

# Appendices

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# Appendix 1

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Application for Project Approval



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## Major project application



NSW GOVERNMENT  
Department of Planning

Date duly made: \_\_\_\_/\_\_\_\_/\_\_\_\_

Project application no. \_\_\_\_\_

### 1. Before you lodge

This form is required to apply for the approval of the Minister to carry out a project to which Part 3A of the *Environmental Planning and Assessment Act 1979* (the Act) applies.

Before lodging this application, it is recommended that you first consult with the Department of Planning (the Department) concerning your project.

A Planning Focus Meeting may need to be held for this project involving the Department, relevant agencies, council or other groups identified by the Department. If a Planning Focus Meeting is held, the Department will issue the Director-General's requirements for the Environmental Assessment following the meeting.

#### Disclosure statement

Persons lodging applications are required to declare reportable political donations (including donations of or more than \$1,000) made in the previous two years.

For more details, including a disclosure form, go to [www.planning.nsw.gov.au/donations](http://www.planning.nsw.gov.au/donations).

#### Lodgement

All applications must be lodged with the Director-General of the Department of Planning, by courier or mail. An electronic copy should also be emailed to the assessment contact officer assigned to the project.

NSW Department of Planning  
Ground floor, 23–33 Bridge Street, Sydney NSW 2000  
GPO Box 39 Sydney NSW 2001  
Phone 1300 305 695.

### 2. Details of the proponent

Company/organisation/agency		ABN	
<input type="text" value="Narrabri Coal Operations Pty Ltd"/>		<input type="text" value="15 129 850 139"/>	
<input checked="" type="checkbox"/> Mr <input type="checkbox"/> Ms <input type="checkbox"/> Mrs <input type="checkbox"/> Dr <input type="checkbox"/> Other <input type="text"/>			
First name		Family name	
<input type="text" value="Tony"/>		<input type="text" value="Haggarty"/>	
Position			
<input type="text" value="Managing Director"/>			
STREET ADDRESS			
Unit/street no.	Street name		
<input type="text" value="Level 9, 1"/>	<input type="text" value="York Street"/>		
Suburb or town	State	Postcode	
<input type="text" value="Sydney"/>	<input type="text" value="NSW"/>	<input type="text" value="2000"/>	
POSTAL ADDRESS (or mark 'as above')			
<input type="text" value="PO Box R1113"/>			
Suburb or town	State	Postcode	
<input type="text" value="Royal Exchange"/>	<input type="text" value="NSW"/>	<input type="text" value="1225"/>	
Daytime telephone	Fax	Mobile	
<input type="text" value="02 8507 9700"/>	<input type="text" value="02 8507 9701"/>	<input type="text" value="0417 290 951"/>	
Email			
<input type="text" value="adavies@whitehaven.net.au"/>			



### 3. Identify the land you propose to develop

STREET ADDRESS (where relevant)

Unit/street no.

Street or property name

Kurrajong Creek Road

Suburb, town or locality

Postcode

Baan Baa

2390

Local government area(s)

State electorate(s)

Narrabri

Barwon

REAL PROPERTY DESCRIPTION

See Annexure 1

Note: The real property description is found on a map of the land or on the title documents for the land. If you are unsure of the real property description, you should contact the Department of Lands.

Please ensure that you place a slash (/) to distinguish between the lot, section, DP and strata numbers. If the project applies to more than one piece of land, please use a comma to distinguish between each real property description.

OR detailed description of land attached. ☒

MAP: A map of the site and locality should also be submitted with this application.

### 4. Major project description and other requirements

Provide a brief title for your project.

Narrabri Coal Mine Stage 2 Longwall Project

#### PROJECT APPROVAL

If you are applying for approval of a project, include in the project title, all significant components for which approval is being sought. If the application relates to part only of a project, the project title should reflect this.

Is the application for approval of a project?

☒ Yes ☐ No

Is the application related to part only of a project?

☒ Yes ☐ No

#### CONCEPT PLAN APPROVAL

If you are applying for approval of a concept plan, include in the project title, all components for which approval 'in concept' is being sought. If the application also relates to approval of a project, a description of this should also be included in the project title.

Is the application for approval of a Concept Plan?

☐ Yes ☒ No

Is a project application being made concurrently for all or part of the project?

☐ Yes ☒ No

**You are also required to provide a Project Description and address any matters required by the Director-General in accordance with section 75E or section 75M of the Act. Failure to do so may lead to your application being rejected.**

Is a Project Description attached?

☒ Yes ☐ No

Does the Project Description include any additional matters required by the Director-General under section 75E or section 75M of the Act?

☒ Yes ☐ No

Note: An electronic copy of the project description is also required as all applications must be provided on the Department's website. You should contact the Department on the correct electronic format.



#### ESTIMATED CAPITAL INVESTMENT VALUE

Please indicate the estimated capital investment value (CIV) of the project. The CIV includes all costs necessary to establish and operate the project, including the design and construction of buildings, structures, associated infrastructure and fixed or mobile plant and equipment (but excluding GST and land costs).

\$295 million

#### EQUIVALENT FULL-TIME JOBS

Please indicate the number of jobs created by the project. This should be expressed as a proportion of full time jobs over a full year.

Construction jobs (full-time equivalent)

75

Operational jobs (full-time equivalent)

98

### 5. Approvals from State agencies

Does the project require any of the following: (tick all that are appropriate)

- ☐ an aquaculture permit under section 144 of the *Fisheries Management Act 1994*
- ☒ an approval under section 15 of the *Mine Subsidence Compensation Act 1961*
- ☒ a mining lease under the *Mining Act 1992*
- ☐ a production lease under the *Petroleum (Onshore) Act 1991*
- ☒ an environment protection licence under Chapter 3 of the *Protection of the Environment Operations Act 1997* (for any of the purposes referred to in section 43 of that Act)
- ☒ a consent under section 138 of the *Roads Act 1993*
- ☐ a licence under the *Pipelines Act 1967*

### 6. Landowner's consent or notification

As the owner(s) of the above property, I/we consent to this application being made on our behalf by the proponent:

Land

Signature

Name

Date

Land

Signature

Name

Date

Note: Under clause 8F of the *Environmental Planning and Assessment Regulation 2000* (the Regulation), certain applications for approval under Part 3A of the Act do not require the consent of the landowner, however, the proponent is required to give notice of the application:

- In the case of linear infrastructure projects, by notice in a newspaper circulating in the locality prior to the commencement of the public consultation period,
- in the case of mining or petroleum production projects, by notice in a newspaper circulating in the locality within 14 days of this application being made,
- in the case of critical infrastructure projects, to the owner of the land within 14 days of this application being made, and
- in other cases, to the owner of the land at any time before the application is made.



## 7. Political donation disclosure statement

Persons lodging applications are required to declare reportable political donations (including donations of or more than \$1,000) made in the previous two years. Disclosure statements are to be submitted with your application or request.

Have you attached a disclosure statement to this application?

- ☒ Yes  
☐ No

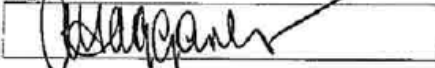
Note: For more details about political donation disclosure requirements, including a disclosure form, go to [www.planning.nsw.gov.au/donations](http://www.planning.nsw.gov.au/donations).

## 8. Proponent's signature

As the proponent(s) of the project and in signing below, I/we hereby:

- provide a description of the project and address all matters required by the Director-General pursuant to section 75E and/or section 75M of the Act, and
- apply, subject to satisfying clause 8D of the Environmental Planning and Assessment Regulation, for the Director-General's environmental assessment requirements pursuant to Part 3A of the Act, and
- declare that all information contained within this application is accurate at the time of signing.

Signature



Name

Tony Haggarty

Date

12 August 2009

In what capacity are you signing if you are not the proponent

Managing Director

Name, if you are not the proponent





# Appendix 2

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(No. of pages excluding this page = 24)

## Director-General's Requirements and Coverage of Relevant Requirements in the *Environmental Assessment*

- Correspondence from the Director-General, Department of Planning – 27 August 2009
- Table A2-1: Coverage of Director-General's Requirements in the *Environmental Assessment*
- Table A2-2: Coverage of Requirements nominated by other Government Agencies in the *Environmental Assessment*



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NSW GOVERNMENT  
**Department of Planning**

Contact: Colin Phillips  
Phone: 02 9228 6483  
Fax: 02 9228 6466  
Email: [colin.phillips@planning.nsw.gov.au](mailto:colin.phillips@planning.nsw.gov.au)

Mr Grieg Duncan  
General Manager  
Narrabri Coal Operations Pty Ltd  
Locked Bag 1002  
NARRABRI NSW 2390

Dear Mr Duncan,

**Modification to the Director-General's Requirements  
Narrabri Coal Project - Stage 2 (08\_0144)  
Director-General's Requirements**

I wish to advise you that in accordance with section 75F(3) of the *Environmental Planning and Assessment Act 1979*, the Director-General has modified his requirements for Stage 2 of the Narrabri Coal Project. I have attached a copy of the modified Director-General's requirements (DGRs) for the project.

If you have any enquiries about the modified requirements, please contact Colin Phillips at the detail above.

Yours sincerely

A large, stylized handwritten signature in black ink, appearing to read 'Chris Wilson'.

27.8.09

Chris Wilson  
**Executive Director**  
**Major Projects Assessment**  
As Delegate for the Director-General



## Director-General's Requirements

### Section 75F of the *Environmental Planning and Assessment Act 1979*

<b>Application Number</b>	08_0144
<b>Project</b>	<p>Stage 2 of the Narrabri Coal Project, which includes:</p> <ul style="list-style-type: none"> <li>installing and operating underground longwall mining equipment to extract up to 150 million tonnes of coal at a maximum rate of 8 million tonnes of coal a year;</li> <li>processing this coal on-site and transporting product coal by rail to the Port of Newcastle;</li> <li>installing and operating an additional upcast ventilation shaft and fan and surface infrastructure;</li> <li>installing and operating water supply infrastructure from the Namoi River to the mine and mine water management infrastructure;</li> <li>installing and operating mine gas drainage infrastructure; and</li> <li>operating the mine for up to 27 years.</li> </ul>
<b>Location</b>	Adjacent to Kurrajong Creek Road, Baan Baa, about 28 kilometres southeast of Narrabri
<b>Proponent</b>	Narrabri Coal Operations Pty Ltd
<b>Date of Issue</b>	25 August 2009
<b>General Requirements</b>	<p>The Environmental Assessment of the project must include:</p> <ul style="list-style-type: none"> <li>an executive summary;</li> <li>a detailed description of Stage 1 of the Narrabri Coal Project, including any relevant statutory approvals for this stage of the project;</li> <li>a detailed description of the project, including the:                         <ul style="list-style-type: none"> <li>- need for the project;</li> <li>- alternatives considered;</li> <li>- various components and stages of the project;</li> <li>- likely interactions between Stages 1 &amp; 2 of the Narrabri Coal project; and between the project and other land uses in the vicinity of the site; and</li> <li>- plans of any proposed building works;</li> </ul> </li> <li>a risk assessment of the potential environmental impacts of the project, identifying the key issues for further assessment;</li> <li>a detailed assessment of the key issues specified below, and any other significant issues identified in the risk assessment (see above), which includes:                         <ul style="list-style-type: none"> <li>- a description of the existing environment, using sufficient baseline data;</li> <li>- an assessment of the potential impacts of all stages of the project, including any cumulative impacts, taking into consideration any relevant guidelines, policies, plans and statutory provisions (see below);</li> <li>- a description of the measures that would be implemented to avoid, minimise, mitigate, rehabilitate/remediate, monitor and/or offset the potential impacts of the project, including detailed contingency plans for managing any significant risks to the environment;</li> </ul> </li> <li>a statement of commitments, outlining all the proposed environmental management and monitoring measures;</li> <li>a conclusion justifying the project on economic, social and environmental grounds, taking into consideration whether the project is consistent with the objects of the <i>Environmental Planning &amp; Assessment Act 1979</i>;</li> <li>a signed statement from the author of the Environmental Assessment,</li> </ul>



	certifying that the information contained within the document is neither false nor misleading.
<b>Key Issues</b>	<ul style="list-style-type: none"> <li>• <b>Soil &amp; Water</b> – paying particular attention to: <ul style="list-style-type: none"> <li>- any potential impacts on the Great Artesian Basin intake beds;</li> <li>- the requirements of the <i>NSW Great Artesian Basin Groundwater Sources Water Sharing Plan</i>; the <i>Upper and Lower Namoi Groundwater Water Sharing Plan</i> and the <i>Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Sources</i>;</li> <li>- demonstrating how the company would manage mine water, especially any mine water brought to the surface;</li> <li>- any potential subsidence-induced soil and stream erosion;</li> </ul> </li> <li>• <b>Subsidence</b>;</li> <li>• <b>Noise</b>;</li> <li>• <b>Air Quality</b>;</li> <li>• <b>Biodiversity</b> – including: <ul style="list-style-type: none"> <li>- accurate estimates of any vegetation clearing associated with the project;</li> <li>- a detailed assessment of the potential impacts of the project , particularly from subsidence impacts, on threatened species, populations, ecological communities or their habitat; and</li> <li>- a description of any measures that would be implemented to maintain or improve biodiversity values in the region;</li> </ul> </li> <li>• <b>Heritage</b> – both Aboriginal and non-Aboriginal;</li> <li>• <b>Greenhouse Gases</b> – a greenhouse gas assessment (including a quantitative analysis of greenhouse gas emissions associated with the combustion of coal, and a qualitative assessment of the impacts of these emissions on the environment);</li> <li>• <b>Transport</b>;</li> <li>• <b>Visual</b>; and</li> <li>• <b>Rehabilitation</b> – including a detailed description of the proposed rehabilitation strategy for the project, including detailed plans of the proposed final landform; and</li> <li>• <b>Social &amp; Economic</b> – particularly with regard to any increased demand for infrastructure and services in the Narrabri – Gunnedah region.</li> </ul>
<b>References</b>	The environmental assessment of the key issues listed above must take into account relevant guidelines, policies, and plans. While not exhaustive, the following attachment contains a list of some of the guidelines, policies, and plans that may be relevant to the environmental assessment of this project.
<b>Consultation</b>	<p>During the preparation of the Environmental Assessment, you should consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups or affected landowners.</p> <p>In particular you must consult with:</p> <ul style="list-style-type: none"> <li>• Department of Environment, Climate Change and Water;</li> <li>• Department of Industry and Investment;</li> <li>• Namoi Catchment Management Authority;</li> <li>• Department of Transport and Infrastructure; and</li> <li>• Narrabri Shire Council.</li> </ul> <p>The consultation process and the issues raised must be described in the Environmental Assessment.</p>
<b>Deemed Refusal Period</b>	90 days



## Policies, Guidelines & Plans

<b>Soil and Water</b>	
<i>Soil</i>	Rural Land Capability Mapping (DLWC)
	Agricultural Land Classification (DPI)
<i>Surface Water</i>	National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)
	Using the ANZECC Guideline and Water Quality Objectives in NSW (DEC)
	State Water Management Outcomes Plan
	Namoi Catchment Action Plan (DPI)
	Water Sharing Plan for the Upper and Lower Namoi Regulated River Water Sources (DWE)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC)
	Managing Urban Stormwater: Soils & Construction (Landcom)
	Technical Guidelines: Bunding & Spill Management (DECC)
	Environmental Guidelines: Use of Effluent by Irrigation (DECC)
<i>Groundwater</i>	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	NSW State Groundwater Policy Framework Document (DLWC)
	NSW State Groundwater Quality Protection Policy (DLWC)
	NSW State Groundwater Quantity Management Policy (DLWC) Draft
	Murray-Darling Basin Groundwater Quality. Sampling Guidelines. Technical Report No 3 (MDBC)
	Murray-Darling Basin Commission. Groundwater Flow Modelling Guideline (Aquaterra Consulting Pty Ltd)
	NSW Great Artesian Basin Groundwater Sources Water Sharing Plan (DWE)
	Upper and Lower Namoi Groundwater Water Sharing Plan (DWE)
<b>Subsidence</b>	
	Guideline for Application for Subsidence Management Approvals (DMR)
<b>Noise</b>	
	NSW Industrial Noise Policy (DECC)
	Environmental Criteria for Road Traffic Noise (NSW EPA)
	Environmental Noise Control Manual (DECC)
	Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects (DECC)
	Assessing Vibration: a technical guideline (DEC) Feb 2006
<b>Air Quality</b>	
	Protection of the Environment Operations (Clean Air) Regulation 2002
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC)
<b>Biodiversity</b>	
	Draft Guidelines for Threatened Species Assessment under Part 3A of the <i>Environmental Planning and Assessment Act 1979</i> (DEC)
	The NSW State Groundwater Dependent Ecosystem Policy (DLWC)
	Policy & Guidelines - Fish Friendly Waterway Crossings (NSW Fisheries)



	State Environmental Planning Policy No. 44 – Koala Habitat Protection
<b>Heritage</b>	
<i>Aboriginal</i>	Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DECC)
	NSW Heritage Manual (NSW Heritage Office)
<i>Non-Aboriginal</i>	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
<b>Greenhouse Gases</b>	
	AGO Factors and Methods Workbook (AGO)
	Guidelines for Energy Savings Action Plans (DEUS, 2005)
<b>Transport</b>	
	Guide to Traffic Generating Development (RTA)
	Road Design Guide (RTA)
<b>Rehabilitation</b>	
	Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia)
	Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia)
<b>Social &amp; Economic</b>	
	Draft Economic Evaluation in Environmental Impact Assessment (DOP)
	Techniques for Effective Social Impact Assessment: A Practical Guide (Office of Social Policy, NSW Government Social Policy Directorate)
<b>Strategic Plans</b>	
	Orana Regional Environmental Plan No 1 – Siding Spring (DoP)



**Table A2-1**  
**Coverage of Director-General's Requirements in the *Environmental Assessment***

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<b>Government Agency</b>	<b>Paraphrased Requirement</b>	<b>Relevant Section(s)</b>
<b>GENERAL</b>		
DoP	<p>The Environmental Assessment of the project must include:</p> <ul style="list-style-type: none"> <li>• an executive summary;</li> <li>• a detailed description of Stage 1 of the Narrabri Coal Project, including any relevant statutory approvals for this stage of the project;</li> <li>• a detailed description of the project, including the: a detailed description of the project, including the:               <ul style="list-style-type: none"> <li>– need for the project;</li> <li>– alternatives considered;</li> <li>– various components and stages of the project;</li> <li>– likely interactions between Stages 1 &amp; 2 of the Narrabri Coal project; and between the project and other land uses in the vicinity of the site; and</li> <li>– plans of any proposed building works;</li> </ul> </li> <li>• a risk assessment of the potential environmental impacts of the project</li> <li>• a detailed assessment of the key issues specified below               <ul style="list-style-type: none"> <li>– a description of the existing environment</li> <li>– an assessment of the potential impacts of all stages of the project</li> <li>– a description of the measures that would be implemented to avoid</li> </ul> </li> <li>• a statement of commitments</li> <li>• a conclusion justifying the project on economic</li> <li>• a signed statement from the author of the Environmental Assessment, certifying that the information contained within the document is neither false nor misleading.</li> </ul>	<p>Executive Summary</p> <p>1.4.3</p> <p>1.4.4</p> <p>2.14</p> <p>2.1.2, 2.4 to 2.13</p> <p>1.1, 1.4, 4A.3.3 and 4B.12</p> <p>2.4.9</p> <p>3.3.1</p> <p>Throughout Section 4B</p> <p>Table 5.1</p> <p>Section 6</p> <p>Declaration</p>





**Table A2-1 (Cont'd)**  
**Coverage of Director-General's Requirements in the *Environmental Assessment***

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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>KEY ISSUES</b>		
DoP	<ul style="list-style-type: none"> <li>• <b>Soil &amp; Water</b> – paying particular attention to: <ul style="list-style-type: none"> <li>– any potential impacts on the Great Artesian Basin intake beds;</li> <li>– the requirements of the <i>NSW Great Artesian Basic Groundwater Sources Water Sharing Plan</i>; and the <i>Upper and Lower Namoi Groundwater Water Sharing Plan</i>;</li> <li>– demonstrating how the company would manage mine water, especially any mine water brought to the surface;</li> <li>– any potential subsidence-induced soil and stream erosion;</li> </ul> </li> <li>• <b>Subsidence</b>;</li> <li>• <b>Noise</b></li> <li>• <b>Air Quality</b></li> <li>• <b>Biodiversity</b> - including <ul style="list-style-type: none"> <li>– accurate estimates of any vegetation clearing associated with the project;</li> <li>– a detailed assessment of the potential impacts of the project, particularly from subsidence impacts, on threatened species, populations, ecological communities or their habitat; and</li> <li>– a description of any measures that would be implemented to maintain or improve biodiversity values in the region;</li> </ul> </li> <li>• <b>Heritage</b> – both Aboriginal and non-Aboriginal;</li> <li>• <b>Greenhouse Gases</b> – a greenhouse gas assessment (including a quantitative analysis of greenhouse gas emissions associated with the combustion of coal, and a qualitative assessment of the impacts of these emissions on the environment);</li> <li>• <b>Transport</b>;</li> <li>• <b>Visual</b>;</li> <li>• <b>Rehabilitation</b> – including a detailed description of the proposed rehabilitation strategy for the project, including detailed plans of the proposed final landform; and</li> <li>• <b>Social &amp; Economic</b> – particularly with regard to any increased demand for infrastructure and services in the Narrabri-Gunnedah region.</li> </ul>	<p>4B.2.2.5, 4B.2.3.2 &amp; 4B.2.5.6</p> <p>4B.3.3, 4B.3.4 &amp; 4B.3.5</p> <p>4B.1.6.3 &amp; 4B.1.6.5</p> <p>4B.1</p> <p>4B.7</p> <p>4B.8</p> <p>4B.4.5.1</p> <p>4B.4.5 &amp; 4B.4.7</p> <p>4B.4.6</p> <p>4B.5 &amp; 4B.6</p> <p>4B.8.6.6</p> <p>4B.10</p> <p>4B.11</p> <p>2.13</p> <p>4B.13</p>
<b>REFERENCES</b>		
DoP	The environmental assessment of the key issues listed above must take into account relevant guidelines, policies and plans. While not exhaustive, the following attachment contains a list of some of the guidelines, policies and plans that may be relevant to the environmental assessment of this project <sup>1</sup> .	Noted and referenced as appropriate

<sup>1</sup> List not included



**Table A2-1 (Cont'd)**  
**Coverage of Director-General's Requirements in the *Environmental Assessment***

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<b>Government Agency</b>	<b>Paraphrased Requirement</b>	<b>Relevant Section(s)</b>
<b>CONSULTATION</b>		
DoP	<p>During the preparation of the Environmental Assessment, you should consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups or affected landowners.</p> <p>In particular you must consult with the:</p> <ul style="list-style-type: none"> <li>• Department of Environment and Climate Change;</li> <li>• Department of Water and Energy;</li> <li>• Department of Primary Industries;</li> <li>• Namoi Catchment Management Authority;</li> <li>• Roads and Traffic Authority; and</li> <li>• Narrabri Shire Council.</li> </ul> <p>The consultation process, and the issues raised during this process, must be described in the Environmental Assessment.</p>	3.2.2



**Table A2-2**  
**Coverage of Requirements nominated by Other Government Agencies in the**  
**Environmental Assessment**

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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>SUBSIDENCE</b>		
DECC	<p>Subsidence resulting from longwall mining has the potential to have significant impact on rigid surface features and infrastructure such as roads, pipelines, bridges and houses.</p> <p>Subsidence can also alter local streams by changing slopes and altering flow velocities and surface patterns. Subsidence may impact groundwater resources by fracturing aquifers and interacting with surface waters by providing alternative pathways for groundwater accession or discharges.</p> <p>DECC recommends that a strategic analysis of the potential impacts of subsidence be undertaken to identify any sensitive ecosystems or structures that may be impacted. The results of the analysis should be used to inform the mine layout and long-wall panel design so that future subsidence impacts are minimised.</p> <p>Describe mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment.</p> <p>This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.</p>	<p>4B.1.2.1 &amp; 4B.1.6</p> <p>4B.1.2.2 &amp; 4B.1.6</p> <p>4B.1.2, 4B.1.4, 4B.1.5 &amp; 4B.1.6</p> <p>4B.1.6</p> <p>4B.1.6</p>
DPI	<p>The EA should provide assessment of subsidence levels using best available predictive formulae.</p> <p>The proponent should consult closely with DPI Subsidence Officers in thoroughly addressing subsidence issues in the EA.</p> <p>The EA should identify if the predicted subsidence will result in fracture connectivity to the surface, the environmental consequence to the ground surface, groundwater aquifers and groundwater dependent ecosystems.</p> <p>Baseline assessment of the surface features above underground longwall areas must be sufficient to identify environmental features at risk, and setback or protection zones if necessary for sensitive features.</p>	<p>4B.1.5</p> <p>3.2.2.2</p> <p>4B.1.5.2 &amp; 4B.1.6.2</p> <p>4B.1.2.1</p>
NCMA	<p>The EA should address the potential impacts on both flora and fauna biodiversity especially with regard to loss of biodiversity due to surface slumping and cracking.</p> <p>Riparian Risk Management Zones resulting from subsidence should be clearly identified, assessed and control measures considered.</p> <p>The potential impacts from subsidence on all groundwater sources needs to be addressed within the EA.</p> <p>If subsidence results in negative impacts on biodiversity, surface and groundwater sources, riparian areas and land use then there is potential for negative impacts on the local, regional and catchment communities.</p>	<p>4B.4.5.7, 4B.4.6, &amp; 4B.4.7</p> <p>4B.3.3.4</p> <p>4B.1.5.2, 4B.1.6.2 &amp; 4B.2.5</p> <p>4B.1.6, 4B.4.5.7 &amp; 4B.4.7</p>



**Table A2-2 (Cont'd)**  
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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>SUBSIDENCE (Cont'd)</b>		
NSC	<p>Subsidence appears to be an issue that has other impacts including impacts upon groundwater, surface water, and ground level natural and “man-made” elements, the latter including buildings, structures and infrastructure and land use.</p> <p>Council requests that subsidence investigations and predictions be more precise and rigorous to enable both subsidence per se and associated impacts to be more rigorously assessed.</p>	<p>4B.1.6.1</p> <p>4B.1.5 &amp; 4B.1.6</p>
<b>GROUNDWATER</b>		
NSC	The proposal should demonstrate that it does not adversely impact upon <b>groundwater</b> and surface waters from all perspectives, ie. environmental, economic and social.	4B.2.5
DWE	<p>The Environmental Assessment for the project must demonstrate that no loss of groundwater will occur within these water sources, or indirect impacts may be managed under access licensing arrangements in force for both water sources.</p> <p>DWE requires the EA for the proposal demonstrate that the proposed mining operation will achieve the following:</p> <ol style="list-style-type: none"> <li>no hydraulic connection between the mining operation and surface water sources, including connected alluvium.</li> <li>no impact upon recharge mechanisms or groundwater recharge rates to the GABIB</li> <li>all indirect displacement or fracture-induced seepage loss from either groundwater source to be managed within the statutory water access arrangements defined within groundwater sharing plans in force.</li> </ol> <p>The above issues must be explained in detail in the EA and justification of the proposal provided in terms of protection to the water source.</p> <p>DWE emphasises that the Great Artesian Basin Water Sharing Plan (GABWSP) and the Upper and Lower Namoi Ground Water Sharing Plan (ULNGWSP) water sources must not be affected in such a way as to impact upon available water determinations to any other water user. This must be demonstrated in the Environmental Assessment.</p>	<p>4B.2.5.4 &amp; 4B.2.5.6</p> <p>4B.2.5.2.1</p> <p>4B.2.5.6</p> <p>4B.2.5.6</p> <p>4B.2.5.6</p> <p>4B.2.5.6</p>



**Table A2-2 (Cont'd)**  
**Coverage of Requirements nominated by Other Government Agencies in the**  
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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>GROUNDWATER (Cont'd)</b>		
DWE	<p>The following policy documentation must be referred to within the EA, and specific requirements of the two water sharing plans included in a checklist for the EA adequacy.</p> <p><b>State Government Technical and Policy Documents</b></p> <p><b>Water Management</b></p> <p>Great Artesian Basin Water Sharing Plan 2008</p> <p>Upper and Lower Namoi Ground Water Sharing Plan 2008</p> <p><b>Groundwater</b></p> <p>NSW State Groundwater Policy Framework Document (1997)</p> <p>NSW State Groundwater Quantity Management Policy (1998)</p> <p>NSW State Groundwater Quality Protection Policy (1998)</p> <p>NSW State Groundwater Dependent Ecosystems Policy (2002)</p> <p>Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)</p> <p>Australian and New Zealand Guidelines for Water Quality Monitoring and Reporting (2000)</p> <p>Guidelines for the Assessment and Management of Groundwater Contamination (2007)</p> <p>Guidelines for Groundwater Protection in Australia (1995)</p> <p><b>Mining Activities</b></p> <p>Management of stream/aquifer systems in coal mining developments guideline (2005)</p> <p>The Environmental Assessment report must include the following for all water-related aspects of the proposal.</p> <ul style="list-style-type: none"> <li>An environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation).</li> <li>Proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures.</li> <li>Where additional key environmental impacts are identified, an appropriately detailed impact assessment of these additional key environmental impacts must be included in the Environmental Assessment report.</li> </ul>	<p>Refer to Aquaterra (2009) – Part 2 of the <i>Specialist Consultant Studies Compendium</i></p> <p>3.3.1</p> <p>4B.2.4 &amp; 4B.2.5</p> <p>4B.2.5</p>
DWE	<p>The Environmental Assessment must include assessment of water supply and/or water interception and extraction against any Water Sharing Plan in force affecting the site or potential water supply to the proposal. A full description of water supply to all stages of the proposal must be included, which includes:</p> <ul style="list-style-type: none"> <li>water source(s) which may be used to supply water to the proposal, and a checklist against any regulatory water sharing or other ministerial plans or other instruments applying to that water source;</li> </ul>	4B.2.5.6



**Table A2-2 (Cont'd)**  
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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>GROUNDWATER (Cont'd)</b>		
DWE	<ul style="list-style-type: none"> <li>• explanation of any embargoes or full commitment declarations for the proposal, and any identified means to source water supply for the proposal;</li> <li>• examination of reliability of water supply to the proposal, including alternatives to site rainfall runoff harvesting in the event of drought;</li> <li>• demonstration of prioritisation and effective reuse of saline or other contaminated water within the proposal; and</li> <li>• explanation of water circuitry and means to segregate contaminated, sediment-laden and clean water volumes within the proposal site.</li> </ul> <p>the Environmental Assessment report must include, for the pre-, during, and post- development phases of the project the following:</p> <ul style="list-style-type: none"> <li>• identification of surrounding water users and any groundwater dependent ecosystems;</li> <li>• detailed explanation of potential groundwater volume, piezometric level, water table heights and the direction of flow and quality, through mine life and projections into the post-mine period, applying to the connected Namoi River alluvium, any identified aquicludes/aquitards underlying the connected alluvial water source and all seams targeted for extraction;</li> <li>• detailed explanation of groundwater drawdown or other impacts upon connected groundwaters associated with the Great Artesian Basin and Upper/Lower Namoi groundwater source, compared with all predicted seepage flow migrating from fractured hard rock into the proposed underground mine workings;</li> <li>• explanation of the site water balance for the proposed extension and total site operations, including any changes to water balance inputs from rainfall runoff and/or groundwater seepage to the open cut extension;</li> <li>• detailed description of any proposed water supply system utilising groundwater as a source, and assessment of current licensing arrangements against this;</li> <li>• detailed analysis of the impacts of dewatering if required for the project, identifying the magnitude and duration of pumping, the areal extent of water level drawdown, the likely quality of extracted groundwater, alterations to site water balance, and the monitoring and reporting protocols to be adopted to meet licensing requirements;</li> <li>• measures to prevent connectivity of either the water source, or its connected alluvium resulting from changes in groundwater tables;</li> <li>• identification of potential and likely groundwater-dependent ecosystems, and any impact upon these ecosystems which may result from the proposal; this must include:                         <ul style="list-style-type: none"> <li>– terrestrial vegetation with seasonal or episodic reliance on groundwater; and</li> <li>– aquatic and riparian ecosystems in, or adjacent to, streams or rivers dependent upon the input of groundwater to minimum base flows.</li> </ul> </li> </ul>	<p>4B.2.5.10</p> <p>4B.3.5</p> <p>4B.3.5</p> <p>4B.3.4 &amp; 4B.3.5</p> <p>4B.2.2.4</p> <p>4B.2.5</p> <p>4B.2.5</p> <p>4B.3.5</p> <p>4B.3.4 &amp; 4B.3.5</p> <p>4B.2.5.3 to 4B.2.5.10</p> <p>4B.2.4</p> <p>4B.2.2.4</p> <p>4B.4.7.5, 4B.4.7.6 &amp; 4B.4.7.7</p> <p>4B.2.5.8 &amp; 4B.4.5.8</p>



**Table A2-2 (Cont'd)**  
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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>GROUNDWATER (Cont'd)</b>		
DWE	<p>the Environmental Assessment report must include:</p> <ul style="list-style-type: none"> <li>justification of the proposed final landform with regard to its impact on local and regional groundwater systems;</li> <li>... ..</li> <li>detailed modelling of potential groundwater volume, flow and quality impacts of the presence of an inundated final void on identified receptors, specifically considering those environmental systems that are likely to be groundwater dependent;</li> <li>... ..</li> <li>the measures that would be established for the long-term protection of local and regional aquifer systems and for the ongoing management of the site following the cessation of the project.</li> </ul>	<p>4B.2.5.4</p> <p>4B.2.5.4 &amp; 4B.2.5.5</p> <p>4B.2.5.4</p>
NCMA	<p>The drilling of boreholes and the potential for groundwater contamination during drilling needs to be examined in the EA. Safeguards to prevent contamination need to be considered.</p> <p><b>Groundwater Sources</b></p> <p>The potential impacts from subsidence on all groundwater sources needs to be addressed within the EA.</p>	<p>4B.2.4.1</p> <p>4B.3.4.2.4</p>
<b>SURFACE WATER</b>		
DECC	<p>The DECC recommends that a water balance be prepared to model water management through the life cycle of the mine including the initial construction phase.</p> <p>The current water balance for Stage 1 will need to be reviewed and the proponent demonstrates that water can be managed on-site through the proposed treatment plant/evaporation pond system. If there is proposed to be beneficial reuse of treated water, assessment should be undertaken against the DECC's "Environmental Guidelines: Use of Effluent by Irrigation".</p> <p>Any discharge points will need to be identified with estimates of the frequency and volume of discharges and likely water quality limits for:</p> <ul style="list-style-type: none"> <li>Total dissolved and suspended solids;</li> <li>Non Filterable Residue;</li> <li>Grease and oil;</li> <li>Nutrients;</li> <li>pH; and</li> <li>Total Organic Carbon.</li> </ul> <p>The EA should consider any proposed discharge in terms of NSW Water quality and river flow objectives and utilising the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000).</p> <p>Describe mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment.</p>	<p>4B.3.5</p> <p>4B.3.5</p> <p>4B.3.4.2.7 &amp; 4B.3.6</p> <p>4B.3.4.2.7</p> <p>4B.3.4</p>



**Table A2-2 (Cont'd)**  
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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>SURFACE WATER (Cont'd)</b>		
DECC	<p>This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.</p> <p>These should be assessed in accordance with the relevant guidelines</p> <ul style="list-style-type: none"> <li>• Water quality                             <ul style="list-style-type: none"> <li>– National Water Quality Management Strategy: Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000)</li> <li>– NWQMS Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC 2000)</li> <li>– Relevant Catchment Action Plans and Water Quality/Flow Objectives</li> </ul> </li> <li>• Waste water                             <ul style="list-style-type: none"> <li>– National Water Quality Management Strategy; Guidelines for Sewerage Systems – Effluent Management (ARMCANZ/ANZECC 1997)</li> <li>– National Water Quality Management Strategy: Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC 2000)</li> <li>– Environmental Guidelines: Use of Effluent by Irrigation (DEC 2004)</li> </ul> </li> <li>• Stormwater                              (Note: some of these documents may have recently been revised)                             <ul style="list-style-type: none"> <li>– Managing Urban Stormwater: Soils and Construction, Volume 1, 4<sup>th</sup> Edition, (Landcom March 2004)</li> <li>– Managing Urban Stormwater: Source Control (EPA 1998)</li> <li>– Managing Urban Stormwater: Treatment Techniques (EPA 1998)</li> </ul> </li> <li>• Groundwater                             <ul style="list-style-type: none"> <li>– State Groundwater Policy Framework Document (DLWC 1997)</li> <li>– The NSW State groundwater Quality Protection Policy (DLWC 1998)</li> <li>– (Draft) NSW State Groundwater Quantity Management Policy</li> <li>– NSW State Groundwater Dependent Ecosystems Policy (DLWC, 2002)</li> <li>– National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ &amp; ANZECC, 1995)</li> </ul> </li> </ul>	<p>4B.3.7</p> <p>Refer to WRM (2009) – Part 3 of the <i>Specialist Consultant Studies Compendium</i></p>
DPI	<p>The EA should incorporate:</p> <ul style="list-style-type: none"> <li>• A detailed hydrological study of the impacted catchment areas (surface and groundwater).</li> <li>• Detailed description of water courses within impacted catchment area.</li> <li>• Integration of water sharing and water strategies for external users.</li> <li>• Contingencies for water storages and diversions around the impacted area.</li> <li>• Control and management of mine water and runoff water.</li> <li>• Review of flood control strategies to eliminate flooding of the operations.</li> </ul>	<p>4B.3</p> <p>4B.3.2</p> <p>4B.3.5</p> <p>4B.3.4</p> <p>4B.3.4</p> <p>4B.3.2.6</p>





**Table A2-2 (Cont'd)**  
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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>SURFACE WATER (Cont'd)</b>		
NSC	<p>The proposal should demonstrate that it does not adversely impact upon groundwater and <b>surface waters</b> from all perspectives, ie. environmental, economic and social.</p> <p>Council derives its town water supplies for Narrabri Township from bores in the general area. The proponent should consult with Councils Director of Engineering Services Mr Paul Keech with regards to information on Councils water supplies.</p>	<p>4B.3.7</p> <p>4B.3.2.4</p>
DWE	<p>The Environmental Assessment report must include the following for all water-related aspects of the proposal.</p> <ul style="list-style-type: none"> <li>An environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation).</li> <li>Proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures.</li> </ul> <p>Where additional key environmental impacts are identified, an appropriately detailed impact assessment of these additional key environmental impacts must be included in the Environmental Assessment report.</p>	<p>3.3.1</p> <p>4B.3.4</p> <p>4B.3.7</p>
DWE	<p>The Environmental Assessment report must include, for the pre-, during, and post- development phases of the project the following:</p> <ul style="list-style-type: none"> <li>general description of channel form, river style or other descriptive category of any affected channel, including identification of key geomorphologic indicators and conditions within the zone of influence for the proposal (ie. Either between most distant riverine controls surrounding the area of disturbance to the proposal area, and/or within the area of groundwater depressurisation);</li> <li>hydrologic and geomorphic character or the riverine system, stream energy and stream power relationships, energy relationships at bankfull stage and at peak flow, and assessment of stream power and critical tractive stress for existing and any modified conditions for any rivers affected by the proposal, which provides details of: <ul style="list-style-type: none"> <li>long profile and cross sectional survey along the channel, and identification of at least the closest upstream and downstream controls on the channel;</li> <li>assessment of bed and bank material, identification of critical entrainment and destabilisation thresholds;</li> <li>assessment of the constriction and resultant change in afflux through, past or over the structure, and resultant changes in energy profiles involving the structure;</li> <li>nature of bedload transport, and mechanism(s) to permit bedload transport through the structure;</li> </ul> </li> <li>procedures to develop stream relocation and reconstruction criteria which utilise best practice management, which must include the principles which underpin any embargoes currently in force under the <i>Water Act, 1912</i>, or operational rules of any Water Sharing plan in force over the site;</li> </ul>	<p>4B.3.2</p> <p>4B.3.2</p> <p>4B.3.4.4</p>



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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>SURFACE WATER (Cont'd)</b>		
DWE	<ul style="list-style-type: none"> <li>methodologies by which proposed relocation or reinstatement of watercourses will be undertaken, and whether any proposed ecological offset provisions will provide adequate protection to any instream or groundwater dependent ecosystems which exist on the site;</li> <li>mechanism to maintain long profile grade through the structure, or to provide energy dissipation through the structure at the re-entry point design volumes/velocity downstream;</li> <li>nature of existing controls along all watercourses on the site, and proposed use of engineered and vegetation to provide long term control to the channel;</li> <li>final configuration of any relocation, modification or other impact upon rivers and watercourses on or surrounding the site, including geomorphic character mimicking conditions of undisturbed rivers or watercourses adjacent to the proposal area.</li> </ul>	<p>Not Applicable (no GDEs identified)</p> <p>Not Yet Applicable</p> <p>Not Yet Applicable</p> <p>Not Yet Applicable</p>
NCMA	NCMA would like the proponent to consider the Namoi CAP when developing the EA, in particular, how the development may contribute towards the CAP Catchment and Management Targets, the State Plan and the State Wide Targets, and the National Priorities.	4B.3.2.7
<b>FLORA AND FAUNA</b>		
DECC	<p>The EA needs to address the potential impact on native vegetation, specifically:</p> <ol style="list-style-type: none"> <li>The area of native vegetation that will have to be cleared to accommodate the proposed surface infrastructure for the underground mining, Stage 2;</li> <li>The floristics of the botanic communities of native vegetation that will need to be cleared;</li> <li>The extent of native vegetation on the site which may be remnant vegetation, protection re-growth or non-protected regrowth as defined by the Native Vegetation Act 2003;</li> <li>The requirement to develop suitable offset(s) to improve or maintain environmental outcomes for the lawful clearing of native vegetation, in relation to four environmental values: water quality, soils salinity and biodiversity (including threatened species).</li> </ol>	<p>4B.4.5.1</p> <p>4B.4.3.2 &amp; 4B.4.5.1</p> <p>4B.4.3.2</p> <p>4B.4.6.4</p>
DPI	<p><b>State Forests</b></p> <p>The EA should include an assessment of the impacts of the proposal on State Forests including:</p> <ul style="list-style-type: none"> <li>Subsidence</li> <li>Any proposed clearing of State Forest</li> </ul>	4B.4.7.8



**Table A2-2 (Cont'd)**  
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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>FLORA AND FAUNA (Cont'd)</b>		
DECC	<p>The EA must follow the 'Draft Guidelines for Threatened Species Assessment.</p> <p>(a) A field survey of the site should be conducted and documented in accordance with these guidelines.</p> <p>(b) Likely impacts on threatened species and their habitat need to be assessed, evaluated and reported on. The assessment should specifically report on the considerations listed in Step 3 of the draft guideline.</p> <p>(c) The EA must describe the actions that will be taken to avoid or mitigate impacts or compensate to prevent unavoidable impacts of the project on threatened species and their habitat. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.</p> <p>(d) Step 4 of the draft guidelines requires that where measures to avoid or mitigate are not possible, offset strategies need to be considered.</p> <p>(e) The EA needs to clearly state whether it meets each of the key thresholds set out in Step 5 of the draft guideline.</p> <p>The EA must consider the corridor values or connective importance of any vegetation on the subject land. The DECC prefers that vegetation on adjoining land that exhibits these corridor values should be retained and, where necessary, rehabilitated.</p> <p>Describe mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment.*</p> <p>This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.*</p>	<p>4B.4.2.2</p> <p>4B.4.7.1, 4B.4.7.2 &amp; 4B.4.7.3</p> <p>4B.4.6</p> <p>4B.4.6.4</p> <p>4B.4.7.1</p> <p>4B.4.5.2, 4B.4.5.5 &amp; 4B.4.7</p> <p>4B.4.6</p> <p>4B.4.7</p>
NCMA	<p><b>Natural Features and Biodiversity</b></p> <p>The EA needs to consider impacts including fragmentation of vegetation communities, destruction of habitat, loss of corridors, ease of predation and weed introduction.</p> <p><b>Riparian Areas</b></p> <p>Riparian areas should be avoided when locating boreholes, clearing and maintaining access.</p> <p><b>Natural Features and Biodiversity</b></p> <p>The EA should address the potential impacts on both flora and fauna biodiversity especially with regard to loss of biodiversity due to surface slumping and cracking.</p> <p>The EA needs to identify any significant natural features including threatened species, geological features and aboriginal cultural heritage.</p>	<p>4B.4.5.2, 4B.4.5.5 &amp; 4B.4.7</p> <p>4B.4.7.5</p> <p>4B.4.6.3 &amp; 4B.4.7</p> <p>4B.4.3.4 &amp; 4B.4.4.3</p>



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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>FLORA AND FAUNA (Cont'd)</b>		
NCMA	<p>Safeguards need to be considered for any potential impacts.</p> <p>Risk Management Zones resulting from subsidence should be clearly identified, assessed and management measures considered.</p> <p><b>Riparian Areas</b></p> <p>The EA should address the potential impacts on terrestrial and aquatic biodiversity and any natural features that could result from subsidence within all creeks and drainage lines. There is the potential to create pools and riffles along with deep tension cracks in ephemeral streams which has the potential to change aquatic habitats.</p> <p>Subsidence also has the potential to change the hydrology</p>	<p>4B.4.6</p> <p>4B.3.3.4</p> <p>4B.4.4.2, 4B.4.5.5, 4B.4.6.3 &amp; 4B.4.7.5</p> <p>4B.6.5</p>
DPI	<p>The Narrabri Coal Mine Stage 2 proposal does contain some Key Fish Habitats (3<sup>rd</sup> order streams or higher – Strahler stream order system). The EA needs to address the impacts on surface water, groundwater and aquatic ecosystems such as the impacts on fish and fish habitat.</p> <p>The EA should include:</p> <ul style="list-style-type: none"> <li>– A general description of any aquatic habitat</li> <li>– Description and maps of aquatic habitat areas (creeks, wetlands, and floodplains) within the study area.</li> <li>– Hydrological information of watercourses such as bed substrate, and flow duration.</li> <li>– Discuss the potential impact the proposal may have on aquatic habitat. Predicted changes in flow patterns which may result in the death of aquatic and riparian vegetation that relies on surface water/shallow ground water flows and may result in the isolation of aquatic habitats and impact on the migratory nature of most aquatic species which rely on connectivity within streams/watercourses to complete their lifecycles.</li> <li>– Aspects of the management of the proposal which relate to impact minimisation, eg. Environment Management Plans.</li> <li>• Details of any potential blockages to fish passage               <ul style="list-style-type: none"> <li>– Information regarding potential blockages to fish passage as a result of creek subsidence.</li> <li>– Information regarding potential blockages to fish passage as a result of transport routes (causeways, culverts, etc) and potential alterations to natural bed levels or works in a stream that change flow or morphological characteristics.</li> <li>– Culvert or causeway construction associated with access roads within drainage lines should be in accordance with DPI's Policy and Guideline document: <i>Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings</i>.</li> </ul> </li> <li>• An assessment of the extent of any dredging or reclamation activities within 'water land'. This assessment should include any need for stream or creek realignment or placement of overburden on 'water land' or construction of roads/access routes through watercourses.</li> </ul>	<p>4B.4.4.2</p> <p>4B.4.4.2</p> <p>4B.4.4.2</p> <p>4B.3.3.5</p> <p>4B.4.5.5</p> <p>4B.4.5.5</p> <p>4B.4.6.2</p> <p>4B.4.6.2</p> <p>Not Applicable</p>



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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>FLORA AND FAUNA (Cont'd)</b>		
DPI	<ul style="list-style-type: none"> <li>DPI expect Best Management Practice with regards to controlling erosion and sedimentation.</li> <li>If the proposal includes likely disturbance to fish habitat, the EA should include a threatened aquatic species assessment (as per Part 5C, Environmental Planning and Assessment Act 1979) Compensatory habitats may be a requirement if the environmental assessment indicates there may be loss of aquatic or riparian habitats, and may need to be included in site rehabilitation plans or compensatory aquatic habitat offsets elsewhere in the catchment on other aquatic rehabilitation projects.</li> </ul>	<p>4B.3.4.2.4 &amp; 4B.4.6.2</p> <p>Not Applicable</p> <p>Not Applicable</p>
<b>ABORIGINAL HERITAGE</b>		
DECC	<p>The EA should address and document the information requirements set out in the draft <i>"Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation"</i> involving surveys and consultation with the Aboriginal community.</p> <p>Identify the nature and extent of impacts on Aboriginal cultural heritage values across the project area (including any potential impacts from underground mine subsidence) and consider any impact in a regional context by assessing the cumulative impact of proposed and approved developments.</p> <p>Describe the actions that will be taken to avoid or mitigate impacts or compensate to prevent unavoidable impacts of the project on Aboriginal cultural heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.</p> <p>The EA needs to clearly demonstrate that effective community consultation with Aboriginal communities has been undertaken in determining and assessing impacts, developing options and making final recommendations.</p> <p>Describe mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment.*</p> <p>This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.*</p>	<p>4B.5.2</p> <p>4B.5.6</p> <p>4B.5.5</p> <p>4B.5.2</p> <p>4B.5.5</p> <p>4B.5.5 &amp; 4B.5.6</p>
<b>NOISE AND VIBRATION</b>		
DECC	<p>Rail movements on the premises should be assessed against the INP. Assessment of impact of noise from rail movements off premises should be guided by the noise targets set in EPL 3142, and the DECC guidelines <i>'Interim guideline for the assessment of Noise from Rail Infrastructure Projects'</i>.</p> <p>The proponent should assess available meteorological data to assess inversion strengths and provide noise predictions, and assess impacts and mitigation measures for noise impacts during inversion conditions.</p>	<p>4B.7.3.6</p> <p>4B.7.5.2</p>



**Table A2-2 (Cont'd)**  
**Coverage of Requirements nominated by Other Government Agencies in the**  
**Environmental Assessment**

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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>NOISE AND VIBRATION (Cont'd)</b>		
DECC	Noise impacts associated with road haulage off the defined premises will need to be assessed against the DECC's guidance document 'NSW Environmental Criteria for Road Traffic Noise (EPA, 1999)'.	4B.7.6.5
	Vibration impacts should be assessed against the DECC guideline "Assessing Vibration: A Technical Guideline DEC 2006".	4B.7.5.4
	Describe mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment.*	4B.6.4
	This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.*	4B.7.4
<b>AIR QUALITY</b>		
DECC	Dust is the primary concern with potential emissions from conveyors, transfer points, loading facilities and from coal stacks.	4B.8.3.1
	Coal particles can also disperse in water spray drift when using recycled water.	4B.8.3.1
	There is potential for odour from the exhaust fan due to engine emissions.	4B.8.3.2
	DECC expects that models used at existing premises in conjunction with analysis of local meteorologic and terrain data would be sufficient to inform decisions about design and management options.	4B.8.6.2
	Another key aspect that will need to be investigated, impacts defined and mitigation measures proposed is impact of coal dust from rail transportation. This will require liaison with the Australian Rail Track Corporation (ARTC) who hold the environment protection licence (EPL 3142) for the rail network. Note during the PFM reference was provided by DECC to a study undertaken by Queensland Rail Limited on fugitive coal dust emissions.	4B.8.6.5
	Describe mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment.*	4B.8.5



**Table A2-2 (Cont'd)**  
**Coverage of Requirements nominated by Other Government Agencies in the**  
**Environmental Assessment**

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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>GREENHOUSE GAS EMISSIONS</b>		
DECC	<p>DECC requires the following in relation to greenhouse emissions:</p> <ol style="list-style-type: none"> <li>1. A comprehensive assessment of and report on the project's predicted greenhouse gas emissions (tCO<sub>2</sub>e), including emissions on: <ol style="list-style-type: none"> <li>(f) a tonnes per unit of production basis;</li> <li>(g) a total annual emissions basis; and</li> <li>(h) a total project lifetime basis, including any construction and decommissioning activities.</li> </ol> </li> <li>2. The emissions associated with the project should include direct emissions, indirect emissions (eg. those associated with electricity use) and any significant upstream and/or downstream emissions associated with the project.</li> <li>3. The emissions should be estimated using an appropriate methodology, as outlined in the Department of Planning's Draft <i>Guidelines: Energy and Greenhouse in EIA</i> (2002) and the Australian Greenhouse Office's <i>Factors and Methods Workbook</i> (2006).</li> <li>4. Annual emissions should be compared against: <ol style="list-style-type: none"> <li>(a) 'best practice' emissions for the activity; and</li> <li>(b) total annual NSW emissions, so the impact of the proposal on NSW emissions reduction targets can be evaluated.</li> </ol> </li> <li>5. The proponent should evaluate and report on the feasibility of additional measures to reduce greenhouse gas emissions, including offsets.</li> </ol> <p>The proponent should demonstrate that all reasonable and feasible measures are undertaken to capture, treat and utilise greenhouse gases, particularly pre-drainage methane gas, from underground coal workings.</p> <p>Describe mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment.</p> <p>This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.</p>	<p>4B.8.6.7</p> <p>4B.8.5.4</p> <p>4B.8.5.4</p> <p>4B.8.5</p> <p>4B.8.6</p>
NCMA	The EA needs to consider the disposal methods of the in-seam gas, especially with regard to using the gas productively and accounting for it in a carbon balance.	2.14.3



**Table A2-2 (Cont'd)**  
**Coverage of Requirements nominated by Other Government Agencies in the**  
**Environmental Assessment**

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Government Agency	Paraphrased Requirement	Relevant Section(s)
<b>TRANSPORTATION</b>		
RTA	The Roads and Traffic Authority (RTA) requirements for Environmental Assessment:	4B.10.2.2
	<ul style="list-style-type: none"> <li>Existing Traffic volumes of the Kamilaroi Highway (SH29) including traffic type break up, peak volumes, peak times and future growth rates.</li> </ul>	4B.10.5
	<ul style="list-style-type: none"> <li>A Traffic Impact Study detailing expected vehicle types, volumes and movements during both construction and operation. The study is to be broken down into peak and general times.</li> </ul>	4B.10.2.2
	<ul style="list-style-type: none"> <li>Intersection treatments and mitigation measures to cater for predicted traffic impacts. This is to include any required temporary or staged treatments and other measures such as covering of loads. Treatments are to be provided for any proposed new junctions as well as any other temporary junctions or existing intersection upgrades. The intersections are to cater for all heavy and over dimensional vehicles that will be accessing the development.</li> </ul>	4B.10.3.1
	<ul style="list-style-type: none"> <li>Details of any over dimensional or restricted vehicles expected.</li> </ul>	4B.10.4
	<ul style="list-style-type: none"> <li>Details of proposed signage.</li> </ul>	Not Applicable
	<ul style="list-style-type: none"> <li>A formal agreement in the form of a Works Authorisation deed (WAD) may be required between the developer and the RTA should the developer wish to undertake "private financing and construction" of any access with the Kamilaroi Highway.</li> </ul>	Not Applicable
DPI	<ul style="list-style-type: none"> <li>A Road Occupancy Licence is required prior to any works commencing within 3m of the travel lands. This can be obtained by contacting Mr Paul Maloney on 02 6861 1686. Submission of a traffic control plan is required as part of this licence.</li> </ul>	Not Applicable
<b>MINING</b>		
DPI	<b>Mining Titles</b> The proponent will need to commence early discussions with DPI MR on the requirements for the preparation and submission of a Mining Operations Plan, Annual Environmental Management Report and the Subsidence Management Plan for Stage 2 (SMP).	Noted
	<b>Mine Safety</b> The section of the EA that deals with safety issues should incorporate the following: <ul style="list-style-type: none"> <li>A commitment to compliance with the <i>Coal Mine Health and Safety Act 2002</i> and <i>Coal Mine Health and Safety Regulation 2006</i>.</li> <li>Nomination of a person (or persons) as Operator and Manager as required by the <i>Coal Mine Health and Safety Act 2002</i> and <i>Coal Mine Health and Safety Regulation 2006</i>.</li> <li>Details of the procedures the Proponent intends to adopt in addressing any safety issues identified by an Inspector or Mine Safety Officer or an authorised Government Official as specified in the <i>Coal Mine Health and Safety Act 2002</i>.</li> </ul>	2.12





**Table A2-2 (Cont'd)**  
**Coverage of Requirements nominated by Other Government Agencies in the**  
**Environmental Assessment**

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<b>Government Agency</b>	<b>Paraphrased Requirement</b>	<b>Relevant Section(s)</b>
<b>MINING (Cont'd)</b>		
DPI	<b>Mining Activities</b> The proponent should clearly identify the proposed sequence of mining and rehabilitation activities in the EA.	2.4
<b>SOCIO-ECONOMIC VALUES</b>		
NCMA	If subsidence results in negative impacts on biodiversity, surface and groundwater sources, riparian areas and land use then there is potential for negative impacts on the local, regional and catchment communities. Safeguards need to be adequately considered to prevent negative socio-economic impacts. The potential positive socio-economic benefits of coal mining needs to be addressed within the EA.	4B.13
<b>LANDFORM, LAND USE &amp; REHABILITATION</b>		
NCMA	The EA needs to consider the impacts of clearing, maintaining access and rehabilitation on the current and proposed long term land uses. These activities have the potential to result in soil erosion and off site sedimentation, weed invasion and changes to vegetation communities and therefore altered land use and management.	4B.12
	The EA needs to consider the potential land use changes both during the mining phase and the long-term post mining phase resulting from subsidence. Considerations need to include changes to topography and drainage, soil erosion assessments of both broadacre and riparian areas, assessments of land capability and land suitability, rehabilitation requirements and long term land use and management.	4B.12
DPI	<b>Post-Mining Land Use</b> The proponent should identify and assess final land use options and detail the preferred outcome in the EA. A justification of the preferred final land use must be provided. Appropriate success criteria should be documented to enable assessment of the success of rehabilitation outcomes.	2.13.2.4 & 4B.12
	Additionally, the EA should identify the options for green off-sets within the project area. The proponent is encouraged to assess the opportunity for compensation areas on external areas as well as the disturbed areas. These areas should be included in the final land use and rehabilitation planning.	4B.4.6.4



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# Appendix 3

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## SEPP 33 Risk Screening



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### A3.1 Introduction

Consideration has been made as to whether the Narrabri Coal Mine – Stage 2 Longwall Project should be considered a hazardous or potentially hazardous industry under State Environmental Planning Policy (SEPP) 33. In accordance with the risk screening method provided by the DUAP document “*Applying SEPP 33 Hazardous and Offensive Development Application Guidelines*” (DUAP, 1997), this appendix presents the details of the determination as to the classification of the Longwall Project under SEPP 33.

Industries or projects determined to be hazardous or potentially hazardous would require the preparation of a Preliminary Hazard Analysis (PHA) in accordance with Clause 12 of SEPP 33. No further assessment under SEPP 33 is required for projects not considered potentially hazardous.

### A3.3 Hazardous Materials on the Mine Site

Hazardous materials are defined within DUAP (1997) as substances falling within the classification of the *Australian Code for Transportation of Dangerous Goods by Road and Rail* (Dangerous Goods Code). Based on this definition, the hazardous materials to be stored on the Mine Site (specifically the Pit Top Area), quantities and storage location are summarised in **Table A3.1**.

**Table A3.1**  
**Hazardous Materials Storage on the Project Site**

Hazardous Material	Classification	Description	Storage Quantity	Storage Location
Diesel Fuel	Class 3 C1	Combustible liquids: flashpoint above 61°C but not exceeding 150°C	50 000L (50m <sup>3</sup> )	WorkCover - approved self-bunded fuel tank
Lubricating oils and greases	Class 3 C2	Combustible liquids flashpoint above 150°C	Minor storage (<500L) (0.5m <sup>3</sup> )	Fuel storage area and workshop within the Pit Top Area
Explosives (Powergel and detonators)	Class 1.1	Substances which have a mass explosion hazard, ie. effects virtually the entire load almost instantly.	Up to 1t of Powergel and 500 detonators	Separate explosives magazines >320m from active areas, other hazardous materials storages, public access points and residences

Transport information for the hazardous materials of the Mine Site is as follows.

	Average No. of Loads per week	Load Size
Diesel Fuel	0.3	25kL
Explosives (Powergel and detonators)	1	100kg



### **A3.3 SEPP 33 Determination**

As the diesel fuel (Class C1) and lubricating oils and greases (Class C2) are not stored adjacent to any other hazardous materials, DUAP (1997) does not require these to be considered further.

Figure 5 of DUAP (1997) indicates that the storage of 1t of Class 1.1 explosives within approximately 150m from the Mine Site boundary would be considered potentially hazardous. As the Proponent would store project-related explosives in excess of 320m from other hazardous materials storages, active areas, public access points and residences, the Longwall Project is not considered to be potentially hazardous. Reading from Figure 5 of DUAP (1997), between 12t and 13t of Class 1.1 explosives could be stored at this distance (of 320m) before the Longwall Project would be considered potentially hazardous.

DUAP (1997) indicates that in relation to the transport of Class 1 hazardous materials, there is no threshold for considering the activity potentially hazardous. Experience with determinations for projects transporting similar quantities of Class 1 hazardous materials, via comparable transportation routes suggests this component would not be considered potentially hazardous.

### **A3.4 Conclusion**

Based on the risk screening method of DUAP (1997), neither the storage nor transport of the hazardous materials to be stored on the Mine Site would result in the Longwall Project being considered potentially hazardous under SEPP 33. As such, there is no requirement to undertake a PHA for the Narrabri Coal Mine – Stage 2 Longwall Project.

### **A3.5 References**

**DUAP, 1997.** *Applying SEPP 33 2<sup>nd</sup> Edition.*



# Appendix 4

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Correspondence between the Proponent and Gunnedah Shire  
Council Related to an Approach to Assessing Cumulative Impacts  
of Increased Rail Traffic



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Whitehaven Coal Mining Pty Ltd  
ABN 65 086 426 253

PO Box 600  
Gunnedah  
NSW 2380  
Ph: 02 67424337  
Fax: 02 67423607

30 September 2009

Mayor Adam Marshall  
Gunnedah Shire Council  
PO Box 63  
Gunnedah NSW 2380

Dear Adam,

**Re: Meeting with Whitehaven Coal – 29<sup>th</sup> September 2009**

Please accept my thanks to you, Mike and Robert for receiving Allan, Tony and I for our discussions on your submission to the Department of Planning on the Narrabri Stage 2 Environmental Assessment.

We found the meeting very informative and now have a clear sense of the issues facing the Gunnedah Shire Council in regard to the cumulative impact of additional rail movements on the township of Gunnedah.

In order that the issue is adequately addressed in the final Environmental Assessment for public exhibition Whitehaven/Narrabri Coal will include additional coverage of the issue in the text of the document but will importantly, add to its Statement of Commitments in the following terms:

*"Narrabri Coal Operations Pty Limited will work co-operatively with Gunnedah Shire Council in terms of financial and in kind commitment of resources (to be agreed with Gunnedah Shire Council and on an equitable basis with other rail users) in an Integrated Traffic Management Study to be commissioned by the Gunnedah Shire Council. The study will fully investigate the implications of the cumulative impacts of increased rail traffic, on traffic flow in and about the township of Gunnedah".*

I would appreciate your response to the above as I believe it closes off the issue of concern raised in the Gunnedah Shire Council response to Department of Planning and continues to build on the good relationship between Gunnedah Shire Council and Whitehaven Coal.

Naturally, if there are any further questions in regard to this or any other matters, please feel free to contact me.

Yours sincerely

**Brian Cullen**  
GM Technical Services  
Whitehaven Coal





Mr B Cullen  
GM Technical Services  
Whitehaven Coal Mining Pty Ltd  
PO Box 600  
GUNNEDAH NSW 2380

8 October 2009

Dear Sir

I refer to your letter of 30 September 2009 regarding Council's comments in relation to the adequacy assessment of the Narrabri Stage 2 Environmental Assessment.

In terms of the Environmental Assessment, the inclusion of the paragraph, detailed in your letter, with the Statement of Commitments will address the concerns of Council in respect of your development proposal, as it relates to the broader rail traffic issue.

Council looks forward to working with your company in the development of an Integrated Traffic Management Study.

Yours faithfully

Michael J Silver  
DIRECTOR PLANNING & ENVIRONMENTAL SERVICES

Contact: M Silver 67402120  
Reference: 433706  
Ms.vg

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