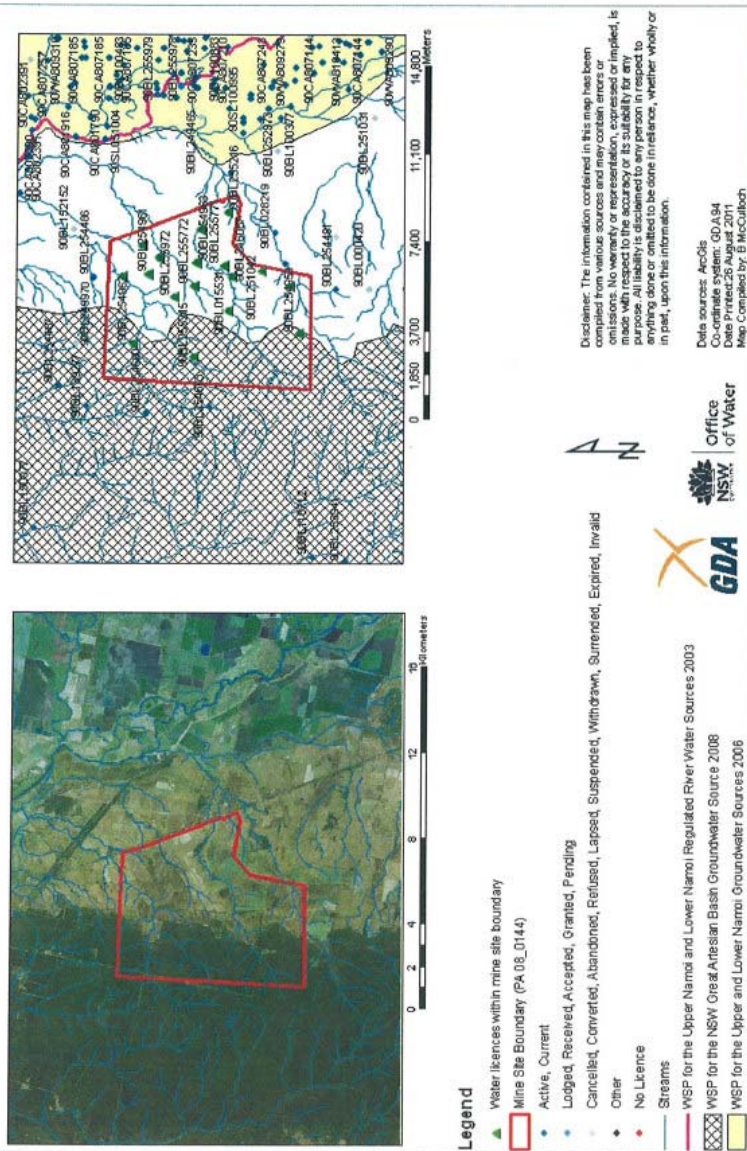
NOW is satisfied with the proposed strategy for water management in rehabilitation areas and encourages all water management structures to be designed and constructed in accordance with the "blue book" as specified in s.6.2 of MCP. Furthermore, NOW endorses the continual monitoring, review and amendment of the MCP over the life of the mine and at cessation and post closure in accordance with Department of Trade and Investment, Regional Infrastructure and Services – Mineral Resources guidelines for Mining, Rehabilitation and Environmental Management.

**End of Attachment A**



Attachment B: Mine site and water sharing plan boundaries and water licences.

### Narrabri Mine Stage 2 PA 08\_0144



End of Attachment B

## Attachment C

**Attachment C:** Licences and approvals that pertain to the mine site boundary and other access licences and approvals held by the proponent from external sources.

Licence and/or Approvals	WAL and/or GW	Volume (ML)	Purpose or Access Licence Category	Work	Holder	WSP	Comment
90BL254963	GW968640	0	Monitoring	Bore	<sup>\$</sup> NCOPL	#4	
90BL255218		0	Monitoring	Bore	NCOPL	4	Form "A" submitted not processed
90BL255216		0	Monitoring	Bore	NCOPL	4	Form "A" submitted not processed
90BL255771		0	Monitoring	Bore	NCOPL	4	Form "A" submitted not processed
90BL254224	GW968641	0	Monitoring	Bore	<sup>\$</sup> WHCL	4	
90BL254225	GW968642	0	Monitoring	Bore	WHCL	4	
90BL254482	GW968436	0	Monitoring	Bore	NCOPL	4	
90BL254658	GW968633	0	Monitoring	Bore	A Grumley	*1	Bore licence should be transferred into the proponent's name.
90BL254659	GW968635	0	Monitoring	Bore	NCOPL	4	
90BL254661	GW968637	0	Monitoring	Bore	A.F Day	4	Bore licence should be transferred into the proponent's name.
90BL254662	No Form A	0	Monitoring	Bore	NCOPL	4	NCOPL must submit Form "A" if bore has been drilled
90BL254958	GW968632	0	Monitoring	Bore	NCOPL	4	
90BL254959	GW968634	0	Monitoring	Bore	NCOPL	1	
90BL254960	GW968636	0	Monitoring	Bore	NCOPL	4	
90BL254961	GW968638	0	Monitoring	Bore	NCOPL	4	
90BL254962	GW968639	0	Monitoring	Bore	NCOPL	1	
90BL254963	GW968640	0	Monitoring	Bore	NCOPL	4	
90BL254964	GW968643	0	Monitoring	Bore	NCOPL	4	
90BL254965	GW969508	0	Monitoring	Bore	NCOPL	4	
90BL254966	GW969509	0	Monitoring	Bore	NCOPL	4	
90BL254967	GW969510	0	Monitoring	Bore	NCOPL	4	
90BL255167	GW969661	0	Monitoring	Bore	NCOPL	4	
90BL255168		0	Monitoring	Bore	NCOPL	4	Form "A" submitted not processed
90BL255169		0	Monitoring	Bore	NCOPL	4	Form "A" submitted not processed
90BL255170	GW969662	0	Monitoring	Bore	NCOPL	4	
90BL255171	GW969635	0	Monitoring	Bore	NCOPL	4	
90BL255172		0	Monitoring	Bore	NCOPL	4	Form "A" submitted not processed

## Attachment C continued

90BL255173		0	Monitoring	Bore	NCOPL	4	Form "A" submitted not processed
90BL255217	No Form A	0	Monitoring	Bore	NCOPL	4	NCOPL must submit Form "A" if bore has been drilled
90BL255769	No Form A	0	Monitoring	Bore	NCOPL	4	NCOPL must submit Form "A" if bore has been drilled
90BL255770	No Form A	0	Monitoring	Bore	NCOPL	4	NCOPL must submit Form "A" if bore has been drilled
90BL255772		0	Monitoring	Bore	NCOPL	4	Form "A" submitted not processed
90BL254961	GW968638	0	Monitoring	Bore	NCOPL	4	
90BL028774	GW038662	0	Ground Water exploration	Bore	MINIMP Pty Ltd	4	Exploration licence should be cancelled or transferred into the proponent's name. Lease or other proof of occupation must be shown for Lot 841 DP1134385.
90BL246067	GW966836	0	Stock & Domestic	Bore	J.I. Macleod	4	Licence needs to be transferred to NCOPL or decommissioned
90BL015531	GW022595	0	Stock & Domestic	Bore	C. Lennox	4	Licence needs to be transferred to NCOPL or decommissioned
90BL100778	GW043315	0	Stock & Domestic	Bore	C.R. Bartusch	4	Licence needs to be transferred to NCOPL or decommissioned
90BL102002	GW045715	0	Stock & Domestic	Bore	I.G. & B.O. Scott	4	Bore licence should be transferred into the proponent's name based on proof of occupancy.
90BL246067	GW966836	0	Stock & Domestic	Bore	J.I. Macleod	4	Licence needs to be transferred to NCOPL or decommissioned
90BL008641	GW017215	0	Stock	Bore	C.R. McWilliams	4	Bore licence should be transferred into the proponent's name based on proof of occupancy.

## Attachment C continued

							Licence needs to be transferred to NCOPL or decommissioned. Must submit Form "A" if bore has been drilled
90BL252636	No Form A	0	Stock	Bore	A. Grumley	4	
90BL254701	GW969642	0	Test Bore	Bore	NCOPL		
							NCOPL must submit Form "A" if bore has been drilled
90BL255215	No Form A	0	Test Bore	Bore	NCOPL	1	
90BL254679		818	Mining	Excavation	NCOPL	4	
90AL811346, 90CA811347	WAL15922 & GW062433	248	Aquifer	Bore	NCOPL	1	Optional to amend combined approval to include mining
90AL801995, 90CA802130	WAL2671	48	Regulated River (General Security)	200 & 80 mm centrifugal pump	NCOPL	^2	Optional to amend combined approval to include mining.
90AL802129, 90CA802130	WAL6762	20	Regulated River (High Security)	200 & 80 mm centrifugal pump	NCOPL	2	Not on Table 5-2
90AL812863, 90CA802130	WAL20152	600	Regulated River (General Security)	200 & 80 mm centrifugal pump	NCOPL	2	WAL7411 has been cancelled and subdivided. The relevant WAL number is WAL20152.
90AL802212, 90CA802130	WAL2728	10	Regulated River (General Security)	200 & 80 mm centrifugal pumps	NCOPL	2	
90AL807191, 90CA807192	WAL14515, GW901842 & GW901410	3	Supplementary Water	2 x Bores	Graham Patrick Clarke	@3	The approval, access licence and WAL not held in NCOPL. The category of access licence is Supplementary Water
90AL812858, 90WA812891	WAL20131 & GW969667	150	Aquifer	Bore	NCOPL	3	Not on Table 5-2
90AL807276, 90CA807277	WAL12833 & GW066215	67	Aquifer	Bore	NCOPL	3	90CA807277 is held by Brian Leslie Brown; however, 90AL807276 and WAL12833 area held by NCOLP.

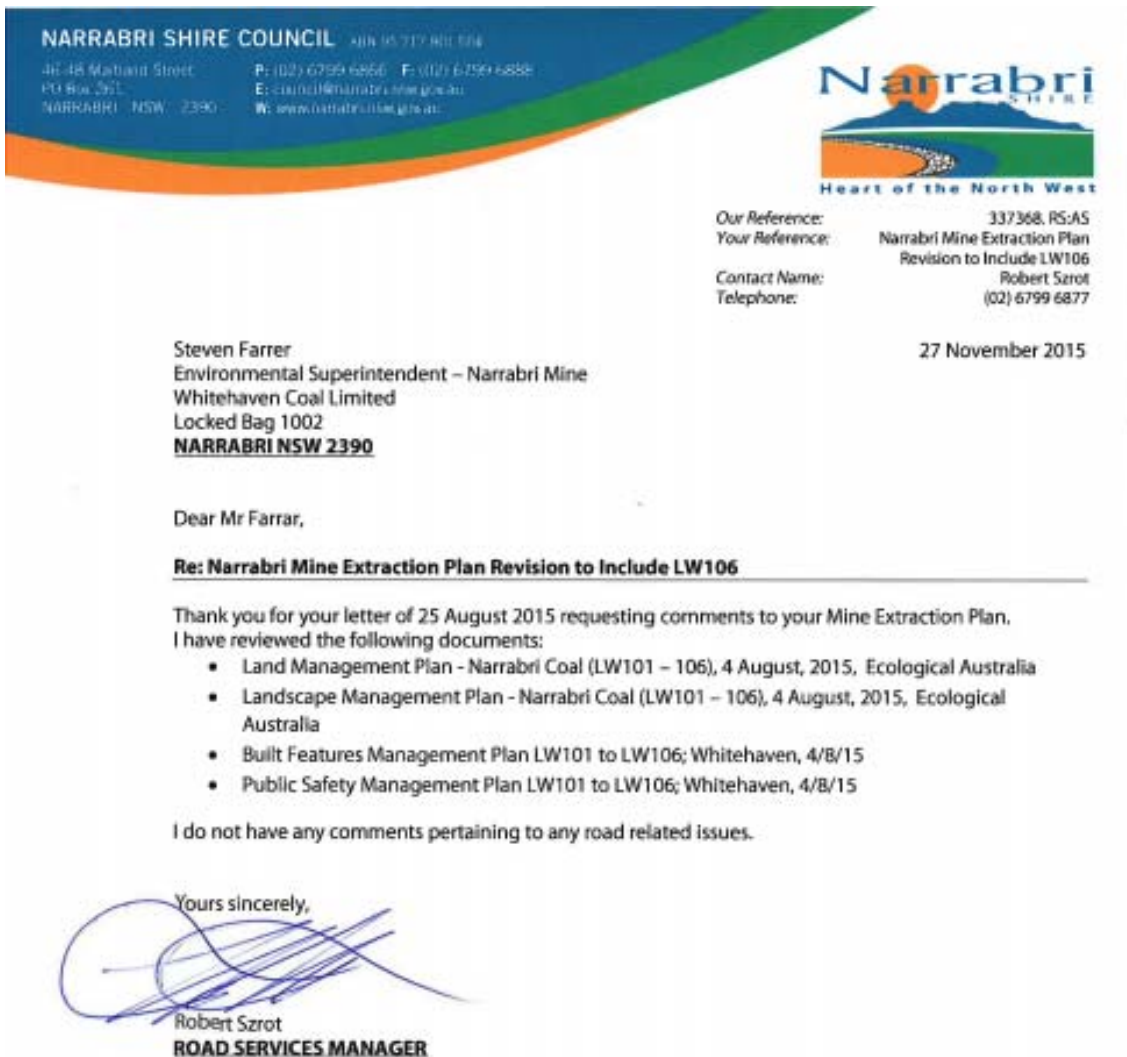


- \*1. WSP for the NSW Great Artesian Basin Groundwater Source 2008  
^2. WSP for the Upper Namoi and Lower Namoi Regulated River Water Sources  
@3. WSP for the Upper and Lower Namoi Groundwater Sources 2006  
#4. Not in WSP area.  
\$NCOPL – Narrabri Coal Operations Pty Limited or Narrabri Coal Pty Limited  
\$WCML – Whitehaven Coal Mining Limited  
Red – External sources of water

**End of Attachment C**

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**Narrabri Shire Council**







WHITEHAVEN COAL

Narrabri Coal Operations Pty Ltd ABN 15 129 850 139  
10 Kurrabung Creek Road, Bean Baa NSW 2390  
Locked Bag 1002, Narrabri NSW 2390  
Tel: 02 6794 4755 Fax: 02 6794 4753  
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30<sup>th</sup> June 2011

Phil Marshall  
General Manager  
Narrabri Shire Council (NSC)  
PO Box 261  
NARRABRI NSW 2390

Dear Phil

**RE: NARRABRI MINE STAGE 2 LANDSCAPE MANAGEMENT PLAN**

I refer to the Narrabri Mine which received Development Consent from the Minister for Planning as per Development Consent 08\_0144 dated 26<sup>th</sup> July 2010.

Condition 5(3) of the consent is outlined below:

*"The Proponent shall revise the Landscape Management Plan for the Stage 1 project to encompass all proposed mine activities and potential impacts associated with landscape management for the site (Stages 1 and 2) and subsequently implement this revised version of the Landscape Management Plan to the satisfaction of the Director General and I&I NSW. This plan must:*

- (a) be submitted to the Director-General for approval by 30 June 2011;*
- (b) be prepared by suitably qualified expert/s whose appointment/s have been endorsed by the Director-General;*
- (c) be prepared in consultation with NOW, DECCW and NSC; and*
- (d) include a:*
  - Rehabilitation Management Plan; and*
  - Mine Closure Plan."*

In accordance with Condition 3(c) above, the draft Landscape Management Plan is enclosed for the review and comment of OEH.

Your early review of the draft plan will be appreciated. Should you have any requests for modification or amendments please provide such advice at your earliest opportunity. Should the draft plan meet your requirements, please provide such advice in writing to enable Narrabri Mine to refer that advice to the Department of Planning and Infrastructure. This will enable formal approval of the management plan.



Should you have any queries in relation to this matter please contact me at the Narrabri Mine to discuss. Again, your early advice in relation to the plan will be appreciated.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Steven Farrar".

Steven Farrar  
Environmental Officer  
Narrabri Mine  
Ref: sf300611\_NSC-LMP

**Steven Farrar**

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**From:** Steven Farrar  
**Sent:** Monday, 31 October 2011 9:53 AM  
**To:** 'council@narrabri.nsw.gov.au'  
**Cc:** Shane Pegg; Danny Young  
**Subject:** Narrabri Mine Stage 2 Landscape Management Plan

Hi Nick,

As required by the Narrabri Mine Stage 2 Project Approval, Narrabri Mine submitted a revised version of the Landscape Management Plan (includes Rehabilitation and Mine Closure Plans) to Council by post on 30 June 2011.

Will Council be providing comments on the above mentioned management plan as we are in the process of finalising all management plans and are aiming to submit the final plans to Department of Planning and Infrastructure by the end of this week.

If you have any questions please don't hesitate to contact me on the numbers below.

Regards,

**Steve Farrar**  
Environmental Officer – Narrabri Mine

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## Appendix D Rehabilitation Management Plan

## Appendix E Mine Closure Plan

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