

Tarrawonga Coal Project

**Environmental
Assessment**

ATTACHMENT 1

**DIRECTOR-GENERAL'S
ENVIRONMENTAL
ASSESSMENT
REQUIREMENTS**



Mr Danny Young
Environmental Manager
Whitehaven Coal Mining Pty Limited
PO Box 600
GUNNEDAH NSW 2382

Our ref: 10/09073

Dear Mr Young

Tarrawonga Coal Project (MP 11_0047) Director-General's Requirements

The Department has received your application for the Tarrawonga Coal Project.

I have attached a copy of the Director-General's requirements for the project. These requirements have been prepared in consultation with the relevant agencies, and are based on the information you have provided to date. I have also attached a copy of the agencies' comments for your information (see Appendix A).

Please note the Director-General may alter these requirements at any time.

The Commonwealth has determined that the project will also require approval under the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act), and has given the Department its requirements for the project (see Appendix B). These requirements have been incorporated into the Director-General's requirements, and must be addressed in any Environmental Assessment (EA) you submit for the project.

As you are aware, there could be a significant expansion of coal mining development in the Boggabri region, focussed principally on the Leard State Forest. In addition to the Tarrawonga Coal Project, the Department is aware of proposed expansions to the existing Boggabri and approved Maules Creek coal mines, and the coal exploration activities currently being undertaken in the Goonbri exploration licence area to the east of the Tarrawonga mine. If all of this development proceeds as planned, the Department estimates that this sub-region could be producing as much as 30 million tonnes of coal a year in the medium to long term.

As you can appreciate, this could result in a range of cumulative impacts on the surrounding region.

The Department has already indicated that it expects Tarrawonga Coal to work closely with the other companies in the sub-region to ensure that these cumulative impacts are kept to a minimum and managed appropriately.

In this regard, the Department expects you to include a detailed assessment in the EA of the potential cumulative impacts of the project operating in conjunction with any existing, approved and/or proposed coal mining development in the vicinity of the site, and to carry out a suitable sensitivity analysis of this assessment.

I would appreciate it if you would contact the Department at least two weeks before you propose to submit your EA for the project. This will enable the Department to:

- confirm your estimate of the applicable fee (see Division 1A, Part 15 of the *Environmental Planning and Assessment Regulation 2000*); and
- determine the number of copies (hard-copy and CD-ROM) of the EA that will be required for exhibition purposes.

Once it receives the EA, the Department will review it in consultation with the relevant agencies to determine if it adequately addresses the Director-General's requirements, and may require you to revise it prior to public exhibition.

The Department is required to make all the relevant information associated with the project publicly available on its website. Consequently, I would appreciate it if you would ensure that all the documents you subsequently submit to the Department are in a suitable format for the web, and arrange for an electronic version of the EA to be hosted on a suitable website.

If you have any enquiries about these requirements, please contact Carl Dumpleton on 9228 6283 or at carl.dumpleton@planning.nsw.gov.au.

Yours sincerely



Marcus Ray

A/Deputy Director-General

As delegate for the Director-General

07/07/11

Director-General's Requirements

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

Application number	MP 11_0047
Project	<p>The Tarrawonga Coal Project, which includes:</p> <ul style="list-style-type: none"> • extracting up to 3 million tonnes of run-of-mine coal a year until 2030, using open cut mining methods; • using, relocating, upgrading and augmenting existing infrastructure, including the construction of a coal conveyor to the adjoining Boggabri Coal Mine; • re-aligning Goonbri Creek as well as both Goonbri and Dripping Rock Roads; and • progressive rehabilitation of all disturbed areas.
Location	25 kilometres northeast of Boggabri
Proponent	Tarrawonga Coal Pty Limited
Date of Issue	July 2011
General Requirements	<p>The Environmental Assessment (EA) of the project must include:</p> <ul style="list-style-type: none"> • an executive summary; • a detailed description of: <ul style="list-style-type: none"> - existing and approved development on site; and - the existing environmental management and monitoring regime; - the existing, approved, and proposed mining operations in the vicinity of the site • a detailed description of all aspects of the project, including the: <ul style="list-style-type: none"> - need for the project; - alternatives considered, including detailed justification for the proposed mine plan; - likely staging of the project; - likely interactions between the project and existing, approved and proposed mining operations in the vicinity of the site; and - plans of any proposed building works; • a risk assessment of the potential environmental impacts of the project, identifying the key issues for further assessment; • 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"> – a description of the existing environment, using sufficient baseline data; – an assessment of the potential impacts of the project, <u>including any cumulative impacts</u>, taking into consideration any relevant guidelines, policies, plans and statutory provisions (see below); and – a description of the measures that would be implemented to avoid, minimise, and if necessary, offset the potential impacts of the project, including detailed contingency plans for managing any significant risks to the environment; • a statement of commitments, outlining all the proposed environmental management and monitoring measures; • 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 & Assessment Act 1979</i>; and • a signed statement from the author of the EA, certifying that the information contained within the document is neither false nor misleading.

Key Issues

- **Biodiversity** – including:
 - accurate estimates of the proposed vegetation clearing;
 - a detailed assessment of the potential impacts of the project on any:
 - o terrestrial or aquatic threatened species or populations or their habitats, endangered ecological communities or groundwater dependent ecosystems;
 - o regionally significant remnant vegetation, or vegetation corridors; and
 - o the matters outlined in Appendix B;
 - a detailed description of the measures that would be implemented to avoid or mitigate impacts on biodiversity;
 - an offset strategy to address the residual impacts of the project, and ensure that the project would maintain or improve the biodiversity values of the region in the medium to long term;
- **Water**– including:
 - detailed modelling of the potential surface and ground water impacts of the project, including any flooding impacts;
 - a detailed site water balance of the project, including a description of the measures that would be implemented to minimise water use on site;
 - a detailed assessment of the potential impacts of the project on:
 - o the quality and quantity of surface and ground water resources;
 - o water users, including the availability of water for agricultural uses within the broader region;
 - o the riparian, ecological, geomorphological and hydrological values of watercourses both on the site and downstream of the project; and
 - o environmental flows;
- **Agricultural Productivity** – including:
 - a description of the agricultural resources (especially soils and water resources used or capable of being used for agriculture) and agricultural enterprises of the locality;
 - a detailed assessment of the potential impacts of the project on agricultural resources and/or enterprises of the locality;
 - a detailed description of the measures that would be implemented to avoid and/or minimise the potential impacts of the project on agricultural resources and/or enterprises of the locality; and
 - justification for any significant long term changes to agricultural resources, particularly if highly productive agricultural resources (eg alluvial lands) are proposed to be affected by the project;
- **Air** – including a quantitative assessment of the potential air quality impacts of the project;
- **Noise & Blasting** – including a quantitative assessment of potential:
 - construction, operational and transport noise impacts, both on and off-site; and
 - blasting impacts on people, livestock and property;
- **Traffic & Transport** – including:
 - accurate predictions of the road and rail (if any) traffic of the project;
 - a detailed assessment of the potential impacts of this traffic on the capacity, efficiency and safety of the road (and if necessary rail) network; and
 - plans of the proposed road re-alignments;
- **Heritage** – including an assessment of the potential impacts of the project on:
 - *Aboriginal heritage* (including cultural and archaeological significance) and where impacts are proposed, outline the proposed mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures) in accordance with the Draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005). The assessment must demonstrate effective consultation with Aboriginal communities in determining and

	<p>assessing impacts, and developing and selecting options and mitigation measures (including the final proposed measures); and</p> <ul style="list-style-type: none"> - <i>Historic heritage</i> (including archaeology), and where impacts to State or locally significant historic heritage items are proposed, outline the proposed mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures) generally consistent with the guidelines in the <i>NSW Heritage Manual</i> (1996), and include a statement of heritage impact (including significance assessment); • Greenhouse Gases – including: <ul style="list-style-type: none"> - a quantitative assessment of the potential scope 1, 2 and 3 greenhouse gas emissions of the project; - a qualitative assessment of the potential impacts of these emissions on the environment; and - an assessment of the reasonable and feasible measures that could be implemented on site to minimise the greenhouse gas emissions of the project; • Visual; • Hazards – including bushfires; • Waste – including: <ul style="list-style-type: none"> - accurate estimates of the quantity and nature of the potential waste streams of the project, including any tailings and coarse reject; and - a detailed description of the measures that would be implemented to minimise the production of waste on site, and ensure that any waste produced is appropriately handled and disposed of; and • Rehabilitation – a detailed description of the proposed rehabilitation strategy for the project, having regard to the key principles in <i>Strategic Framework for Mine Closure</i> (2000), including: <ul style="list-style-type: none"> - rehabilitation objectives, methodology, and proposed completion criteria; - nominated final land use, having regard to any relevant strategic land use planning or resource management plans or policies; and - the potential for integrating the rehabilitation strategy with any other rehabilitation or offset strategies in the region; • Social & Economic – including: <ul style="list-style-type: none"> - an assessment of the potential impacts of the project on the local and regional community, paying particular attention to the demand it may generate for the provision of additional infrastructure (including housing) and services; and - a detailed assessment of the costs and benefits of the project as a whole, and whether it would result in a net benefit for the NSW community.
References	<p>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 guidelines, policies and plans that may be relevant to the environmental assessment of this project.</p>
Consultation	<p>During the preparation of the EA, 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"> • the Commonwealth Department of Sustainability, Environment, Water, Population and Communities; • Office of Environment and Heritage; • Division of Resources and Energy (within the Department of Trade and Investment, Regional Infrastructure and Services); • Department of Primary Industries, including the NSW Office of Water; • Roads and Traffic Authority; • Narrabri Shire Council; and • Gunnedah Shire Council.

	Both the consultation process and the issues raised during this process must be described in the EA.
Deemed Refusal Period	90 days

Policies, Guidelines & Plans

Biodiversity	
	Draft Guidelines for Threatened Species Assessment under Part 3A of the <i>Environmental Planning and Assessment Act 1979</i> (EP&A Act) (DEC)
	NSW State Groundwater Dependent Ecosystem Policy (DLWC)
	Policy & Guidelines - Aquatic Habitat Management and Fish Conservation (NSW Fisheries)
	Policy & Guidelines - Fish Friendly Waterway Crossings (NSW Fisheries)
	State Environmental Planning Policy No. 44 – Koala Habitat Protection
Soil & Water	
Soil	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC)
	Rural Land Capability Mapping (DLWC)
	Agricultural Land Classification (DPI)
Surface Water	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)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Effluent Management (ARMCANZ/ANZECC)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC)
	Using the ANZECC Guideline and Water Quality Objectives in NSW (DEC)
	State Water Management Outcomes Plan
	Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Sources 2003 (DECCW)
	NSW Government Water Quality and River Flow Objectives (DECC)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC)
	Managing Urban Stormwater: Soils & Construction (Landcom)
	Managing Urban Stormwater: Treatment Techniques (DECC)
	Managing Urban Stormwater: Source Control (DECC)
	Floodplain Management Manual (DNR)
	Floodplain Risk Management Guideline (DECC)
	A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH)
	Technical Guidelines: Bunding & Spill Management (DECC)
	Environmental Guidelines: Use of Effluent by Irrigation (DECC)
Groundwater	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	NSW State Groundwater Policy Framework Document (DLWC, 1997)
	NSW State Groundwater Quality Protection Policy (DLWC, 1998)
	NSW State Groundwater Quantity Management Policy (DLWC, 1998)
	Murray-Darling Basin Groundwater Quality. Sampling Guidelines. Technical Report No 3 (MDBC)
	Murray-Darling Basin Commission. Groundwater Flow Modelling Guideline (Aquaterra Consulting Pty Ltd)
	Guidelines for the Assessment & Management of Groundwater Contamination (DECC, 2007)
Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources (2003)	

Air Quality	
	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)
Noise & Blasting	
	NSW Industrial Noise Policy (DECC)
	Environmental Noise Management – Assessing Vibration: a technical guide (DEC)
	Environmental Criteria for Road Traffic Noise (NSW EPA)
	Interim Guideline for the Assessment of Noise From Rail Infrastructure Projects (DECC)
	Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZEC)
	Interim Construction Noise Guideline (DECC)
	DIN 4150 Part 3 - Structural Vibration: effects of vibration on structures (ISO, 1999)
Traffic & Transport	
	Guide to Traffic Generating Development (RTA)
	Road Design Guide (RTA)
Heritage	
<i>Aboriginal</i>	Draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (DoP and DEC)
	NSW Heritage Manual (NSW Heritage Office)
<i>Non-Aboriginal</i>	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
Greenhouse Gases	
	National Greenhouse Accounts Factors (Australian Department of Climate Change (DCC))
	Guidelines for Energy Savings Action Plans (DEUS)
Waste	
	Waste Classification Guidelines (DECC)
Hazards	
	State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
	Applying SEPP 33 – Hazardous and Offensive Development Application Guidelines (DUAP)
	Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis
Rehabilitation	
	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)
	Strategic Framework for Mine Closure (ANZMEC/MCA, 2000)
Social & Economic	
	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)

APPENDIX A AGENCIES' REQUIREMENTS



7 April 2011

Department of Planning
GPO Box 39
Sydney NSW 2001

Attention: Mr Colin Phillips, Senior Planner, Mining and Industry

Dear Colin

Re: Tarrawonga Coal Project (11_0047) Extension – Preliminary Environmental Assessment and DGRs.

Thank you for the opportunity to provide comment on the assessment requirements for the Tarrawonga Coal Extension Project.

When the EA is produced, Namoi CMA will examine the EA to ensure it has thoroughly addressed a number of environmental issues highlighted in the preliminary EA. These issues include:

- **Diversion of Approximately 2 Kilometres of Goonbri Creek.**
Namoi CMA requests that a full geomorphologic study as well as native flora and fauna studies be undertaken by the proponent to enable assessment of the impacts of this significant diversion.
- **Clearing of Sections of the Leard State Forest.**
Namoi CMA requires that a full and complete assessment be undertaken of the impacts of clearing on local fauna and flora, the cumulative effects of clearing, the biodiversity offset strategy and any impacts on surrounding agricultural lands.
- **Groundwater and Surface Water Management.**
Namoi CMA requires a complete assessment of the surface water and groundwater impacts of the Goonbri Creek diversion and any further impacts resulting from out of pit emplacements and final voids.
- **Adequate Rehabilitation of the Mine Site in Reference to Soils, Land Capability, Native Vegetation and Surface Water.**
Namoi CMA requires a full assessment of soil types, soil stripping procedures, land capability assessment and land use activities pre and post mining, final landforms, rehabilitation processes and soil conservation measures.

- **Adequate Community Consultation.**

Namoi CMA needs to be able to understand how the mine extension will impact the community especially as a result of the diversion of Goonbri Creek, the diversion of Goonbri Road plus increased transport movements/operating hours.

Additionally, the preliminary EA makes no reference to the following:

- Namoi CMA's Extractive Industries Policy (NCMA EIP 2009). There are a number of critical statements within the policy which we believe should be addressed within the EA, including a rigorous risk assessment.
- Namoi CMA's Catchment Action Plan (CAP) which was developed in consultation with the community and approved by the Minister for Natural Resources in January 2007. The CAP complements other natural resource plans including water sharing plans, regional strategies and conservation plans. The CAP has a key role in addressing the environmental, social and economic priorities of the NSW State Plan. The CAP establishes Catchment and Management targets for the Namoi Catchment. The proponent needs to address these Catchment and Management targets to determine whether the development will negatively impact or enhance the targets.
- How the proposed coal extension development will help to meet and/or benefit National, State nor Catchment environmental, economic or social targets.

Namoi CMA believes that the abovementioned concerns need to be addressed within the EA. Should you wish to discuss these matters further, please do not hesitate to contact Glenn Bailey on (02) 6742 9204.

Yours Sincerely



Bruce Brown
General Manager
Namoi Catchment Management Authority



Contact: Gary Estcourt
Phone: (02) 9873 8562
Fax: (02) 9873 8599
Email: Gary.estcourt@planning.nsw.gov.au
File: 11/06034
Our Ref: B341985
Your Ref: MP11_0047

NSW Department of Planning
Mining and Industry
GPO Box 39
SYDNEY NSW 2001

Attention: Carl Dumbleton

Dear Mr Dumbleton

**MAJOR PROJECT REFERRAL – TARRAWONGA COAL PROJECT APPLICATION REPORT
– REQUEST FOR DIRECTOR-GENERAL'S REQUIREMENTS FOR ENVIRONMENTAL
ASSESSMENT**

I refer to your letter dated 24th March 2011, requesting information regarding the NSW Heritage Council's requirements in relation to the proposed Tarrawonga Coal Project. The proposal consists, in part, of the following works:

- Extension of the Tarrawonga Coal Mine to the east and north.

Section 4.3.11 of the Preliminary environmental Assessment specifically deals with Cultural Heritage issues noting that although no heritage items are located in the project area the Boggabri Railway Station and the Iron Bridge on the Namoi River at Boggabri are items located approximately 15km away from the project area and have been identified as having some heritage significance.

Specifically in terms of cultural heritage the Preliminary Environmental Assessment makes the following recommendations:

- A review of heritage databases and past studies;
- A site inspection and survey of the planned Project disturbance areas to identify any previously unrecorded sites; and
- A description of the measures that would be used to manage/mitigate/avoid potential impacts, if required.

These measures are considered appropriate. Generally, it is advised that the environmental assessment should address the following issues:

- The heritage significance of the site and any impacts the development may have upon this significance should be assessed. This assessment should include natural areas and places of Aboriginal, historic or archaeological significance. It should also include a consideration of wider heritage impacts in the area surrounding the site;
- The Heritage Council maintains the State Heritage Inventory which lists some items protected under the Heritage Act, 1977 and other statutory instruments. This register can be accessed through the Heritage Branch home page on the internet (<http://www.heritage.nsw.gov.au>).



Office of Environment & Heritage

- It should be noted that the legal standing of items listed on the State Heritage Register can also be provided by applying for a section 167 Certificate through the Heritage Branch home page;
- Other lists to be consulted should be those lists maintained by the National Trust, the Australian Government's Environment Protection and Biodiversity Conservation Act 1999 and the local council in order to identify any identified items of heritage significance in the area affected by the proposal. Please be aware, however, that these lists are constantly evolving and that items with potential heritage significance may not yet be listed.
- Non-Aboriginal heritage items within the area affected by the proposal should be identified by field survey. This should include any buildings, works, relics (including relics underwater), gardens, landscapes, views, trees or places of non-Aboriginal heritage significance. A statement of significance and an assessment of the impact of the proposal on the heritage significance of these items should be undertaken. Any policies/measures to conserve their heritage significance should be identified. This assessment should be undertaken in accordance with the guidelines in the NSW Heritage Manual. The field survey and assessment should be undertaken by a qualified practitioner/consultant with historic sites experience;
- The proposal should have regard to any impacts on places, items or relics of significance to Aboriginal people. Where it is likely that the project will impact on Aboriginal heritage, adequate community consultation should take place regarding the assessment of significance, likely impacts and management/mitigation measures;
- The relics provisions in the Heritage Act require an excavation permit to be obtained from the Heritage Council, or an exception to be endorsed by the Heritage Council, prior to commencement of works if disturbance to a site with known or potential archaeological relics is proposed. Where possible refer to archaeological zoning plans or archaeological management plans held by Local Councils. If any unexpected archaeological relics are uncovered during the course of work excavation should cease and an excavation permit, or an exception notification endorsement, obtained;
- If approval is required under the Heritage Act due to the listing of an item or place on the State Heritage Register the Heritage Council's approval must be sought prior to an approval being issued by the consent authority under the Environmental Planning and Assessment Act (except where application relates to Integrated Development). In accordance with Section 67 of the Heritage Act, an approval given by a consent authority in these cases before the Heritage Council's determination of the application has been notified to the consent authority is void.

If you have any further enquiries regarding this matter, please contact Gary Estcourt at the Office of Environment and Heritage on (02) 9873 8562.

Yours sincerely

8/4/2011

Rajeev Maini

Acting Manager

Conservation Team

Office of Environment and Heritage



319.5395 10/2; C11/299

Director
Mining & Industry Projects
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Dear Sir

11_0047, Tarrawonga Coal Project, Director General's Requirements

Thank you for your letter dated 24 March 2011 referring the *Tarrawonga Coal project Project Application and preliminary Environmental Assessment* to the Roads and Traffic Authority of New South Wales (RTA).

Following review of the *Preliminary Environmental Assessment* the RTA has identified the following key issues which are recommended for inclusion in the Director General's requirements:

- A traffic impact study as provided for at Part 4.3.12 of the *Preliminary Environmental Assessment* including details of:
 - Hours and days of construction and operation of the coal mine as well as for sales of gravel and domestic coal.
 - Schedule for phasing/staging of the project.
 - Traffic volumes:
 - existing
 - project-related for each stage of the project including construction, operation, including sales of gravel and domestic coal, and decommissioning
 - future, excluding project-related traffic
 - future, including project-related traffic.
 - Traffic volumes are to also include a description of:
 - the ratio of light vehicles to heavy vehicles
 - peak times for existing traffic
 - peak times for project-related traffic
 - transportation hours
 - The origin, destination and routes for:
 - employee and contractor light traffic
 - customer traffic for gravel and domestic coal
 - heavy traffic
 - oversize and overmass traffic.
 - The impact of the proposed conveyor to Boggabri Coal Mine on the need for road transportation.
- Access to classified roads is to be minimised and existing accesses and intersections are to be used wherever practicable.

Roads and Traffic Authority of New South Wales

- The shortest and least trafficked route is to be given priority for the movement of materials and machinery to minimise the risk and impact to other motorists so far as is reasonably practicable.
- A description of all oversize and overmass vehicles and the cargo to be transported.
- The impact on the public road network of project-related traffic during construction, operation and decommissioning.
- The need for improvements to the road network, and the improvements proposed such as road widening and intersection treatments, to cater for and to mitigate the impact of project-related traffic.
- Proposed road facilities, access and intersection treatments are to be identified and in accordance with the *Austrroads Guide to Road Design* and any relevant RTA supplements.
- The layout of the internal road network, parking facilities and infrastructure within the project boundary.
- Proposed working arrangements, including parking arrangements, for construction, maintenance and operation of any transmission lines or associated infrastructure within the road reserve.
- The unloading and loading of transport and service vehicles particularly addressing the issue of oversize and overmass vehicles.
- Assessment of traffic noise and dust effects.
- Details of local climate conditions that may affect road safety eg. fog, ice, flood and any mitigating measures proposed.
- A Traffic Management Plan is to be developed in consultation with the RTA.

The RTA suggests the applicant also consider:

- Transport of components (oversize and over-mass loads)
 - Transportation of oversize components via the public road system should be minimised where possible. Alternative transport options including rail transport should be considered.
 - The applicant will be required to obtain permits for any oversize and over-mass vehicles and loads.
 - The applicant will be required to submit detailed Traffic Management Plans indicating the proposed routes and associated impacts (temporary street closures, removal and replacement of road infrastructure, etc.) which will be required in order for the necessary materials and machinery to be delivered to site. Traffic Management Plans are also to include assessment of how high risk locations that prevent safe two-way passage of traffic are to be negotiated. It is essential that the applicant is accountable for this process rather than the haulage contractor.
 - If any parts of the proposed route are unable to cater for the transport of components the applicant is required to improve any part of the road along the route so that it can cater for the length, size and volume of loads. This may include the applicant constructing stopping bays (suitable hard stand areas) at distances and dimensions determined by the RTA. These areas would be required along the proposed route to allow the following vehicle queue to pass.
 - The RTA requires that any disturbances to traffic lanes, shoulder, verge or otherwise within the road reserve be reinstated to the pre-existing or better condition. This includes any impact on the road pavement, culverts, bridges, causeways, stock grids, signage and traffic islands.
 - A full and independent risk analysis and inspection of the transport route will be required and the RTA supplied with the report. Further analysis and reporting to assess possible damage to and repair of the route will be required on a regular basis.
 - Vehicles transporting loads will not be permitted to travel in convoys or platoons.
 - Queues of vehicles behind slow moving large loads increase the risk of rear end crashes when queues become excessive. A queue of three heavy vehicles or 15 light vehicles is that which would be required to be cleared to prevent the risk of rear-end crashes and risky overtaking manoeuvres.

- Consideration should be given for the best time of day to minimise traffic impacts, this will require the applicant to liaise with the RTA Special Permits Unit. Overnight transport is not normally allowed under a Special Permit.
- The applicant may be required to liaise with other State transport authorities should the origin of materials and machinery to be transported be outside of New South Wales. If this is the case the requirements of those other authorities are to be communicated to the RTA for co-ordination.
- The requirements outlined in the RTA publication *Operating Conditions: specific permits for oversize and over-mass vehicles and loads* will need to be followed. This publication is available online at www.rta.nsw.gov.au/heavyvehicles/oversizeovermass.
- A Traffic Management Plan will need to be prepared to manage the additional traffic to be generated by the development. The Traffic Management Plan will address the management of accesses to classified roads including:
 - Unsealed shoulder widening which may need to be undertaken for the right turn lane and left turn lane into access points. Design plans including the geometric road design and pavement design will need to be submitted to the RTA for approval. Following the completion of construction works the applicant will be required to rehabilitate the shoulders to the satisfaction of the RTA. The layout and pavement design of the accesses will be required to cater for all oversize and over-mass vehicles and loads.
 - The clearing and maintenance of vegetation for the duration of construction to provide safe intersection site distance in accordance with the *Austrroads Guide to Road Design* at all accesses.
- The RTA will require a commitment from the applicant to provide funding for the maintenance and repair of any affected classified roads for the duration of transportation of oversize and overmass vehicles and loads to the satisfaction of the RTA.
- All arrangements for the control of traffic on a State road shall be in accordance with the RTA publication *Traffic Control at Work Sites*. A Road Occupancy Licence will be required prior to any works commencing within three metres of the traffic lanes and submission of the Traffic Management Plan will be part of Road Occupancy Licence.
- Should the applicant be required to undertake private financing and construction for any works on, over, under or connecting to a State road or any other road in which the RTA has a statutory interest a formal agreement in the form of a Works Authorisation Deed (WAD) will be required between the applicant and the RTA.
- All works associated with the project including consultation and planning will be at no cost to the RTA.

Please forward a copy of the Director General's Requirements to the RTA at the same time they are sent to the applicant.

Should you require further information please contact Susie Mackay (02) 6861 1688.

Yours sincerely



Tony Hendry
Road Safety and Traffic Manager
Western

11 APR 2011



Major Development Assessments
Department of Planning
GPO Box 39
SYDNEY NSW 2001

28 April 2011

Attention: Colin Phillips



c: Elizabeth Cala
t: 02 4904 2533
f: 02 4904 2501
e: elizabeth.cala@water.nsw.gov.au

Our ref : ER 21465
Your ref: 11_0047

Dear Mr Phillips *Colin*

Tarrawonga Coal Project (11_0047) - Director-General's Requirements

I refer to your letter of 24 March 2011.

NOW has reviewed the Preliminary Environmental Assessment for the Tarrawonga Coal Project.

NOW provides the following advice, as well as detailed comments in **Attachment A**, on the assessment requirements for inclusion in the Environmental Assessment (EA) for this Application.

NOW requires that the EA for the proposed project demonstrate the following:

1. Adequate and secure water supply is available for the life of the proposed project. This includes confirmation that water supplies for construction and operation of the mine and associated activities are sourced from an appropriately authorised and reliable supply in accordance with the rules of relevant water sharing plans, including the *Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Sources 2003*, the *Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources 2003* and the proposed *Water Sharing Plan for the NSW Murray Darling Basin Porous Rock Groundwater Sources 2011* (to commence 1 July 2011).
2. Compliance with the rules in relevant water sharing plans, in particular, rules for access licences, distance restrictions for water supply works and the process of assessment with respect to water source protection criteria.
3. Baseline monitoring (minimum of fortnightly data) of all surface and groundwater sources and dependent ecosystems within and adjacent to the mining operation area for calibration of models.
4. Predictive assessments of the impact of the proposed project on surface and groundwater sources, basic landholder rights to water, adjacent licensed water users and groundwater dependent ecosystems, which are compiled from data collected over a minimum time period of two years.

5. Adequate monitoring of all surface and groundwater sources and dependent ecosystems within and adjacent to the mining operation area to verify predictive assessments made on the impact of the proposed project on surface and groundwater sources. This generally requires at least two years surface and groundwater data to form an adequate baseline.
6. Mitigation strategies to address unavoidable impacts on surface and groundwater sources and dependent ecosystems, for the operational and post mining phases of the proposed project and final landform hydrogeological regime.
7. Measures to maintain upstream flows in Goonbri Creek to the downstream environment past the mining development which do not form a risk to the geomorphic stability, integrity and water quality of Goonbri Creek.

To demonstrate the above, the following information is essential for inclusion in the EA:

8. Identification of site water demands in terms of both volume and timing for the life of the proposed project. This is to include details of any water reticulation infrastructure and vehicles that supply water to the site.
9. A description and assessment of any requirements (including potential requirements) to intercept groundwater, including predicted dewatering volumes, zone of drawdown and associated impact, and water quality and disposal methods.
10. Definition of the boundary limits to Goonbri Creek, Bollol Creek and the Upper Namoi alluvium; and assessment and justification for the nominated boundary limits. Full geomorphological, hydrological and salinity assessment of the surface and alluvial groundwater systems associated with Goonbri Creek, Bollol Creek and the Upper Namoi alluvium.
11. Salinity budget, including an evaluation of salt migration to any surface water sources and justification for any salinity discharge changes pre to post mining.
12. Analysis of the water sources affected by the proposed project, and identification of which water sources are the subject of a water sharing plan.
13. Detailed assessment of the impact of the proposed project on surface and groundwater sources, basic landholder rights to water, adjacent licensed water users and groundwater dependent ecosystems; and analysis of the effect of any predicted impacts on water sharing arrangements prescribed in any relevant water sharing plans. This must address the hierarchy of water source value and dependence, including but not limited to impacts on the following: yield or flow classes; quality; connectivity between porous/fractured rock, alluvial and surface water sources; environmental dependence and dependence for basic landholder rights; and environmental water established and maintained by the plan rules.
14. Analysis of options for the proposed project in terms of achieving avoidance of impacts to surface and groundwater sources, basic landholder rights to water, adjacent licensed water users and groundwater dependent ecosystems. If the options analysis cannot demonstrate avoidance, then sufficient mitigation, remediation and rehabilitation options must be examined.

15. Detailed examination of options to remediate and rehabilitate any excavated/disturbed areas of Goonbri Creek and its alluvium, and justification for criteria regarding completion of the proposed project rehabilitation program.

An expanded list of key issues to be addressed in the EA is provided in **Attachment A**.

If you require further information please contact Elizabeth Cala on 4904 2533.

Yours sincerely



Mark Mignanelli

Manager Major Projects and Assessment



Tarrawonga Coal Project (11_0047)

NSW Office of Water Director-General's Requirements

1. Legislation

The EA is required to take into account the objects and regulatory requirements of the *Water Act 1912* and *Water Management Act 2000* (WMA 2000), as applicable.

2. Water Sharing Plans

Water sharing plans (WSP), which are prepared under the provisions of the WMA 2000, establish rules for access to and the sharing of water between the environment and water users.

The proposed project is located within the plan area for the *Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources 2003*, and the proposed *Water Sharing Plan for the NSW Murray Darling Basin Porous Rock Groundwater Sources 2011* (to commence 1 July 2011).

The proposed project is also located close to the Namoi River, for which the *Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Sources 2003* is in force.

The EA is required to demonstrate how the proposed project is consistent with the relevant rules in these WSPs, including rules for access licences and rules for the management of local impacts. In particular, the EA must demonstrate that rules governing access to water within the surface and groundwater sources affected by the proposed project are appropriately incorporated into planning for the proposed project, and that rules governing ecosystem protection, water quality and surface-groundwater connectivity are fully considered.

NOW requires this to be addressed in a separate section of the EA, with a checklist of rules under these WSPs governing:

- planned and adaptive environmental water provisions,
- water supply work approvals (considering the mining excavation as forming a work that has, or could have, the effect of diverting water flowing to or from a water source, as defined in the WMA 2000),
- long term average extraction limits and available water determinations for the life of the proposed project, then in to final landform and post mining hydrological configuration,
- water allocation account management rules,

- total daily extraction limits and rules governing environmental protection,
- surface and groundwater connectivity, and
- access licence dealings.

3. State Government Technical and Policy Documents

The EA must address the NSW State Government natural resource management policies, as applicable. These policies include but are not limited to:

- NSW Inland Groundwater Shortage Zones Order No. 2 (2008)
- NSW State Groundwater Policy Framework Document (1997)
- NSW State Groundwater Quantity Management Policy (1998)
- NSW State Groundwater Quality Protection Policy (1998)
- NSW State Groundwater Dependent Ecosystems Policy (2002)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)
- Australian and New Zealand Guidelines for Water Quality Monitoring and Reporting (2000)
- Guidelines for the Assessment and Management of Groundwater Contamination (2007)
- Guidelines for Groundwater Protection in Australia (1995)

4. Groundwater

NOW is responsible for the sustainable and integrated management of the groundwater sources of NSW for the benefit of both present and future generations. To ensure the sustainable and integrated management of groundwater sources which may be affected by this proposed project, NOW requires the following:

4.1 Licensing

The EA must identify all proposed groundwater extraction and all proposed water supply works which take groundwater, including bores and excavations for the purpose of investigation, extraction, dewatering, testing or monitoring.

The EA must provide details of the purpose, location and expected annual extraction volumes of all proposed groundwater extraction. The EA must also provide details of the purpose, location, construction details and expected annual extraction volumes for all proposed water supply works which take groundwater. Although Part 3A Major Projects are currently exempt from requiring a water supply work approval (s75U of the *Environmental Planning and Assessment Act 1979*), the EA must take into account the approval requirements of relevant water related legislation.

The EA must provide analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of any relevant water sharing plan.

4.2 Groundwater Sources

The EA is required to identify groundwater issues and potential degradation to groundwater sources and provide the following:

- Details on the groundwater sources which will be intersected or connected with during the mining operation.
- Baseline monitoring or data for a minimum of 2 years fortnightly sampling for groundwater quantity and quality for all aquifers within and adjacent to the mining operation area.
- Description of flow directions and rates, and the physical and chemical characteristics of the aquifers within the mine area and adjacent catchments.
- Details of the predicted highest groundwater table within the aquifers within the mine area and adjacent catchments.
- Extent of alluvium within the mine area and adjacent catchments, and details on connectivity of aquifers to watercourses within the mine area and adjacent catchments.
- Details of any works likely to result in pollutants infiltrating into the groundwater sources.
- Details of proposed methods of the disposal of waste water and approval from the relevant authority.
- Assessment of salinity in catchments downstream of the Goonbri Creek catchment.
- Assessment of the potential effects of mining operations on the quality of groundwater both in the short and long term.
- Details of the existing groundwater users within the area (including the environment) and details of any potential impacts on these users.
- Details on preventing groundwater pollution so that remediation is not required.
- Details of the predicted impacts of any final landform on the groundwater regime.
- Details of critical thresholds for negligible impacts to groundwater sources.
- Details of the results of any models or predictive tools used to predict groundwater drawdown, inflows into the site and impacts on affected water sources within the mine area and adjacent catchments.

4.3 Groundwater Dependent Ecosystems

The NSW Groundwater Dependent Ecosystem Policy provides principles for the management of groundwater dependent ecosystems (GDEs). The EA is required to demonstrate how the proposed project is consistent with these principles, especially Principle 5.

The EA must provide the following information:

- Identification of potential GDEs within the study area.
- Details of current GDE condition, and water quantity and quality required by the GDEs (based on minimum 2 year fortnightly baseline data).
- Details of a flora and fauna assessment for all GDEs, which includes macroinvertebrate and macrophyte diversity and abundance assessments within all watercourses within and adjacent to the mining area.
- Details of critical thresholds for negligible impacts.

The EA must also demonstrate the following:

- That, where possible, natural patterns of groundwater flow will be maintained.
- That groundwater extraction will be managed within defined limits, so that groundwater levels which are critical for GDEs will not be disrupted and that there is sufficient flow to sustain ecological processes and maintain biodiversity.
- That the proposed project will not pollute or cause adverse changes in groundwater quality, and that sufficient groundwater of suitable quality is available to GDEs when needed.
- That the precautionary principle is applied in the protection of GDEs, particularly with regard to the dynamics of flow and availability, and the species reliant on these attributes.
- Protective measures will minimise any impacts on GDEs and potential offset areas will be monitored and protected.

4.4 Contingency Measures

Where potential impacts on a groundwater source, GDE or water users are identified, the EA will need to identify threshold limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts. In particular, the EA must provide the following:

- Details of any proposed monitoring programs, including water level and quality data.
 - Reporting procedures for any monitoring program including mechanism for transfer of information to NOW.
 - Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category).
 - Description of the remedial measures or contingency plans proposed.
 - An assessment of any groundwater source/aquifer that may be sterilised as a consequence of the proposed project.
 - Any funding assurances covering the anticipated post development maintenance cost, for example, on-going groundwater monitoring for the nominated period.
-

5. Watercourse Protection

NOW is responsible for the sustainable and integrated management of the surface water sources of NSW for the benefit of both present and future generations. NOW is also responsible for protecting waterfront land from impacts arising from controlled activities. To ensure the sustainable and integrated management of surface water sources which may be affected by this proposed project, and to protect waterfront land from impacts arising from controlled activities which form part of this proposed project, NOW requires the following:

5.1 Licensing

The EA must identify all proposed surface water extraction and all proposed water supply works to take surface water.

The EA must provide details of the purpose, location and expected annual extraction volumes of all proposed surface water extraction. The EA must also provide details of the purpose, location, construction details and expected annual extraction volumes for all existing and proposed water supply works which take surface water, including pumps, dams, diversions, cuttings and levees. Although Part 3A Major Projects are currently exempt from requiring a water supply work approval (s75U of the *Environmental Planning and Assessment Act 1979*), the EA must take into account the approval requirements of relevant water related legislation.

The EA must provide analysis of the proposed water supply arrangements against the rules for access licences and other applicable requirements of any relevant water sharing plan.

5.2 Watercourses

The EA must include an assessment of the impact of the proposed project on watercourses and associated riparian vegetation and provide the following:

- Identification of sources of surface water within and adjacent to the mining area.
 - Baseline monitoring or data for a minimum of 2 years fortnightly sampling for surface water quantity and quality for all watercourses within and adjacent to the mining operation area.
 - Geomorphic assessment of Goonbri and Bollol Creeks and associated tributaries within the mining area, including details of stream order (using the Strahler System), river style and energy regimes both in channel and on any adjacent floodplains.
 - Geomorphic assessment of the Namoi River, including details of stream order (using the Strahler System), river style and energy regimes both in channel and on any adjacent floodplains.
 - Detailed description of any proposed development or diversion works including all construction, clearing, draining, excavation and filling.
 - Detailed description of all potential environmental impacts of any proposed development in terms of vegetation, sediment movement, channel stability, water quality and hydraulic regime.
-

- For the proposed construction of a Goonbri Creek diversion, a detailed design description and associated hydrologic and hydraulic modelling, impact assessment, and supporting stabilisation and rehabilitation measures. The impact assessment must include detailed information on the geomorphic character of the river, including hydrologic energy regimes under a range of discharge scenarios, energy management and dissipation, bedload transport, and biophysical maintenance of the river. The impact assessment should also include consideration of the existing riparian and aquatic environments, associated impacts and rehabilitation requirements.
- Details of the existing surface water users within the area (including the environment) and details of any potential impacts on these users.
- Description of the design features and measures to be incorporated into the proposed project to guard against long term actual and potential environmental disturbances, particularly in respect of maintaining the natural hydrological regime and sediment movement patterns and the identification of riparian buffers.
- Details of the impact on water quality and remedial measures proposed to address any possible adverse effects.
- Details of critical thresholds for negligible impacts to water sources

5.3 Riparian Protection

Riparian corridors form a transition zone between terrestrial and aquatic environments and perform a range of important environmental functions. The protection or restoration of vegetated riparian areas is important to maintain or improve the geomorphic form and ecological functions of watercourses through a range of hydrologic conditions.

Although Part 3A Major Projects are currently exempt from requiring a controlled activity approval (s75U of the *Environmental Planning and Assessment Act 1979*), the EA is required to take into account the approval requirements of relevant water related legislation, State policy including the NSW Rivers and Estuaries Policy and water management works approval guidelines, and the *Guidelines for Controlled Activities*.

5.4 Contingency Measures

Where potential impacts are identified, the EA will need to identify threshold limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing surface water resource and any dependent ecosystems or water users. In particular, the EA must provide the following:

- Details of any proposed monitoring programs, including flow rates and quality data.
 - Reporting procedures for any monitoring program including mechanism for transfer of information to NOW.
 - Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this includes surface water energy and water quality limits and thresholds, and any groundwater level triggers or a beneficial use category).
 - Description of the remedial measures or contingency plans proposed.
-

- Assessment of both operational and long term (post project period) impacts to any surface and/or ground water source which may be detrimentally affected
- Any funding assurances covering the anticipated post development maintenance cost, for example, stream rehabilitation maintenance and performance monitoring and/or on-going groundwater monitoring for the nominated period.

6. Water Management Structures

NOW is responsible for the management and licensing of water management structures. If the proposed project includes existing or proposed water management structures, the EA should provide information on the following:

- For existing structures:
 - Date of construction.
 - Details of the legal status/approval.
 - Details of any proposal to change the purpose of existing structures.
 - Details of any remedial work required to maintain the integrity of the existing structures.
- For existing and proposed structures:
 - Clarification if the structures are on a watercourse.
 - Details of the purpose, location and design specifications for the structures.
 - Size and storage capacity of the structures.
 - Calculation of the maximum harvestable right dam capacity for the site.
 - Details if the structures are affected by flood flows and changes in hydrologic and/or energy regime occurring as a consequence of the proposed project.
 - Details of any proposal for shared use, rights and entitlement of the structures.

7. Rehabilitation, Final Landform Management

The EA must include:

- Justification of the proposed final landform with regard to minimising the impact on local and regional groundwater and surface water systems.
 - The measures that would be established for the minimisation of impacts on local and regional groundwater and surface water systems, and for the ongoing management of the site following the cessation of the proposed project.
 - Detailed modelling of potential groundwater volume, flow and quality impacts associated with the presence of an inundated final void on identified receptors, specifically considering those environmental systems that are likely to be groundwater dependent.
-

- A detailed description of the measures to be put in place to ensure that sufficient resources are available to implement the proposed rehabilitation of water related impacts.

END ATTACHMENT A

28 April 2011



Mr Howard Reed
Manager Mining and Extractive Industries
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Attention: Colin Phillips



Dear Mr Reed

Tarrawonga Coal Project (11_0047)- Recommended Environmental Assessment Requirements

I refer to your request for the Department of Environment, Climate Change and Water's (DECCW's)¹ requirements for the environmental assessment (EA) for the above proposal received by DECCW on 28 March 2011.

DECCW has considered the details of the project as provided by the Department of Planning and has identified the information it requires to assess the project (see **Attachment 1**). The proponent should ensure that the EA is sufficiently comprehensive to enable DECCW to determine the extent of the impact(s) of the proposal.

The key issues requiring assessment for this project are summarised below:

1. Project alone and cumulative impacts on biodiversity, native vegetation and threatened species.
2. Project alone and cumulative impacts on air and noise (construction, operation and transport).
3. Project alone and cumulative impacts on surface and ground water.
4. Project alone and cumulative impacts on Aboriginal cultural heritage values.
5. Final landform and rehabilitation of mining void on cessation of operations.
6. Actions that will be taken to avoid or mitigate impacts or compensate for unavoidable impacts identified in 1-5 above.

In carrying out the assessment, the proponent should refer to the relevant guidelines as listed in **Attachment 2** and any relevant industry codes of practice and best practice management guidelines.

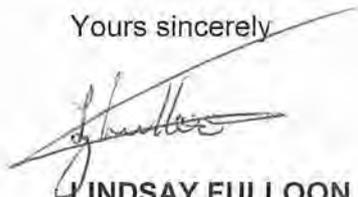
Please note that this submission does not incorporate comment from the "NSW Office of Water" who will be providing their environmental assessment requirements in a separate submission to the Department of Planning.

DECCW requests 2 hard copies of the EA for assessment. These documents should be lodged at PO Box 494 ARMIDALE NSW 2350. Please also provide an electronic copy of the EA with the requested hard copies.

¹ Staff of DECCW perform the functions of the National Parks and Wildlife Service and the Environment Protection Authority

If you have any queries regarding this matter please contact Kharl Turnbull on 02 6773 7000.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Lindsay Fulloon', written over a horizontal line.

LINDSAY FULLOON
A/ Head Regional Operations- Armidale
Environment Protection and Regulation

Enclosure: Attachment 1- DECCW's Recommended Environmental Assessment Requirements (EARs)
Attachment 2- Guidance Material

DECCW's Recommended Environmental Assessment Requirements (EARs)

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1 Environmental impacts of the project

1. Impacts related to the following environmental issues need to be assessed, quantified and reported on:
 - Aboriginal cultural heritage
 - Air Issues
 - air quality
 - greenhouse gas
 - Biodiversity
 - DECCW Estate
 - Land reserved or acquired under the NPW Act
 - Noise and vibration
 - Water and Soils
 - Soils - general
 - Water quality

Environmental assessments (EAs) should address the specific requirements outlined under each heading below and assess impacts in accordance with the relevant guidelines mentioned. A full list of guidelines is at **Attachment 2**.

2 Licensing requirements

1. It is noted that the project will need a variation to the existing Environment Protection Licence (EPL) under the *Protection of the Environment Operations Act 1997* (POEO Act) if approval is granted. The EA should address the requirements of Section 45 of the POEO Act and determine the extent of each impact and provide sufficient information to enable DECCW to determine appropriate limits for the EPL.
2. Additionally, it is noted that the proposed gravel crushing and screening onsite may also trigger the scheduled activities of "Crushing, grinding or separating" and "Extractive activities" under Schedule 1 of the POEO Act. As such, any submitted variation to the existing EPL should also address this if approval is granted.
3. Should project approval be granted, the proponent will need to make a separate application to DECCW for an EPL for the proposed facility prior to undertaking any on site works. Additional information is available through the *DECCW Guide to Licensing* document (www.environment.nsw.gov.au/licensing/licenceguide.htm).

SPECIFIC ISSUES

3 Aboriginal cultural heritage

The EA report should contain:

1. A description of the Aboriginal objects and declared Aboriginal places located within the area of the proposed development.
2. A description of the cultural heritage values, including the significance of the Aboriginal objects and declared Aboriginal places, that exist across the whole area that will be affected by the proposed development, and the significance of

these values for the Aboriginal people who have a cultural association with the land.

3. A description of how the requirements for consultation with Aboriginal people as specified in clause 80C of the National Parks and Wildlife Regulation 2009 have been met.
4. The views of those Aboriginal people regarding the likely impact of the proposed development on their cultural heritage. If any submissions have been received as a part of the consultation requirements, then the report must include a copy of each submission and your response.
5. A description of the actual or likely harm posed to the Aboriginal objects or declared Aboriginal places from the proposed activity, with reference to the cultural heritage values identified.
6. A description of any practical measures that may be taken to protect and conserve those Aboriginal objects or declared Aboriginal places.
7. A description of any practical measures that may be taken to avoid or mitigate any actual or likely harm, alternatives to harm or, if this is not possible, to manage (minimise) harm.
8. A specific Statement of Commitment that the proponent will complete an Aboriginal Site Impact Recording Form and submit it to the Aboriginal Heritage Information Management System (AHIMS) Registrar, for each AHIMS site that is harmed through the proposed development.

In addressing these requirements, the proponent must refer to the following documents:

- a) *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Planning, 2005). These guidelines identify the factors to be considered in Aboriginal cultural heritage assessments for development proposals under Part 3A of the EP&A Act.
- b) *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010) - <http://www.environment.nsw.gov.au/licences/consultation.htm>. This document further explains the consultation requirements that are set out in clause 80C of the National Parks and Wildlife Regulation 2009. The process set out in this document must be followed and documented in the Environmental Assessment Report.
- c) *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010) - <http://www.environment.nsw.gov.au/licences/archinvestigations.htm>. The process described in this Code should be followed and documented where the assessment of Aboriginal cultural heritage requires an archaeological investigation to be undertaken.

Notes:

1. An Aboriginal Site Impact Recording Form (http://www.environment.nsw.gov.au/licences/DECCA_HIMSSiteRecordingForm.htm) must be completed and submitted to the Aboriginal Heritage Information

Management System (AHIMS) Registrar, for each AHIMS site that is harmed through archaeological investigations required or permitted through these environmental assessment requirements.

2. Under section 89A of the *National Parks and Wildlife Act 1974*, it is an offence for a person not to notify DECCW of the location of any Aboriginal object the person becomes aware of, not already recorded on the Aboriginal Heritage Information Management System (AHIMS). An AHIMS Site Recording Form should be completed and submitted to the AHIMS Registrar (<http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm>), for each Aboriginal site found during investigations.

4 Air issues

4.1 Air quality

The EA should include a detailed air quality impact assessment (AQIA). The AQIA should:

1. Assess the risk associated with potential discharges of fugitive and point source emissions for all stages of the proposal. Assessment of risk relates to environmental harm, risk to human health and amenity.
2. Justify the level of assessment undertaken on the basis of risk factors, including but not limited to:
 - a. proposal location;
 - b. characteristics of the receiving environment; and
 - c. type and quantity of pollutants emitted.
3. Describe the receiving environment in detail. The proposal must be contextualised within the receiving environment (local, regional and inter-regional as appropriate). The description must include but need not be limited to:
 - a. meteorology and climate;
 - b. topography;
 - c. surrounding land-use; receptors; and
 - d. ambient air quality.
4. Include a detailed description of the proposal. All processes that could result in air emissions must be identified and described. Sufficient detail to accurately communicate the characteristics and quantity of all emissions must be provided.
5. Include a consideration of 'worst case' emission scenarios and impacts at proposed emission limits.
6. Account for cumulative impacts associated with existing emission sources as well as any currently approved developments linked to the receiving environment.
7. Include air dispersion modelling where there is a risk of adverse air quality impacts, or where there is sufficient uncertainty to warrant a rigorous numerical impact assessment. Air dispersion modelling must be conducted in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (2005)
<http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf>.

8. Demonstrate the proposal's ability to comply with the relevant regulatory framework, specifically the *Protection of the Environment Operations (POEO) Act (1997)* and the *POEO (Clean Air) Regulation (2002)*.
9. Provide an assessment of the project in terms of the priorities and targets adopted under the NSW State Plan 2010 and its implementation plan Action for Air.
10. Detail emission control techniques/practices that will be employed by the proposal.

4.2 Greenhouse gas

1. The EA should include a comprehensive assessment of, and report on, the project's predicted greenhouse gas emissions (tCO₂e). Emissions should be reported broken down by:
 - a) direct emissions (scope 1 as defined by the Greenhouse Gas Protocol – see reference below),
 - b) indirect emissions from electricity (scope 2), and
 - c) upstream and downstream emissions (scope 3)

before and after implementation of the project, including annual emissions for each year of the project (construction, operation and decommissioning).

2. The EA should include an estimate of the greenhouse emissions intensity (per unit of production). Emissions intensity should be compared with best practice if possible.
3. The emissions should be estimated using an appropriate methodology, in accordance with NSW, Australian and international guidelines (see below).
4. The proponent should also evaluate and report on the feasibility of measures to reduce greenhouse gas emissions associated with the project. This could include a consideration of energy efficiency opportunities or undertaking an energy use audit for the site.

Guidance Material

- The Greenhouse Gas Protocol: Corporate Standard, World Council for Sustainable Business Development & World Resources Institute
<http://www.ghgprotocol.org/standards/corporate-standard>
- National Greenhouse Accounts (NGA) Factors, Australian Department of Climate Change (Latest release),
<http://www.climatechange.gov.au/publications/greenhouse-acctg/national-greenhouse-factors.aspx>
- National Greenhouse and Energy Reporting System, Technical Guidelines (latest release) <http://www.climatechange.gov.au/en/government/initiatives/national-greenhouse-energy-reporting/tools-resources.aspx>
- National Carbon Accounting Toolbox
<http://www.climatechange.gov.au/government/initiatives/ncat.aspx>
- Australian Greenhouse Emissions Information System (AGEIS)
<http://ageis.climatechange.gov.au/>

5 Biodiversity

Biodiversity impacts can be assessed using **either** the BioBanking Assessment Methodology (scenario 1) or a detailed biodiversity assessment (scenario 2). The requirements for each of these approaches are detailed below.

The BioBanking Assessment Methodology can be used **either** to obtain a BioBanking statement, or to assess impacts of a proposal and to determine required offsets without obtaining a statement. In the latter instances, if the required credits are not available for offsetting, appropriate alternative options may be developed in consultation with DECCW officers and in accordance with DECCW policy.

Scenario 1 - Where a proposal is assessed using the BioBanking Assessment Methodology (BBAM):

1. Where a BioBanking Statement is being sought under Part 7A of the *Threatened Species Conservation Act 1995* (TSC Act), the assessment must be undertaken by an accredited BioBanking assessor (as specified under Section 142B (1)(c) of the TSC Act 1995) and done in accordance with the *BioBanking Assessment Methodology and Credit Calculator Operational Manual* (DECCW, 2008). To qualify for a BioBanking Statement a proposal must meet the improve or maintain standard.
 - 1a. The EA should include a specific Statement of Commitments that reflects all requirements of the BioBanking Statement including the number of credits required and any DG approved variations to impact on Red Flags.
2. Where the BioBanking Assessment Methodology is being used to assess impacts of a proposal and to determine required offsets, and a BioBanking Statement is not being obtained, the EA should contain a detailed biodiversity assessment and all components of the assessment must be undertaken in accordance with the *BioBanking Assessment Methodology and Credit Calculator Operational Manual* (DECCW, 2008).
 - 2a. The EA should include a specific Statement of Commitments which:
 - is informed by the outcomes of the proposed BioBanking assessment offset package;
 - sets out the ecosystem and species credits required by the BioBanking Assessment Methodology and how these ecosystem and/or species credits will be secured and obtained;
 - if the ecosystem or species credits cannot be obtained, provides appropriate alternative options to offset expected impacts, noting that an appropriate alternative option may be developed in consultation with DECCW officers and in accordance with DECCW policy;
 - demonstrates how all options have been explored to avoid red flag areas;
 - includes all relevant 'BioBanking files (e.g. *.xml output files), data sheets and documentation (including maps, aerial photographs, GIS shape files, other remote sensing imagery etc.) to ensure DECCW can conduct an appropriate review of the assessment.
3. Where appropriate, likely impacts (both direct and indirect) on any adjoining and/or nearby DECCW estate reserved under the *National Parks and Wildlife Act 1974* or any marine and estuarine protected areas under the *Fisheries Management Act 1994* or the *Marine Parks Act 1997* should be considered.

Please refer to the *Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water* (DECCW, 2010).

4. With regard to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify and assess any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

Scenario 2 - Where a proposal is assessed outside the BioBanking Assessment Methodology:

1. The EA should include a detailed biodiversity assessment, including assessment of impacts on threatened biodiversity, native vegetation and habitat. This assessment should address the matters included in the following sections.
2. A field survey of the site should be conducted and documented in accordance with relevant guidelines, including:
 - the *Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna -Amphibians* (DECCW, 2009)
 - *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft* (DEC, 2004), and
 - Threatened species survey and assessment guideline information on www.environment.nsw.gov.au/threatenedspecies/surveyassessmentgdlns.htm.

If a proposed survey methodology is likely to vary significantly from the above methods, the proponent should discuss the proposed methodology with DECCW prior to undertaking the EA, to determine whether DECCW considers that it is appropriate.

Recent (less than five years old) surveys and assessments may be used.

However, previous surveys should not be used if they have:

- been undertaken in seasons, weather conditions or following extensive disturbance events when the subject species are unlikely to be detected or present, or
- utilised methodologies, survey sampling intensities, timeframes or baits that are not the most appropriate for detecting the target subject species,

unless these differences can be clearly demonstrated to have had an insignificant impact upon the outcomes of the surveys. If a previous survey is used, any additional species listed under the TSC Act since the previous survey took place, must be surveyed for.

Determining the list of potential threatened species for the site must be done in accordance with the *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft* (DEC, 2004) and the *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005). The DECCW Threatened Species website <http://www.environment.nsw.gov.au/threatenedspecies/> and the *Atlas of NSW Wildlife* database must be the primary information sources for the list of threatened species present. The BioBanking Threatened Species Database, the Vegetation Types databases (available on DECCW website at <http://www.environment.nsw.gov.au/biobanking/biobankingtspd.htm> and

<http://www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm>, respectively) and other data sources (e.g. PlantNET, Online Zoological Collections of Australian Museums (<http://www.ozcam.org/>), previous or nearby surveys etc.) may also be used to compile the list.

3. The EA should contain the following information as a minimum:
 - a. The requirements set out in the *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005).
 - b. Description and geo-referenced mapping of study area (and spatial data files), e.g. overlays on topographic maps, satellite images and /or aerial photos, including details of map datum, projection and zone, all survey locations, vegetation communities (including classification and methodology used to classify), key habitat features and reported locations of threatened species, populations and ecological communities present in the subject site and study area.
 - c. Description of survey methodologies used, including timing, location and weather conditions.
 - d. Details, including qualifications and experience of all staff undertaking the surveys, mapping and assessment of impacts as part of the EA.
 - e. Identification of national and state listed threatened biota known or likely to occur in the study area and their conservation status.
 - f. Description of the likely impacts of the proposal on biodiversity and wildlife corridors, including direct and indirect and construction and operation impacts. Wherever possible, quantify these impacts such as the amount of each vegetation community or species habitat to be cleared or impacted, or any fragmentation of a wildlife corridor.
 - g. Identification of the avoidance, mitigation and management measures that will be put in place as part of the proposal to avoid or minimise impacts, including details about alternative options considered and how long term management arrangements will be guaranteed.
 - h. Description of the residual impacts of the proposal. If the proposal cannot adequately avoid or mitigate impacts on biodiversity, then a biodiversity offset package is expected (see the requirements for this at point 6 below).
 - i. Provision of specific Statement of Commitments relating to biodiversity.
4. An assessment of the significance of direct and indirect impacts of the proposal must be undertaken for threatened biodiversity known or considered likely to occur in the study area based on the presence of suitable habitat. This assessment must take into account:
 - a. the factors identified in s.5A of the EP&A Act, and
 - b. the guidance provided by *The Threatened Species Assessment Guideline – The Assessment of Significance* (DECCW, 2007) which is available at: <http://www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf>
5. Where an offsets package is proposed by a proponent for impacts to biodiversity (and a BioBanking Statement has not been sought) this package should:
 - a) Meet DECCW's *Principles for the use of biodiversity offsets in NSW*, which are available at: www.environment.nsw.gov.au/biocertification/offsets.htm.
 - b) Identify the conservation mechanisms to be used to ensure the long term protection and management of the offset sites.
 - c) Include an appropriate Management Plan (such as vegetation or habitat) that has been developed as a key amelioration measure to ensure any proposed compensatory offsets, retained habitat enhancement features within the development footprint and/or impact mitigation measures

(including proposed rehabilitation and/or monitoring programs) are appropriately managed and funded.

6. Where appropriate, likely impacts (both direct and indirect) on any adjoining and/or nearby DECCW estate reserved under the *National Parks and Wildlife Act 1974* or any marine and estuarine protected areas under the *Fisheries Management Act 1994* or the *Marine Parks Act 1997* should be considered. Refer to the *Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water* (DECC, 2010).
7. With regard to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

6 DECCW estate

6.1 Land reserved or acquired under the *National Parks and Wildlife Act 1974 (NPW Act)*

The EA should include:

1. Consideration of the matters identified in the *Guidelines for developments adjoining land and water managed by DECCW (DECCW 2010)*.
2. A description of the mitigation and management options that will be used to prevent, control, abate or minimise identified impacts associated with the project. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

7 Noise and vibration

1. In relation to noise, the following matters should be addressed (where relevant) as part of the Environmental Assessment. [*delete those that are not relevant to the proposal*]

General

2. Construction noise associated with the proposed development should be assessed using the *Interim Construction Noise Guideline* (DECC, 2009). <http://www.environment.nsw.gov.au/noise/constructnoise.htm>
3. Vibration from all activities (including construction and operation) to be undertaken on the premises should be assessed using the guidelines contained in the *Assessing Vibration: a technical guideline* (DEC, 2006). <http://www.environment.nsw.gov.au/noise/vibrationguide.htm>
4. If blasting is required for any reasons during the construction or operational stage of the proposed development, blast impacts should be demonstrated to be capable of complying with the guidelines contained in *Australian and New Zealand Environment Council – Technical basis for guidelines to minimise*

annoyance due to blasting overpressure and ground vibration (ANZEC, 1990).
<http://www.environment.nsw.gov.au/noise/blasting.htm>

Industry

5. Operational noise from all industrial activities (including private haul roads and private railway lines) to be undertaken on the premises should be assessed using the guidelines contained in the *NSW Industrial Noise Policy* (EPA, 2000) and *Industrial Noise Policy Application Notes*.
<http://www.environment.nsw.gov.au/noise/industrial.htm>

Road

6. Noise on public roads from increased road traffic generated by land use developments should be assessed using the guidelines contained in the *Environmental Criteria for Road Traffic Noise* (EPA, 1999).
<http://www.environment.nsw.gov.au/noise/traffic.htm>
7. Noise from new or upgraded public roads should be assessed using the *Environmental Criteria for Road Traffic Noise* (EPA, 1999).
<http://www.environment.nsw.gov.au/noise/traffic.htm>

Railway

8. Noise from new or upgraded railways (other than railways on private premises) should be assessed using the *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects* (DECC, 2007).
<http://www.environment.nsw.gov.au/noise/railinfranoise.htm>
9. Noise from increased rail traffic on the NSW Rail Network resulting from rail traffic generating development (e.g. an extractive industry) should be assessed using the environmental assessment requirements for rail traffic-generating developments available at
<http://www.environment.nsw.gov.au/noise/railnoise.htm>

8 Water and soils

8.1 Soil issues - general

The EA should include:

1. An assessment of potential impacts on soil and land resources should be undertaken, being guided by *Soil and Landscape Issues in Environmental Impact Assessment* (DLWC 2000). The nature and extent of any significant impacts should be identified. Particular attention should be given to:
 - a. Soil erosion and sediment transport - in accordance with *Managing urban stormwater: soils and construction*, vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; B Waste landfills; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (DECC 2008).
 - b. Mass movement (landslides) – in accordance with *Landslide risk management* guidelines presented in Australian Geomechanics Society (2007).

- c. Urban and regional salinity – guidance given in the Local Government Salinity Initiative booklets which includes *Site Investigations for Urban Salinity* (DLWC, 2002).
2. A description of the mitigation and management options that will be used to prevent, control, abate or minimise identified soil and land resource impacts associated with the project. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.
 3. Where required, add any specific assessment requirements relevant to the project.

8.2 Water

Describe Proposal

1. Describe the proposal including position of any intakes and discharges, volumes, water quality and frequency of all water discharges.
2. Demonstrate that all practical options to avoid discharge have been implemented and environmental impact minimised where discharge is necessary.
3. Where relevant include a water balance for the development including water requirements (quantity, quality and source(s)) and proposed storm and wastewater disposal, including type, volumes, proposed treatment and management methods and re-use options.

Background Conditions

4. Describe existing surface and groundwater quality. An assessment needs to be undertaken for any water resource likely to be affected by the proposal.

Proponents are generally only expected to source available data and information. However, proponents of relatively large and/or high risk developments may be required to collect some ambient water quality / river flow / groundwater data to enable a suitable level of impact assessment. Issues to include in the description of the receiving waters could also include, for example:

- water chemistry
- a description of receiving water processes, circulation and mixing characteristics and hydrodynamic regimes
- lake or estuary flushing characteristics
- sensitive ecosystems or species conservation values
- specific human uses (e.g. fishing, proximity to recreation areas)
- a description of any impacts from existing industry or activities on water quality
- a description of the condition of the local catchment e.g. erosion, soils, vegetation cover, etc.
- an outline of baseline groundwater information, including, for example, depth to watertable, flow direction and gradient, groundwater quality, reliance on groundwater by surrounding users and by the environment
- historic river flow data

5. State the Water Quality Objectives for the receiving waters relevant to the proposal. These refer to the community's agreed environmental values and human uses endorsed by the NSW Government as goals for ambient waters (<http://www.environment.nsw.gov.au/ieo/index.htm>). Where groundwater may be impacted the assessment should identify appropriate groundwater environmental values.
6. State the indicators and associated trigger values or criteria for the identified environmental values. This information should be sourced from the ANZECC (2000) Guidelines for Fresh and Marine Water Quality (http://www.mincos.gov.au/publications/australian_and_new_zealand_guidelines_for_fresh_and_marine_water_quality).
7. State any locally specific objectives, criteria or targets which have been endorsed by the NSW Government.

Impact Assessment

8. Describe the nature and degree of impact that any proposed discharges will have on the receiving environment.

Depending on the nature, scale and/or risk of the proposal, this could include specific requirements to consider impacts on, for example:

- water circulation, current patterns, water chemistry and other appropriate characteristics such as clarity, temperature, nutrient and toxicants
- changes to hydrology (including drainage patterns, surface runoff yield, flow regimes, and groundwater)
- disturbance of acid sulphate soils and potential acid sulfate soils
- stream bank stability and impacts on macro invertebrates

Depending on the nature, scale and/or risk of the proposal, modelling, monitoring, or both, may need to be undertaken to assess the potential impact of discharges on the receiving environment. If modelling is required to assess the potential impact of any discharge(s), this could include, for example:

- a range of scenarios that encompass any variations in discharge quality and quantity as well as the relevant range of environmental conditions of the receiving waters. The scenarios could describe a set of worst-case conditions and typical conditions to ensure that both acute and chronic impacts are assessed
- assumptions used in the modelling, including identification and discussion of the limitations and assumptions to ensure full consideration of all factors, including uncertainty in predictions.

The internal DECCW document *Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones* (<http://deccnet/water/resources/AWQGuidance7.pdf>) provides guidance on modelling considerations and principles for discharges to receiving waters.

9. Assess impacts against the relevant ambient water quality outcomes. Demonstrate how the proposal will be designed and operated to:
 - protect the Water Quality Objectives for receiving waters where they are currently being achieved; and

- contribute towards achievement of the Water Quality Objectives over time where they are not currently being achieved.
10. Where a discharge is proposed that includes a mixing zone, the proposal should demonstrate how wastewater discharged to waterways will ensure the ANZECC (2000) water quality criteria for relevant chemical and non-chemical parameters are met at the edge of the initial mixing zone of the discharge, and that any impacts in the initial mixing zone are demonstrated to be reversible.
 11. Assess impacts on groundwater and groundwater dependent ecosystems.
 12. Describe how stormwater will be managed both during and after construction.

Monitoring

13. Describe how predicted impacts will be monitored and assessed over time.

For relatively large and/or high risk developments, proponents should develop a water quality and aquatic ecosystem monitoring program to monitor the responses for each component or process that affects the Water Quality Objectives that includes, for example:

- adequate data for evaluating compliance with water quality standards and/or Water Quality Objectives
- measurement of pollutants identified or expected to be present in any discharge

Water quality monitoring should be undertaken in accordance with the *Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)* (<http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf>).

Attachment 2 – Guidance Material

Title	Web address
<u>Relevant Legislation</u>	
<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>	http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
<i>Contaminated Land Management Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+140+1997+cd+0+N
<i>Environmentally Hazardous Chemicals Act 1985</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+14+1985+cd+0+N
<i>Environmental Planning and Assessment Act 1979</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
<i>Fisheries Management Act 1994</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N
<i>National Parks and Wildlife Act 1974</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
<i>Protection of the Environment Operations Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
<i>Threatened Species Conservation Act 1995</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N
<i>Water Management Act 2000</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
<u>Licensing</u>	
DECCW Guide to Licensing	www.environment.nsw.gov.au/licensing/licenceguide.htm
<u>Aboriginal Cultural Heritage</u>	
Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (2005)	Available from DoP.
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	http://www.environment.nsw.gov.au/licences/consultation.htm
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	http://www.environment.nsw.gov.au/licences/archinvestigations.htm
Aboriginal Site Impact Recording Form	http://www.environment.nsw.gov.au/licences/DECCAHIMSSiteRecordingForm.htm
Aboriginal Heritage Information Management System (AHIMS) Registrar	http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm
<u>Air Issues</u>	
Air Quality	
Approved methods for modelling and assessment of air pollutants in NSW (2005)	http://www.environment.nsw.gov.au/resources/air/ammodelling05361.pdf
POEO (Clean Air) Regulation 2002	http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+

Title	Web address
	642+2002+cd+0+N
Greenhouse Gas	
The Greenhouse Gas Protocol: Corporate Standard, World Council for Sustainable Business Development & World Resources Institute	http://www.ghgprotocol.org/standards/corporate-standard
National Greenhouse Accounts (NGA) Factors, Australian Department of Climate Change (Latest release),	http://www.climatechange.gov.au/publications/greenhouse-acctg/national-greenhouse-factors.aspx
National Greenhouse and Energy Reporting System, Technical Guidelines (latest release)	http://www.climatechange.gov.au/en/government/initiatives/national-greenhouse-energy-reporting/tools-resources.aspx
National Carbon Accounting Toolbox	http://www.climatechange.gov.au/government/initiatives/ncat.aspx
Australian Greenhouse Emissions Information System (AGEIS)	http://ageis.climatechange.gov.au/
<u>Biodiversity</u>	
BioBanking Assessment Methodology (DECC, 2008)	http://www.environment.nsw.gov.au/resources/biobanking/08385bbassessmethod.pdf
BioBanking Assessment Methodology and Credit Calculator Operational Manual (DECCW, 2008)	http://www.environment.nsw.gov.au/biobanking/operationalmanual.htm
Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna -Amphibians (DECCW, 2009)	http://www.environment.nsw.gov.au/resources/threatenedspecies/09213amphibians.pdf
Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft (DEC, 2004)	http://www.environment.nsw.gov.au/resources/nature/TBSAGuidelinesDraft.pdf
Guidelines for Threatened Species Assessment (Department of Planning, July 2005)	Draft available from DoP
DECCW Threatened Species website	http://www.environment.nsw.gov.au/threatenedspecies/
Atlas of NSW Wildlife	http://wildlifeatlas.nationalparks.nsw.gov.au/wildlifeatlas/watlas.jsp
BioBanking Threatened Species Database	http://www.environment.nsw.gov.au/biobanking/biobankingtspd.htm
Vegetation Types databases	http://www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm
PlantNET	http://plantnet.rbgsyd.nsw.gov.au/
Online Zoological Collections of Australian Museums	http://www.ozcam.org/
Threatened Species Assessment Guideline - The Assessment of Significance (DECCW, 2007)	http://www.environment.nsw.gov.au/resources/threatenedspecies/saguide07393.pdf

Title	Web address
Principles for the use of biodiversity offsets in NSW	http://www.environment.nsw.gov.au/biocertification/offsets.htm
<u>DECCW Estate</u>	
Land reserved or acquired under the NPW Act	
List of national parks	http://www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx
DECCW Revocation of Land Policy	http://www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm
Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010)	http://www.environment.nsw.gov.au/resources/protectedareas/10509devadjdeccw.pdf
<u>Noise and Vibration</u>	
Interim Construction Noise Guideline (DECC, 2009)	http://www.environment.nsw.gov.au/noise/constructnoise.htm
Assessing Vibration: a technical guideline (DEC, 2006)	http://www.environment.nsw.gov.au/noise/vibrationguide.htm
Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZEC, 1990)	http://www.environment.nsw.gov.au/noise/blasting.htm
Industrial Noise Policy Application Notes	http://www.environment.nsw.gov.au/noise/traffic.htm
Environmental Criteria for Road Traffic Noise (EPA, 1999)	http://www.environment.nsw.gov.au/noise/traffic.htm
Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects (DECC, 2007)	http://www.environment.nsw.gov.au/noise/railinfranoise.htm
Environmental assessment requirements for rail traffic-generating developments	http://www.environment.nsw.gov.au/noise/railnoise.htm
<u>Water and Soils</u>	
Soils – general	
Soil and Landscape Issues in Environmental Impact Assessment (DLWC 2000)	http://www.dnr.nsw.gov.au/care/soil/soil_pubs/pdfs/tech_rep_34_new.pdf
Managing urban stormwater: soils and construction, vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; B Waste landfills; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (DECC 2008)	Vol 1 - Available for purchase at http://www.landcom.com.au/whats-new/publications-reports/the-blue-book.aspx Vol 2 - http://www.environment.nsw.gov.au/stormwater/publications.htm
Landslide risk management guidelines	http://www.australiangeomechanics.org/resources/downloads/
Site Investigations for Urban Salinity	http://www.environment.nsw.gov.au/resources/salinity/booklet3site

Title	Web address
(DLWC, 2002)	investigationsforurbansalinity.pdf
Local Government Salinity Initiative Booklets	http://www.environment.nsw.gov.au/salinity/solutions/urban.htm
Water	
Water Quality Objectives	http://www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	http://www.mincos.gov.au/publications/australian_and_new_zealand_guidelines_for_fresh_and_marine_water_quality
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	http://deccnet/water/resources/AWQGuidance7.pdf
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf



OUT11/6678
19 April 2011

Mr Colin Phillips
Senior Planner
Mining Projects
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Carl Dumpleton

Dear Mr Phillips

**Tarrawonga Coal Project (11-0047)
Director General Requirements**

I refer to your letter dated 24 March 2011 requesting input into the Director General Requirements (DGRs) for the Tarrawonga Coal Project.

NSW Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS), formerly Industry and Investment NSW has reviewed the "Tarrawonga Coal Project Preliminary Environmental Assessment" (PEA) dated February 2011 and provides the following comments which are directed at specific areas of DTIRIS responsibility to assist in the framing of Director-General's requirements for an Environmental Assessment report (EA) for this proposal.

MINERAL RESOURCES ISSUES

MINING TITLES

As coal is a prescribed mineral under the *Mining Act 1992*, the proponent is required to hold appropriate mining titles from the Minister for Energy and Resources in order to mine this mineral.

The Project is within Mining Lease 1579 and Exploration Licence 5967 both held by Whitehaven Coal Mining Limited and Coal Lease 368 held by Boggabri Coal Pty Limited.

The proponent will need to submit a mining lease application (MLA) for the project.

DTIRIS Mineral Resources notes that the proponent for this project is Tarrawonga Coal Pty Ltd. DTIRIS Mineral Resources has recently advised the proponent that unless the project area is held under coal title in their name they will be required to obtain Ministers Consent to lodge a MLA, as

well as the consent of the current coal title holders. Alternatively the new MLA could be lodged in the name of Whitehaven Coal Mining Limited.

Furthermore the area of CL368 included in the proposed project will either need to be transferred to the proponent for the current title holder or alternatively if the proponent intends to lodge a MLA they would require the Ministers Consent and consent from Boggabri Coal Pty Limited as the current title holder when an MLA is applied for over part of their CL 368.

The EA should include plans clearly identifying the existing mining titles and proposed new mining titles.

The proponent should continue to liaise with DTIRIS Mineral Resources and identify as soon as practicable their preferred title options.

REHABILITATION

The proponent should include a Rehabilitation section in the EA which addresses the following aspects:

- Post Mining Land Use – the proponent must identify and assess post-mining land use options and provide a statement of the preferred post mining land use outcome in the EA. This should include a discussion of the benefits of the post mining land use to a subsequent landowner, the local community and the state of NSW.
- Rehabilitation Objectives and Domains – a set of project rehabilitation objectives must be included that clearly define the environmental outcomes required to achieve the post-mining land use. Identify each rehabilitation domain and describe rehabilitation objectives for each domain.
- Rehabilitation Methodology – outline general rehabilitation methods and procedures that will be employed by the project to ensure the rehabilitation objectives are met.
- Strategic Rehabilitation Completion Criteria – nominate strategic completion criteria for the five phases of the rehabilitation process, namely (1) Decommissioning; (2) Landform Establishment; (3) Growth Media Development; (4) Ecosystem Establishment; and (5) Ecosystem Development. If necessary, objective criteria may be presented as ranges rather than finite indicator levels. Subjective criteria may also apply where a gap in technical knowledge is experienced. It is expected that further refinement of these criteria will be undertaken and included in the Rehabilitation and Environmental Management Plan (REMP).
- Conceptual Final Landform Design – a drawing at an appropriate scale with final landform contours should be provided. This drawing should identify, but not be limited to, the following attributes of the

final landform: vegetation types; habitat features; contaminated areas; final voids; access and internal roads; fencing design; and other remaining infrastructure such as sheds, dams, bores and pipelines.

AGRICULTURAL

The EA should to consider:

- The impact on surrounding Agriculture from disturbance to surface and ground water flow, pressure, recharge etc.
- The impact on rural labour and rural communities. eg. what will the development mean for the maintenance of rural community halls and rural fire service membership
- post mining landuse and land capability and agricultural land capability
- A strategic approach to how the development may be staged so as to minimise the placement of over burden on agricultural land. eg through placement of over burden on pre mined areas with collaboration of Boggabri Coal.
- Agricultural land should not be used in Biodiversity offsets
- Significant weed species and risks within the proposed development footprint and develop weed suppression, management and containment strategies to ensure they are not spread. Particular attention should be paid to soil stockpiles, roadsides and disturbed areas.

FISHERIES

DTIRIS Fisheries Conservation and Aquaculture Branch (Fisheries) is responsible for ensuring that fish stocks are conserved and that there is “no net loss” of key fish habitats upon which they depend. To achieve this, the Department ensures that developments comply with the requirements of the *Fisheries Management Act 1994* (namely the aquatic habitat protection and threatened species conservation provisions in Parts 7 and 7A of the Act respectively) and the associated *Policy and Guidelines for Aquatic Habitat Management and Fish Conservation (1999)*. In addition the Department is responsible for ensuring the sustainable management of commercial and recreational fishing and aquaculture within NSW.

The EA should specifically address the impacts on the aquatic ecology, threatened species, hydrology, erosion and sedimentation, and in particular proposed offsets and compensatory habitats as proposed below;

GENERAL AQUATIC ECOLOGICAL ASSESSMENT

The aquatic ecological environmental assessment should include the following information;

- A recent aerial photograph (preferably colour) of the locality (or reproduction of such a photograph) should be provided.
- Area which may be affected either directly or indirectly by the development or activity should be identified and shown on an appropriately scaled map (and aerial photographs).
- Waterways within the area of development are to be identified.
- Description and quantification of aquatic and riparian vegetation should be presented and mapped. This should include an assessment of the extent and condition of riparian vegetation and the extent and condition of freshwater aquatic vegetation and the presence of significant habitat features (e.g. gravel beds, snags, reed beds, etc)
- Quantification of the extent of aquatic and riparian habitat removal or modification which will result from the proposed development,
- Detailed maps outlining the proposed realignment of new waterways within the project area.
- Detailed maps outlining compensatory habitats and significant habitat features that will be created to offset the loss of habitat.
- Detailed maps that outline and assess the geomorphic stability of the proposed realignments of the new waterways including re-creation of the sinuosity/complexity of the new waterways.
- Details of the location of all waterways crossings and construction designs, such as bridges or culverts for proposed haul roads, etc.
- Details of the location of all waterway realignments, including a detailed rehabilitation plan for the aquatic environment and the adjacent riparian zone, and a timetable for construction of the proposal with details of various phases of construction.
- Aspects of the management of the proposal, both during construction and after completion, which relate to impact minimisation e.g. Environment Management Plans. e.g. Monitoring geomorphic stability of the system and mitigation strategies in place to address any bed lowering, scouring or other impacts that arise as a result of the project.
- Monitoring of the water quality in receiving waters downstream of diverted creeks, particularly during the construction phase, and also during the operational phase.

KEY ISSUES

THREATENED SPECIES, POPULATIONS AND ECOLOGICAL COMMUNITIES— FISHERIES MANAGEMENT ACT 1994

The EA should include a threatened aquatic species assessment (as per part 7A *Fisheries Management Act 1994*) to address whether there are likely to be any significant impacts on listed threatened species, populations or ecological communities listed under the *Fisheries Management Act 1994*. Assessment of the impacts should include initial 'Seven-Part Test's. Species, populations and ecological communities likely to be present within this catchment include;

- The olive perchlet *Ambassis agassizii* listed under Schedule 4, (Endangered populations) of the *FM Act*.
- The silver perch *Bidyanus bidyanus* listed under Schedule 5 (Vulnerable species) of the *FM Act*.
- The purple-spotted gudgeon *Mogurnda adspersa* is listed under Schedule 4, (Endangered species) of the *FM Act*.
- The eel tailed catfish (*Tandanus tandanus*) is listed under Schedule 4, (Endangered population within Murray Darling Basin) of the *FM Act*.
- The Murray cod *Maccullochella peellii peellii* are nationally listed as vulnerable under the *EPBC Act*.
- The aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River is listed as an *Endangered Ecological Community* under Schedule 4, of the *FM Act*.

WATERWAY CROSSINGS

The design and construction of bridges, culverts and access tracks across all waterways should be undertaken in accordance with the Department's Policy and *Guidelines for Fish Friendly Waterway Crossings (2004)* and *Why Do Fish Need to Cross the Road?* The waterway crossings need to ensure that the works are undertaken with minimal impact on the aquatic environment within the immediate vicinity of the proposed works. DTIRIS Fisheries need to be consulted with regards to any temporary measures that will result in blocking fish passage. This includes coffer dams, temporary access tracks or redirecting flows whilst works are conducted.

HYDROLOGICAL IMPACTS

The EA should include:

- Assessment of likely impacts on surface water hydrology and groundwater hydrology including the capture of surface water or the redirection of surface water.
- The impacts of altered hydrology on associated aquatic ecosystems. Changes in flow patterns may result in the death of aquatic and riparian vegetation that relies on surface water/shallow ground water flows.
- Monitoring of groundwater and surface water interactions to ensure that no negative impacts on surface water quantity or quality.
- Assessment of long term impacts on surface water and associated aquatic ecological impacts
- Potential amelioration of impacts

EROSION AND SEDIMENTATION

Proposed changes to surface water flow patterns and diverting water over unprotected areas of land are likely to result in direct and indirect impacts on fish habitat. The EA will need to address the following matters:

- Detailed "Sediment and Erosion Control Plans" will need to be developed (sediment basins, sediment fences, filters, diversion channels, etc).
- Sediment and Erosion Control Plans will need to be monitored for their effectiveness.
- Details of monitoring of the water quality of the receiving waters in nearby watercourses, particularly after rainfall events. There should be no net increase in sediment/nutrient loads entering watercourses.

COMPENSATORY HABITATS AND OFFSETS

A key outcome sought with rehabilitation and compensation measures is to ensure their longevity and ongoing management post initial construction or implementation. Compensatory habitats are a requirement if the environmental assessment indicates there may be a 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.

Fisheries have guidelines for compensatory habitat outlined in the document *Policy and Guidelines Aquatic Habitat Management and Fish Conservation 1999* available on the Department's website at:

<http://www.dpi.nsw.gov.au/fisheries/habitat/protecting-habitats/toolkit#Policies-&-guidelines>).

Fisheries maintains a no net loss of aquatic habitat policy. Compensatory habitats are calculated on a 2:1 basis. Fisheries will therefore require the negotiation of a compensatory habitat package to the satisfaction of DTIRIS if this project is to proceed to ensure that such outcomes are achieved.

Should you have any enquires regarding this matter please contact Julie Moloney, Principal Adviser, Industry Coordination on (02) 4931 6549.

Yours sincerely

W. Hughes
William Hughes
Director
Industry Coordination

for

APPENDIX B

COMMONWEALTH REQUIREMENTS

Director-General's Requirements for the Assessment of a Controlled Action under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999*

Section 75F(3) of the *Environmental Planning and Assessment Act 1979*

The Minister for Sustainability, Environment, Water, Population and Communities has declared the Tarrawonga Coal Project to be a controlled action under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The controlled action is likely to have a direct and indirect impact on matters of national environment significance, in particular, threatened species and/or threatened ecological communities listed under sections 18 and 18A, and migratory species listed under sections 20 and 20A of the EPBC Act.

In accordance with the one-off accredited assessment process for this project, the environmental assessment of the impacts of the controlled action is to be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The assessment should include enough information about the controlled action and its relevant impacts to allow the Minister for Sustainability, Environment, Water, Population and Communities to make an informed decision whether or not to approve the controlled action under the EPBC Act.

The following assessment requirements are to be integrated into the assessment required for Part 3A of the EP&A Act. The following matters in the EPBC Act and schedule 4 of the *Environment Protection and Biodiversity Conservation Regulations 2000* should be considered.

General information

1. The background of the action, including:
 - a. the title of the action;
 - b. the full name and postal address of the designated proponent;
 - c. a clear outline of the objective of the action;
 - d. the location of the action;
 - e. the background to the development of the action;
 - f. how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action;
 - g. the current status of the action; and
 - h. the consequences of not proceeding with the action.

Description of the controlled action

2. A description of the action, including:
 - a. all the components of the action;
 - b. the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts;

- c. how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts;
- d. to the extent reasonably practicable, a description of any feasible alternatives to the controlled action that have been identified through the assessment, and their likely impact, including:
 - i. if relevant, the alternative of taking no action;
 - ii. a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action;
 - iii. sufficient detail to clarify why any alternative is preferred to another.

A description of the relevant impacts of the controlled action

3. An assessment of all relevant impacts¹ with reference to the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines Matters of National Environmental Significance (2009)* that the controlled action has, will have or is likely to have on:
 - a. relevant threatened species and/or threatened ecological communities listed under sections 18 and 18A of the EPBC Act, including but not limited to:
 - White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland;
 - Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland;
 - Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia;
 - Weeping Myall Woodlands;
 - Regent Honeyeater (*Anthochaera phrygia*);
 - Swift Parrot (*Lathamus discolor*);
 - Greater Long-eared Bat (*Nyctophilus timorensis*)
 - Superb Parrot (*Polytelis swainsonii*)
 - Border Thick-tailed Gecko (*Underwoodiasaurus sphyrurus*)
 - Large-eared Pied Bat, Large Pied Bat (*Chalinolobus dwyeri*)
 - Finger Panic Grass (*Digitaria porrecta*)
 - *Homopholis belsonii* [2406] Vulnerable
 - Leek-orchid (*Prasophyllum sp. Wybong*) (C.Phelps ORG 5269)
 - Austral Toadflax (*Thesium austral*)
 - *Tylophora linearis* [55231]
 - *Pultenaea setulosa*
 - b. Relevant migratory species listed under sections 20 and 20A of the EPBC Act, including but not limited to:
 - White-bellied Sea-Eagle (*Haliaeetus leucogaster*)
 - White-throated Needletail (*Hirundapus caudacutus*)
 - Rainbow Bee-eater (*Merops ornatus*)
 - Regent Honeyeater (*Xanthomyza Phrygia*) (Also a listed threatened species)
 - Fork-tailed Swift (*Apis pacificus*)
 - Great Egret, White Egret (*Ardea alba*) (Also a listed marine and wetland species)
 - Cattle Egret (*Ardea ibis*)
 - Latham's Snipe, Japanese Snipe (*Gallinago hardwickii*)

¹ The term "relevant impact" is defined in section 82 of the EPBC Act.

- Painted Snipe (*Rostratula benghalensis s.lat*)

4. Information must include:

- a description of the relevant impacts of the action on matters of national environmental significance;
- a detailed assessment of the nature and extent of the likely short term and long term relevant impacts, including a detailed assessment of the impacts of diverting Goonbri Creek on the relevant threatened species and ecological communities and migratory species;
- a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;
- analysis of the significance of the relevant impacts;
- any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

5. The description of the impacts should include an analysis of the vegetation condition on the site, as well as the methods by which this was determined. It should also include direct, indirect, cumulative and facilitative impacts on the following EPBC-listed communities: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland; Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland; Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia; Weeping Myall Woodlands. For each community, it should include a description of:

- extent, including connectivity with other areas of the ecological community;
- quality or integrity (including, but not limited to, assisting invasive species, that are harmful to the ecological communities, to become established; or causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the communities which kill or inhibit the growth of species in the ecological community);
- EPBC Act listed species in, or in any way dependent upon, the ecological community;
- composition;
- habitat present on site critical to the survival of the ecological community²; and
- abiotic (non-living) factors (such as water, nutrients or soil) necessary for the ecological community's survival, for example increasing groundwater levels or making the site wetter, soil disturbance or substantial alteration of surface water drainage patterns.

These impacts should be described for the construction and operation phases of the controlled action.

6. Where there is a potential habitat for EPBC Act listed species, surveys must be undertaken. These surveys must be timed appropriately and undertaken for a suitable period of time by a

² "habitat critical to the survival of a species or ecological community" refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal;
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators);
- to maintain genetic diversity and long term evolutionary development; or
- for the reintroduction of population or recovery of the species or ecological community.

Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the register of Critical Habitat maintained by the Minister under the EPBC Act.

qualified person³. A subsequent description of the relevant impacts on such EPBC Act listed species should include, inter alia, direct, indirect, cumulative and facilitative impacts on the:

- a. population of the species at the site;
- b. area of occupancy of the species;
- c. habitat critical to the survival of the species;
- d. breeding cycle of the population; and
- e. availability or quality of habitat for the species.

Proposed safeguards and mitigation measures

7. A description of feasible mitigation measures, changes to the controlled action or procedures, which have been proposed by the proponent or suggested in public submissions, and which are intended to prevent or minimise relevant impacts. Information must include:
 - a. a description, and an assessment of the expected or predicted effectiveness of, the mitigation measures;
 - b. any statutory or policy basis for the mitigation measures;
 - c. the cost of the mitigation measures;
 - d. an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;
 - e. the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program;
 - f. a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action.

Offsets

8. Should any residual impact exist that cannot be mitigated it may be necessary for offset measures to be considered in order to ensure the protection of matters of national environmental significance in perpetuity.

Other approvals and conditions

9. Any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action. Information must include:
 - a. details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including:
 - i. what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy; and
 - ii. how the scheme provides for the prevention, minimisation and management of any relevant impacts;
 - b. a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action;
 - c. a statement identifying any additional approval that is required;

³ Where available, species-specific survey guidelines can be obtained on the department's *Species Profile and Threats Database*: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

- d. a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

Economic and social matters

10. A description of the short-term and long-term social and economic implications and/or impacts of the project.

Environmental record of person proposing to take the action

11. Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:
 - a. the proponent; and
 - b. for an action for which a person has applied for a permit, the person making the application.
12. Details of the proponent's environmental policy and planning framework.

Information sources

13. For information given in an environment assessment, the draft must state:
 - a. the source of the information;
 - b. how recent the information is;
 - c. how the reliability of the information was tested; and
 - d. what uncertainties (if any) are in the information.

Consultation

14. Any consultation about the action, including:
 - a. any consultation that has already taken place;
 - b. proposed consultation about relevant impacts of the action;
 - c. if there has been consultation about the proposed action — any documented response to, or result of, the consultation.
15. identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.