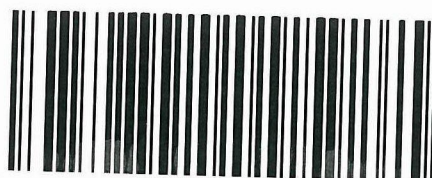




Office of
Environment
& Heritage



PCU022648

Your reference:

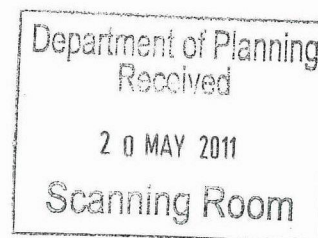
Our reference:

Contact:

DOC11/14150 LIC09/156

Karen Gallagher, 02 49086822

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



Dear Mr Phillips

MYUNA COAL PROJECT (10_0080) ENVIRONMENTAL ASSESSMENT

Reference is made to your letter to the Office of Environment and Heritage (OEH) dated 14 March 2011 requesting comments on the Myuna Coal Project (10_0080) Environmental Assessment (the EA) dated February 2011 and prepared by AECOM Australia Pty Ltd.

OEH understands that the proposed project will extend mining and coal handling at Myuna Colliery within the Project Application Area and proposes to:

- mine using board and pillar methods in the Wallarah, Great Northern and Fassifern seams in CCL762 and ML1370m for a further 21 years;
- produce, handle and distribute to Eraring Power Station, up to 2Mtpa using existing infrastructure;
- continue the use of ancillary infrastructure and services for a further 21 years;
- upgrade the water management system; and
- rehabilitate the surface facilities within 5 years of completion of mining.

OEH has conducted a review of the Myuna Colliery Extension of Mining Environmental Assessment and provides the following comments.

Noise Limits

The proponent has nominated in Table 7 of the EA an Estimated Myuna LA90 Contribution of 37dBA at Location 2 for Day and Evening, but proposes a value of 33dBA for night. The colliery however operates continuously 24 hours per day 7 days per week and no reason is given as to why the noise output should be any less during the night. OEH suggest that the 37dBA nominated by the proponent for Day and Evening could also apply to the night. However, noting that the Measured Background LA90 Noise Level at night-time at Location 2 is 36dBA, this value should be attributed to the Colliery. This would reduce the Adopted Background Level (Excluding Myuna) for night-time at Location 2 to 30dBA, the same as for Location 1.

This change in the night-time Adopted Background Level to 30dBA at location 2 consequently changes the Project Specific Noise Criteria in Table 11 of the EA to 35dBA at night-time for all receivers. However, given that the noise impact assessment (NIA) states that the proponent has not received any recent noise complaints, OEH has adopted a low risk approach of licensing to the proponent's predicted noise levels,

The Department of Environment, Climate Change and Water is now known as the
Office of Environment and Heritage, Department of Premier and Cabinet

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providing the proponent implements the recommended noise mitigation and management strategies in attachment A.

Air Quality

The Air Quality Impact Assessment (AQIA) provides a quantitative assessment of air emission impacts from the Project and was undertaken generally in accordance with the requirements outlined in the OEH document *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*. OEH as part of modernisation of monitoring recommends that new approvals replace ambient monitoring conducted under Approved Methods for Sampling and Analysis of Air Pollutants in NSW using AM15 with a requirement to monitor under AM19, this in effect replaces Hi Volume Air Samplers with TEOM's for ambient PM10 monitoring.

Water Management

It is understood from the EA that the proponent proposes to combine Licence Discharge Point (LDP) 1 and LDP 2 to become LDP B. OEH has no objections to the merger of these two discharge points as it is stated in the EA that to date the volume of water discharged through LDP 1 is 5.1ML/day and that this is expected to increase to 8.6ML/day over the life of the proposed project. The current discharge limit for LDP 1 is 12ML/day and LDP 2 is 1ML/day therefore this combined volumetric discharge limit of 13ML/day will be revised to reflect the commitments in the EA to 8.6ML/day. Further to this, concentration limits for Total Suspended Solids (50mg/L), pH (6.5-8.5) and oil and Grease (10mg/L) that are currently on the licence will be maintained along with the current heavy metal monitoring requirements.

The proposed LDP A, which will be at the Emergency Coal Stockpile Dam will also have concentration limits and monitoring requirements commensurate with LDP B. As stated in the EA, this emergency discharge point will only be licensed to discharge during rainfall events in excess of 140 millimetres in 24 hours.

Aquatic Ecology

The EA still does not consider the combined effects of mine subsidence, predicted sea-level increases and probable increases in water column light attenuation (due to runoff from increased development in the catchment and any wastewater discharge from the mine) on the benthic ecology.

Furthermore the EA does not address how any impacts will be remediated if subsidence greater than 20 mm does occur in seagrass beds in Zone A. The EA states that "impact of subsidence on seagrasses will be minimal provided that subsidence is less than 20mm in zone A and that seagrass management will be based on a "risk approach".

As stated in earlier correspondence OEH does not support risk based management processes or approaches, and further scientific data is required to ensure the proposed extension of underground mining potential impacts on existing seagrass populations can be assessed irrespective of subsidence rates. A sea grass assessment should be undertaken prior to any additional underground mining activities within zone A and a management strategy developed for monitoring and remedial action to prevent impacts on seagrasses from the proposal. This strategy should not be limited to subsidence greater than 20mm predicted.

In a meeting between the proponent and OEH on 6 May 2011, the proponent provided a proposal to undertake further investigations that would inform management actions to avoid or minimise predicted impacts on benthic micro and macro communities during secondary extraction within Zone B. In summary the suggested actions include:

- Establish a predictive model of reduction in light in Lake Macquarie and specifically for Mining Zone B based on field measures under different environmental conditions;
- Establish a baseline of data on micro and macro benthos by sampling in Zone B and at control locations. This data could be used at any time in the future to measure possible impacts due to subsidence or change caused by natural or other anthropogenic events;
- Conduct a high resolution Bathymetric survey of the Lake Bed in and adjacent to the proposal.

While OEH does not find that the EA adequately addresses the impacts of subsidence on the benthic micro and macro communities in Lake Macquarie. The proposal by the proponent to undertake the above mentioned investigations together with a condition within the consent and EPL that no secondary extraction occur prior to undertaking the studies detailed above and that secondary extraction only occur in areas that the studies indicate have effects acceptable to OEH.

OEH as a result of this meeting has agreed with Centennial to include a condition within the EPL limiting secondary extraction and subsidence in areas under Lake Macquarie until this detailed study and model is completed and assessed. It should be noted that it is accepted that if modelling indicates impacts on benthic micro and macro communities in Lake Macquarie secondary extraction may be prohibited in these areas of zone B under Lake Macquarie.

Subsidence

OEH is concerned that the EA does not appear to provide details of the subsidence monitoring programme for the proposed colliery expansion proposal, and thus does not know how the proponent will ensure that subsidence impacts do not have a detrimental impact on threatened species, populations or communities, or their habitats. OEH notes that subsidence monitoring has been conducted along sections of the Lake Macquarie shoreline (Centennial Myuna 2010; Fig 3-2), but no details of methods or frequency of surveys are provided. The EA also indicates that at least 13 subsidence monitoring stations exist on the Wangi Peninsula (Seedsman Geotechnics Pty Ltd 2010; Fig. 13), but does not provide any information on their location or the types of survey conducted there. Also it is not clear if these historically used survey areas will be included in any on-going subsidence surveys, and, if so, how often surveys would occur there. The EA does not appear to include any consideration of implementing Mine Lease-wide subsidence monitoring using radar images (for interferometry analysis) or bathymetry data, or both, that is collected frequently (such as every six months) over the life of the mine to monitor subsidence impacts. OEH notes that bathymetric surveys have been used at the nearby Wangi Colliery to monitor the surface impacts of local longwall mining (Seedsman Geotechnics Pty Ltd 2010; pg. 24).

As stated in the EA (RPS Australia East Pty Ltd 2011; pg. 44), OEH also recommends that the proponent monitors subsidence under terrestrial areas, particularly along Wangi Creek in and around the local occurrence of Swamp Sclerophyll Forest on Coastal Floodplains EEC. If unexpected subsidence impacts occur than those modelled in the EA (particularly greater than expected levels of subsidence or connective ground cracking, or both) that detrimentally affect threatened species then those impacts must be appropriately offset.

Threatened Species

The final version of the EA did not fully address OEH's concerns raised during the review of the draft EA about the intensity and timing of biodiversity survey conducted on-site for threatened species, particularly

for species not identifiable when field work was undertaken in June. OEH notes that the final EA has given consideration to threatened species not identifiable in early winter and also that the proposed works occur largely in cleared or otherwise modified vegetation. However, the final EA did not contain information on the current condition of the Swamp Sclerophyll Forest on Coastal Floodplains EEC on Wangi Creek downstream of the Surface Facilities Area. OEH therefore supports the recommendation of monitoring of the condition of riparian EEC vegetation along Wangi Creek (RPS Australia East Pty Ltd 2011; pg. 44).

The threatened species assessment in the EA included an assessment of the likelihood of occurrence of the Eastern Australian Underground Orchid (*Rhizanthella slateri*) on the Myuna Project area (RPS Australia East Pty Ltd 2011; Table 8-1, pg. 58). This orchid was described as growing in a range of vegetation types and but was considered unlikely to occur on the project area due to a lack of foredune vegetation. In the threatened species profile for this species (DEC 2005), its habitat requirements are described as being '...poorly understood and no particular vegetation type has been associated with the species, although it is known to occur in sclerophyll forest'. Whilst the likelihood of this species around the proposed earth and drainage works is low, OEH considers this is primarily due to the level of modification to the vegetation instead of the lack of foredune vegetation.

Aboriginal Cultural Heritage

OEH note that effective heritage management requires knowledge of values or cultural significance. An understanding of what makes a place culturally significant and why, enables appropriate decisions to be made about the management of that place. OEH recognises and acknowledges that Aboriginal people are the primary source of information about the value of their heritage and how this is best protected and conserved and therefore must have an active role in any Aboriginal cultural heritage planning process.

OEH notes that Sections 8.3.2 and 10.8 of the EA and Section 1.5, Appendix 2 and Appendix 6 of the Cultural Heritage Report have detailed the consultation process with the local Aboriginal community for this proposed development modification. However, OEH note the absence of consultation evidence following the additional field assessment conducted on 11 February 2011 within the project area. The absence of comments from the registered Aboriginal stakeholders regarding: the results the additional field assessment, details of the significance assessment of the additional Aboriginal sites identified and comments of support or otherwise of the final management and mitigation options highlights the incomplete consultation process.

In order to progress this issue, it is strongly recommended that the proponent seek the views or opinions of the local Aboriginal community regarding the nature and extent of the above outstanding matters to complete the cultural heritage assessment process. Evidence of consultation may take the form of consultation/conversation logs, copies of all correspondence sent/received for the project, records of personal communications, documented phone calls, copies of agendas, minutes to all Aboriginal community meetings and records of participation in field assessments.

OEH also encourages the proponent to continue to engage with the local Aboriginal community in developing appropriate cultural heritage outcomes for the life of the proposed development. OEH have recommended a condition of approved below to target this matter.

Registration of Aboriginal sites

OEH acknowledges the results of additional field assessment of Study Unit 4 - Morisset Peninsular area undertaken by the proponent on 11 February 2011. OEH also acknowledge the identification of two new Aboriginal sites located within this area, identified as 'RPS MP 2' and 'RPS MP 3'. A search of the Aboriginal Heritage Information Management System (AHIMS) revealed that these Aboriginal sites have not been registered with OEH. The proponent is advised to promptly complete an OEH site recording card

for each site and submit to OEH for registration in AHIMS, as per the requirements of section 89A of the *National Parks and Wildlife Act 1974* (NPW Act). Any management outcomes for these sites must be included in the information provided to AHIMS. Please also note that penalties now apply to corporations for failing to fulfil these requirements and this constitutes a final warning.

AHIMS contact details: Phone: 9585 6470, address: Level 6, 43 Bridge Street, Hurstville, NSW, 2220, e-mail: ahims@environment.nsw.gov.au.

Legislative requirements

The importance of protecting Aboriginal cultural heritage is reflected in the provisions of the NPW Act. OEH reminds the applicant to ensure they are familiar with the new requirements of the NPW Act during the development and any subsequent assessment processes. Further advice regarding Aboriginal cultural heritage can be found on OEH's web-site at: www.environment.nsw.gov.au/cultureandheritage.htm.

This submission does not include comments of the NSW Office of Water.

If you require any further information on this matter please contact Karen Gallagher on (02) 4908 6822.

Yours sincerely



18 MAY 2011

MARK HARTWELL

**Head Regional Operations Unit - Hunter
Environment Protection and Regulation
Office of Environment and Heritage
Department of Premier and Cabinet**

Encl: Attachment A – Recommended conditions of approval – Myuna Colliery Expansion of Mining Environmental Assessment (10_0080)
Attachment B – Mandatory Conditions for Environment Protection Licences

References:

- AECOM (2011) Myuna Colliery Extension of Mining Environmental Assessment, 25 February 2011; prepared for Centennial Myuna Pty Limited.
- Cadno Ecology Lab (2010) Appendix I: Myuna Colliery Extension of Mining: Aquatic Ecology assessment: *In* AECOM Myuna Colliery Extension of Mining Environmental Assessment, 25 February 2011; prepared for Centennial Myuna Pty Limited.
- Centennial Myuna (2010) Review of Mine Design and Operations and Myuna Colliery, July 2010. *In* Seedsman Geotechnics Pty Ltd (2010) Appendix C: Subsidence Impact Assessment. *In* AECOM Myuna Colliery Extension of Mining Environmental Assessment, 25 February 2011; prepared for Centennial Myuna Pty Limited.
- DEC (2005) Eastern Australian Underground Orchid – profile. Updated 1 September 2005. Office of Environment and Heritage, Department of Premiers and Cabinet.
<http://threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10730> [accessed 15 April 2011].
- GHD (2010) Appendix G: Water Management Assessment. *In* AECOM Myuna Colliery Extension of Mining Environmental Assessment, 25 February 2011; prepared for Centennial Myuna Pty Limited.
- OEH (2011a) BioBanking. NSW Office of Environment and Heritage, 9 March 2011.
<http://www.environment.nsw.gov.au/biobanking/index.htm> [accessed 18 April 2011]

- OEH (2011b) Principles for the use of biodiversity offsets in NSW. Office of Environment and Heritage, Hurstville, 23 March 2011
<http://www.environment.nsw.gov.au/biocertification/offsets.htm> [accessed 18 April 2011]
- RPS Australia East Pty Ltd (2011) Appendix L: Terrestrial Flora and Fauna Impact Assessment. *In* AECOM Myuna Colliery Extension of Mining Environmental Assessment, 25 February 2011; prepared for Centennial Myuna Pty Limited.
- Seedsman Geotechnics Pty Ltd (2010) Appendix C: Subsidence Impact Assessment. *In* AECOM Myuna Colliery Extension of Mining Environmental Assessment, 25 February 2011; prepared for Centennial Myuna Pty Limited.
- Wikipedia (2011a) Salinity; updated 14 April 2011. <http://en.wikipedia.org/wiki/Salinity> [accessed 15 April 2011]
- Wikipedia (2011b) Conductivity (electric); updated 14 March 2011.
[http://en.wikipedia.org/wiki/Conductivity \(electrolytic\)](http://en.wikipedia.org/wiki/Conductivity_(electrolytic)) [accessed 15 April 2011]

ATTACHMENT A

RECOMMENDED CONDITIONS OF APPROVAL – MYUNA COLLIERY EXTENSION OF MINING (10_0080)

Note: Although the Environment Protection Authority is now a part of OEH, certain statutory functions and powers continue to be exercised in the name of the EPA. This includes licensing functions under the *Protection of the Environment Operations Act 1997*. In these instances, reference is made to the EPA instead of OEH.

ADMINISTRATIVE CONDITIONS

A1 Works to be undertaken in accordance with information supplied

A1.1 Except as provided by these recommended conditions of approval, the works and activities shall be undertaken in accordance with the proposal contained in:

- (a) The major project application (10_0080) submitted to the Department of Planning;
 - (b) The document '*Centennial Coal Myuna Colliery Extension of Mining Environmental Assessment February 2011*' prepared by AECOM Australia Pty Ltd;
- unless otherwise specified in these conditions of approval.

A2. Obligation to Minimise Harm to the Environment

The proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, maintenance, decommissioning or rehabilitation of the project.

LIMIT CONDITIONS

L2 Concentration Limits LDP A and B

Pollutant	Units Measure	of	100% Concentration Limit
pH	pH		6.5 – 8.5
Oil and Grease	Milligrams per litre		10
Total Suspended Solids	Milligrams per litre		50

L4 Volume

	Volume Limit	Unit of Measure
LDP A	*	*
LDP B	8,600	kL/day

* LDP A wet weather discharge only 140mm in 24 hours.

L5 Waste

L5.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1997.

L5.2 The above condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an Environment Protection Licence under the *Protection of the Environment Operations Act 1997*.

L6 Noise

L6.1 Noise generated at the premises, including from emergency stockpiling, must not exceed the noise limits presented in Table 6.1 below. The location(s) referred to in the table below are indicated in the relevant Table 1. - Nearest Sensitive Receptors in the Report "Myuna Colliery Extension of Mining – Part 3A – Noise Impact Assessment (Report No. 30-2558-R2) dated 22 October 2010.

Table 6.1 Noise Limits – All noise limits are in dB(A)

Location	LAeq,15 minute Daytime	LAeq,15 minute Evening	LAeq,15 minute Night	LAMax
2 Turrama Street, Wangi Wangi	37	35	35	45
2 Moani Street, Wangi Wangi	35	35	35	45
3 Sunset Close, Wangi Wangi	35	35	35	45
119 Donnelly Road, Arcadia Vale	42	40	38	45
93 Donnelly Road, Arcadia Vale	42	42	39	45
83 Donnelly Road, Arcadia Vale	44	42	39	45
63 Donnelly Road, Arcadia Vale	42	42	39	45
53 Donnelly Road, Arcadia Vale	42	42	39	45

L6.2 For the purpose of condition L6.1;

- Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holiday's.
- Evening is defined as the period 6pm to 10pm.
- Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holiday's.

L6.3 The noise limits set out in condition L6.1 apply under all meteorological conditions except for any one of the following:

- a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
- b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
- c) Stability category G temperature inversion conditions.

L6.4 For the purposes of condition L6.3:

- a) The meteorological data to be used for determining meteorological conditions is the data recorded by the Eraring meteorological weather station or a weather station established at this site for the purposes of this Environment Protection Licence.
- b) Stability category temperature inversion conditions are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

L6.5 For the purposes of determining the noise generated at the premises a Class 1 or 2 noise monitoring equipment as defined by AS IEC61672.1-2004 and AS IEC61672.2-2004, or other noise monitoring equipment accepted by the EPA in writing, must be used.

L6.6 To determine compliance:

- a) with the $L_{eq(15 \text{ minute})}$ noise limits in condition L6.1, the noise monitoring equipment must be located:
 - within 30 metres of a dwelling façade where any dwelling on the property is situated more than 30 metres from the property boundary that is closest to the premises;
 - approximately on the boundary where any dwelling is situated 30 metres or less from the property boundary that is closest to the premises;
 - within approximately 50 metres of the boundary of a National Park or a Nature Reserve.
- b) with the $L_{A_{Max}}$ noise limits in condition L6.1, the noise monitoring equipment must be located within 1 metre of a dwelling façade.
- c) the noise monitoring equipment must be located in a position that is:
 - at the most affected point at a location where there is no dwelling at the location; or
 - at the most affected point within an area at a location prescribed by conditions L6.4(a) or L6.4(b).

L6.7 An exceedence will still occur where noise generated from the premises in excess of the appropriate limit specified in the condition L6.1 is detected:

- in an area at a location other than an area prescribed by condition L6.6; and/or
- at a point other than the most affected point at a location.

L6.8 For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

OPERATING CONDITIONS

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust on the premises.

O3.3 Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading.

O3.4 Activities occurring in or on the premises must be carried out in a manner that will minimise the generation or emission of wind-blown or traffic generated dust on the premises.

O3.5 All trafficable areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation and/or emission of wind-blown or traffic generated dust on the premises.

O3.6 Coal stockpiles must be maintained in a condition that will minimise the generation and emission of dust on the premises.

O4 Emergency response

Within 3 months of the date of the issue of any Environment Protection Licence, the proponent must develop, or update, an emergency response plan which documents the procedures to deal with all types of incidents (e.g. spill, explosions or fire) that may occur at the premises or outside of the premises (e.g. during transfer) which are likely to cause harm to the environment.

O5 Process and Management

All above ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in-place.

O6 Stormwater/sediment control

The drainage from all areas at the premises which will liberate suspended solids when stormwater runs over these areas must be diverted into adequately sized sedimentation basins.

The sedimentation basins must be maintained to ensure that their design capacity is available for the storage of all runoff from cleared areas.

O7 Secondary Extraction

No extraction methods of mining for coal are to be undertaken in areas under Lake Macquarie that would cause subsidence greater than 20mm at any point until the licensee has conducted studies to identify subsidence effects and developed a model of Lake Macquarie to consider subsidence effects greater than 20mm on the ecosystem of Lake Macquarie this impact assessment and secondary extraction plan must approved by the EPA at least 3 months prior to any mining plan, method, procedure or practice that may cause subsidence greater than 20mm to the bed of Lake Macquarie.

MONITORING

M2 Requirement to monitor noise

M2.1 To determine compliance with Condition L6.1, attended noise monitoring must be undertaken in accordance with Conditions L6.5 and L6.6 and:

- a) at each one of the locations listed in Condition L6.1;
- b) occur annually within the reporting period of an Environment Protection Licence;
- c) occur during each day, evening and night period as defined in the NSW Industrial Noise Policy for a minimum of:
 - 1.5 hours during the day;

- 30 minutes during the evening; and
 - 1 hour during the night.
- d) occur for three consecutive days.

M3 Requirement to monitor weather

M3.1 The meteorological weather station must be maintained so as to be capable of continuously monitoring the parameters specified in condition M3.2.

M3.2 For each monitoring point specified in the table below the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.

Point 21

Parameter	Units Measure	of	Frequency	Averaging Period	Sampling Method
Air temperature	°C		Continuous	1 hour	AM-4
Wind direction	°		Continuous	15 minute	AM-2 & AM-4
Wind speed	m/s		Continuous	15 minute	AM-2 & AM-4
Sigma theta	°		Continuous	15 minute	AM-2 & AM-4
Rainfall	Mm		Continuous	15 minute	AM-4
Relative humidity	%		Continuous	1 hour	AM-4

M4 Requirement to monitor the concentration of the pollutants discharged

M4.1 POINTS LDP A and B

Pollutant	Units Measure	of	Frequency	Sampling Method
Aluminium (dissolved)	Micrograms per litre		Monthly during discharge	Grab sample
Aluminium (total)	Micrograms per litre		Monthly during discharge	Grab sample
Antimony	Micrograms per litre		Monthly during discharge	Grab sample
Arsenic	Micrograms per litre		Monthly during discharge	Grab sample
Barium	Micrograms per litre		Monthly during discharge	Grab sample
Beryllium (dissolved)	Micrograms per litre		Monthly during discharge	Grab sample
Beryllium (total)	Micrograms per litre		Monthly during discharge	Grab sample
Cadmium (dissolved)	Micrograms per litre		Monthly during discharge	Grab sample
Cadmium (total)	Micrograms per litre		Monthly during discharge	Grab sample
Calcium	Micrograms per litre		Monthly during discharge	Grab sample
Chromium (dissolved)	Micrograms per litre		Monthly during discharge	Grab sample

Chromium (total)	Micrograms per litre	Monthly during discharge	Grab sample
Cobalt (dissolved)	Micrograms per litre	Monthly during discharge	Grab sample
Cobalt (total)	Micrograms per litre	Monthly during discharge	Grab sample
Conductivity	Micro Siemens per centimetre	Special Frequency 1	Grab sample
Copper(dissolved)	Micrograms per litre	Monthly during discharge	Grab sample
Copper (total)	Micrograms per litre	Monthly during discharge	Grab sample
Iron	Micrograms per litre	Monthly during discharge	Grab sample
Lead (dissolved)	Micrograms per litre	Monthly during discharge	Grab sample
Lead (total)	Micrograms per litre	Monthly during discharge	Grab sample
Lithium	Micrograms per litre	Monthly during discharge	Grab sample
Magnesium	Micrograms per litre	Monthly during discharge	Grab sample
Manganese	Micrograms per litre	Monthly during discharge	Grab sample
Mercury (dissolved)	Micrograms per litre	Monthly during discharge	Grab sample
Mercury (total)	Micrograms per litre	Monthly during discharge	Grab sample
Molybdenum (dissolved)	Micrograms per litre	Monthly during discharge	Grab sample
Molybdenum (total)	Micrograms per litre	Monthly during discharge	Grab sample
Nickel (dissolved)	Micrograms per litre	Monthly during discharge	Grab sample
Nickel (total)	Micrograms per litre	Monthly during discharge	Grab sample
Oil and Grease	Milligrams per litre	Special Frequency 1	Grab sample
Phosphorus	Micrograms per litre	Monthly during discharge	Grab sample
Potassium	Micrograms per litre	Monthly during discharge	Grab sample
Selenium (dissolved)	Micrograms per litre	Monthly during discharge	Grab sample
Selenium (total)	Micrograms per litre	Monthly during discharge	Grab sample
Silica	Micrograms per litre	Monthly during discharge	Grab sample
Silver (dissolved)	Micrograms per litre	Monthly during discharge	Grab sample
Silver (total)	Micrograms per litre	Monthly during discharge	Grab sample
Sodium	Micrograms per litre	Monthly during discharge	Grab sample
Sulfur	Micrograms per litre	Monthly during discharge	Grab sample
Tin	Micrograms per litre	Monthly during discharge	Grab sample
Titanium	Micrograms per litre	Monthly during discharge	Grab sample
Total Suspended Solids	Milligrams per litre	Special Frequency 1	Grab sample
Vanadium (dissolved)	Micrograms per litre	Monthly during discharge	Grab sample
Vanadium (total)	Micrograms per litre	Monthly during discharge	Grab sample
Zinc (dissolved)	Micrograms per litre	Monthly during discharge	Grab sample
Zinc (total)	Micrograms per litre	Monthly during discharge	Grab sample

		discharge	
pH	pH	Special Frequency 1	Grab sample

M4.2 For Special Frequency 1 the licensee must monitor daily during discharge.

REPORTING

R4 Noise Monitoring Report

R4.1 A noise compliance assessment report must be submitted to the EPA within the Environment Protection Licence Annual Return. The assessment must be prepared by a suitably qualified and experienced acoustical consultant which:

- details the noise monitoring undertaken in accordance with Condition M7.1.
- assesses compliance with noise limits presented in Condition L6.1; and
- outlines any management actions taken within the monitoring period to address any exceedences of the limits contained in Condition L6.1.

R7 Monitoring Report

R7.1 The licensee must supply with the Environment Protection Licence Annual Return a Monitoring Report, which provides:

- an analysis and interpretation of monitoring results; and
- actions to correct identified adverse trends.

SPECIAL CONDITIONS

E1 Air Quality Management Plan

E1.1 A detailed Air Quality Monitoring Management Plan (AQMP) must be prepared for the Project within six months of project approval.

The Air Quality Management Plan must include the following elements:

- Relevant environmental criteria that are to be used in the day to day management of dust impacts. These criteria must include both the acquisition and assessment criteria in Tables 1 and 2;
- Mission statement;
- Dust management strategy consisting of :
 - Objectives and targets;
 - Dust risk assessment;
 - Dust suppression improvement plan;
- Appropriate methods to monitor control effectiveness, and processes to demonstrate and record that controls have been effectively implemented;
- Communication strategy; and
- System and performance review for continuous improvement.

E1.2 The AQMP must include dust management practices that effectively minimise dust emissions at all times and incorporate all mitigation measures discussed in the Environmental Assessment titled *Myuna Colliery Extension of Mining Environmental Assessment (Appendix F: Air Quality Assessment (Heggies Pty Ltd, 2010a))*. To remove any doubt, the measures outlined in the EA are listed in the following table:

Operational Controls

All hard stand areas including haul roads must be sealed.

All hard stand and sealed roads must be regularly maintained by a vacuum sweeper truck or other means so that no emissions occur from these areas.

A bobcat with broom attachment or equivalent must be available on-site at all times to be employed to mitigate particulate emissions when necessary.

All operational areas must be maintained so that particulate emissions do not occur from these areas.

Sprinklers must be used on the coal pad to suppress dust.

All conveyors must be enclosed and washed weekly.

All crusher and transfer points must be enclosed.

All screening, transferring, crushing and conveying must be undertaken in a way which prevents particulate emissions.

The enclosed overland conveyor must be maintained so that it operates at least all but 3 days per year. Where the conveyor is not operational:

- one front end loader will be in operation at the emergency stockpiles;
- the front end loader will operate a maximum of 12 hours during the maintenance or breakdown period;
- two haul trucks will transfer coal to the emergency stockpile for a maximum for two days;
- two haul trucks will transfer coal from the emergency stockpile to the reclaim hopper for a maximum of four days;
- the haul trucks will operate a maximum of 12 hours per day.

Coal moisture must be maintained at a minimum of 8%.

E1.3 The Air Quality Management Plan must detail existing air quality monitoring in addition to any additional the dust monitoring to be undertaken as a part of the proposal.

E2 Water Management Plan

E2.1 A water management plan must be developed, by a suitably qualified and experienced person, and maintained for the site in respect of the management of ground and surface waters, and wastewater. The Plan must include, but is not limited to, the following.

- A description of the water and wastewater management systems at the premises.
- Plan/s illustrating the general flow of water and wastewater.
- Process flow diagram/s depicting the flow and management of water and wastewater.
- Details of ground and surface water, and wastewater monitoring locations, parameters monitored, and the monitoring frequency.
- Plan/s illustrating the location of all monitoring points.

E3 Construction Noise Management Plan

E3.1 The proponent must prepare and implement a Construction Noise Management Plan (Protocol). The Protocol shall particularly address potential noise impact associated with construction works, and shall include but not necessarily be limited to:

- a) Compliance standards.
- b) Community consultation / notification.
- c) Complaints handling monitoring/system.
- d) Site contact person to follow up complaints.
- e) Feasible and reasonable mitigation measures.
- f) The design/orientation of the proposed mitigation methods demonstrating best practice.

- g) Construction times.
- h) Contingency measures where noise complaints are received.
- i) Monitoring methods and program.

ABORIGINAL HERITAGE

AH 1. The applicant must continue to consult with and involve all the registered local Aboriginal representatives for the project, in the ongoing management of the Aboriginal cultural heritage values. Evidence of this consultation must be collated and provided to the consent authority upon request.

AH 2. The proponent shall develop an Aboriginal Cultural Heritage Management Plan (ACHMP) for the project area. The ACHMP is to be implemented in consultation with the registered local Aboriginal stakeholders. The plan must include procedures for ongoing Aboriginal consultation and involvement, details of the responsibilities of all stakeholders, management of any recorded sites within the project area, procedures for the proposed surface subsidence monitoring program, procedures for the identification and management of previously unrecorded sites (excluding human remains), identification and management of any proposed cultural heritage conservation/relocation area(s), and details of an appropriate keeping place agreement with local Aboriginal community representatives for any Aboriginal objects salvaged through the development process, details of proposed mitigation and management strategies for sites identified to be impacted within the project area, details of an Aboriginal cultural heritage education program for all contractors and personnel associated with construction activities and compliance procedures in the unlikely event that non-compliance with the ACHMP is identified

AH 3. In the event that surface disturbance identifies a new Aboriginal object, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and the registered Aboriginal representatives must be contacted to determine the significance of the object(s). The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) (managed by OEH) and the management outcome for the site included in the information provided to the AHIMS. The proponent will consult with the Aboriginal community representatives the archaeologist and OEH to develop and implement management strategies for all objects/sites.

AH 4. If human remains are located in the event that surface disturbance occurs, all works must halt in the immediate area to prevent any further impacts to the remains. The NSW Police are contacted immediately. No action is to be undertaken until police provide written notification to the proponent. If the skeletal remains are identified as Aboriginal, the proponent must contact OEH's Environment Line on 131 555 and representatives of the local Aboriginal community. No works are to continue until OEH provide written notification to the proponent.

AH 5. All reasonable efforts must be made to avoid impacts to Aboriginal cultural heritage at all stages of the development works. If impacts are unavoidable, mitigation measures are to be negotiated with the local Aboriginal community and OEH. All sites impacted must have an OEH Aboriginal Site Impact Recording (ASIR) form completed and submitted to OEH's AHIMS unit within 3 months of completion of these works.

AH 6. An Aboriginal Cultural Education Program must be developed for the induction of all personnel and contractors involved in the construction activities on site. Records are to be kept of which staff/contractors were inducted and when for the duration of the project. The program should be developed and implemented in collaboration with the local Aboriginal community.

THREATENED SPECIES

TS 1. The proponent must implement a monitoring programme on the health and viability of the Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions (Riparian Melaleuca Swamp Woodland) Endangered Ecological Community (EEC) along Wangi Creek downstream of the Myuna Colliery Licensed Discharge Points(s). Such monitoring must include aspects EEC health (e.g. as measured by periodic surveys of fixed quadrats or transects in which both floristic composition and vegetation structure are recorded). If the discharged mine water in the Wangi Creek catchment is found to cause harm to any threatened species, population, community, or their habitats, and particularly the EEC on Wangi Creek downstream of the Surface Facilities Area then the proponent must provide an appropriate biodiversity offset, based on OEH's biodiversity offsetting principles, or BioBanking, or their antecedents.

TS 2. The proponent must implement an appropriate subsidence monitoring programme that is able to detect whether subsidence from the proposed project causes harm to any threatened species, population or community; particularly the EEC vegetation on Wangi Creek downstream of the Surface Facilities Area. Any harm caused to a threatened species, population or community, or their habitats must be appropriately offset.

ATTACHMENT B

MANDATORY CONDITIONS FOR ENVIRONMENT PROTECTION LICENCES

If an Environment Protection Licence is granted the following mandatory conditions will apply:

ADMINISTRATIVE CONDITIONS

Other activities

This licence applies to all activities carried on at the premises.

OPERATING CONDITIONS

Activities must be carried out in a competent manner

Licensed activities must be carried out in a competent manner. This includes:

- (a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- (b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

Maintenance of plant and equipment

All plant and equipment installed at the premises or used in connection with the licensed activity must be:

- (a) maintained in a proper and efficient condition; and
- (b) operated in a proper and efficient manner.

MONITORING AND RECORDING CONDITIONS

Testing methods - concentration limits

Monitoring for the concentration of a pollutant emitted to the air required to be conducted must be done in accordance with:

- (a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- (b) if no such requirement is imposed by or under the Act, any methodology which a condition of an Environment Protection Licence requires to be used for that testing; or
- (c) if no such requirement is imposed by or under the Act or by an Environment Protection Licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The Protection of the Environment Operations (Clean Air) Regulation 2002 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

Subject to any express provision to the contrary in an Environment Protection Licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

Results Recorded and Maintained

The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

Results kept by this licence

All records required to be kept by this licence must be:

- (a) in a legible form, or in a form that can readily be reduced to a legible form;
- (b) kept for at least 4 years after the monitoring or event to which they relate took place; and
- (c) produced in a legible form to any authorised officer of the EPA who asks to see them.

Records on samples

The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- (a) the date(s) on which the sample was taken;
- (b) the time(s) at which the sample was collected;
- (c) the point at which the sample was taken; and
- (d) the name of the person who collected the sample.

Recording of pollution complaints

The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

The record must include details of the following:

- (a) the date and time of the complaint;
- (b) the method by which the complaint was made;
- (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- (d) the nature of the complaint;
- (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- (f) if no action was taken by the licensee, the reasons why no action was taken.

The record of a complaint must be kept for at least 4 years after the complaint was made.

The record must be produced to any authorised officer of the OEHL who asks to see them.

Telephone complaints line

The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

This condition does not apply until 3 months after the licence takes effect.

REPORTING CONDITIONS

Annual Return documents

What documents must an Annual Return contain?

The licensee must complete and supply to the OEH an Annual Return in the approved form comprising:

- (a) a Statement of Compliance; and
- (b) a Monitoring and Complaints Summary.

Before the end of each reporting period, the OEH will provide to the licensee a copy of the form that must be completed and returned to the OEH.

Period covered by Annual Return

An Annual Return must be prepared in respect of each reporting, except as provided below

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Where this licence is transferred from the licensee to a new licensee:

- (a) the transferring licensee must prepare an annual return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- (b) the new licensee must prepare an annual return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

Where a licence is surrendered by the licensee or revoked by the OEH or Minister, the licensee must prepare an annual return in respect of the period commencing on the first day of the reporting period and ending on:

- (a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
- (b) in relation to the revocation of the licence – the date from which notice revoking the licence operates.

Deadline for Annual Return

The Annual Return for the reporting period must be supplied to the OEH by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

Notification where actual load can not be calculated

Where the licensee is unable to complete a part of the Annual Return by the due date because the licensee was unable to calculate the actual load of a pollutant due to circumstances beyond the licensee's control, the licensee must notify the OEH in writing as soon as practicable, and in any event not later than the due date.

The notification must specify:

- (a) the assessable pollutants for which the actual load could not be calculated; and
- (b) the relevant circumstances that were beyond the control of the licensee.

Licensee must retain copy of Annual Return

The licensee must retain a copy of the annual return supplied to the OEH for a period of at least 4 years after the annual return was due to be supplied to the OEH.

Certifying of Statement of Compliance and signing of Monitoring and Complaints Summary

Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

- (a) the licence holder; or
- (b) by a person approved in writing by the OEH to sign on behalf of the licence holder.

A person who has been given written approval to certify a Statement of Compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review this licence.

Notification of environmental harm

The licensee or its employees must notify the OEH of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

Notifications must be made by telephoning the OEH's Environment Line service on 131 555.

The licensee must provide written details of the notification to the OEH within 7 days of the date on which the incident occurred.

Written report

Where an authorised officer of the OEH suspects on reasonable grounds that:

- (a) where this licence applies to premises, an event has occurred at the premises; or
- (b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

The licensee must make all reasonable inquiries in relation to the event and supply the report to the OEH within such time as may be specified in the request.

The request may require a report which includes any or all of the following information:

- (a) the cause, time and duration of the event;

- (b) the type, volume and concentration of every pollutant discharged as a result of the event;
- (c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; and
- (d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- (e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- (f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;
- (g) any other relevant matters.

The OEH may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the OEH within the time specified in the request.

GENERAL CONDITIONS

Copy of licence kept at the premises or on the vehicle or mobile plant

A copy of this licence must be kept at the premises or on the vehicle or mobile plant to which the licence applies.

The licence must be produced to any authorised officer of the OEH who asks to see it.

The licence must be available for inspection by any employee or agent of the licensee working at the premises or operating the vehicle or mobile plant.

**Office of Environment and Heritage
May 2011**