Our reference: DOC13/17894;DOC13/17820; LIC07/2093-13
Contact: Karen Marler 02 4908 6803

- 6 JUN 2013

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

Attention: Mr Matthew Sprott

Dear Mr Sprott

MODIFICATION TO MOUNT ARTHUR OPEN CUT COAL MINE ENVIRONMENTAL ASSESSMENT (09_0062 MOD 1)

I refer to your email of 24 April 2013 requesting comments and recommended conditions of approval from the Environment Protection Authority (EPA) for the above proposed project. I also refer to the document titled: *'Mt Arthur Coal Open Cut Modification Environmental Assessment'* prepared by Resource Strategies (undated) (the EA).

The EPA has reviewed the EA, and understands that the proponent is seeking to modify the existing Mt Arthur coal mine by:

- Extending the life of open cut mining by 4 years (to 2026);
- Increasing the open cut disturbance area;
- Use the existing conveyor corridor for overburden emplacement;
- Duplicate the existing rail loop (5km of new track) and possible relocation of the already approved second train loading facility;
- Increase the maximum number of train movements per day from 24 to 38;
- Relocate the load point for the overland conveyor which delivers coal to Macquarie Generation's Bayswater Power Station;
- Relocate and upgrade the explosive storage facilities; and
- Construct additional offices, a control room and a small extension to the run-of-mine (ROM) coal stockpile footprint.

The proposal will not change the:

- product coal production rate from open-cut mining operations (32 million tonnes per annum (Mtpa));

Chemical Storage

Based on the quantity of chemical substances likely to be stored in the upgraded explosive storage facility (more than 2000 tonnes) is likely that the scheduled activity of 'Chemical storage – general chemicals storage' will apply. The proponent will need to make application to EPA to vary the existing Environment Protection Licence 11457 (the EPL) to include this activity on the EPL.

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Water Management

The EPA is satisfied that impacts associated with surface and/or ground waters will be appropriately regulated through the current conditions of the EPL. The proponent should note condition E1.1 of the EPL which requires that the discharge of saline water from the mine site occurs in accordance with the requirements of the Hunter River Salinity Trading Scheme (HRSTS). Under the HRSTS, all saline water (defined as water with an electrical conductivity of more than 400 µS/cm) must only be discharged via the proponents authorised discharge point. The EPA notes that runoff from haul roads, hardstand and pre-strip areas , which has the potential for moderate salinity – may be directed to sediment dams and following prolonged wet weather this water could be released following settlement. The proponent should note that if the conductivity of this water exceeds 400 µS/cm it cannot be lawfully discharged off site otherwise than via the discharge point authorised by the EPL.

Air Quality

The EPA has reviewed the EA including the Air Quality Impact Assessment document "*Air Quality and Greenhouse Gas Assessment- Final – Mt Arthur Coal Open Cut Modification, Hunter Valley Energy Coal Pty Ltd*" prepared by PAE Holmes and dated 25 January 2013 (the AQIA).

A cumulative 24 hour average PM_{10} impact assessment was undertaken at selected residences surrounding the Mt Arthur Coal Project. Exceedances of the EPA's 24 hour average PM_{10} impact assessment criterion of 50 $\mu g/m^3$ are predicted at private receptors 187, 238, and 252 located to the north west of Mt Arthur Coal Mine. Exceedances are also predicted at private receptors within the existing Mt Arthur Coal Mine zone of acquisition (211, 226) and mine owned receptors (184a). A summary of exceedances identified in the AQIA is provided in table 1 below.

The predicted exceedances of the EPA's cumulative 24 hour average PM_{10} impact assessment criterion of 50 $\mu g/m^3$ at the private receptors to the north west of the Mt Arthur Coal Mine indicates the potential for more wide spread exceedances at other private receptors to the north west of the site. Additionally, some issues were identified with the cumulative impact assessment methodology which could increase predicted concentrations at the private receptors to the north west of the site:

- Exclusion of Bengalla Coal Mine Continuation; and
- Prediction of cumulative impacts for 10 days (highest increments from the modification) instead of the full year.

The Drayton South Coal Project was also excluded from the cumulative impact assessment. The proponent justifies the exclusion of the Drayton South Coal Project through an examination of the predominant wind direction of the area and the location of the mines and residences. The receptors most impacted by the modification are unlikely to be most impacted by the proposed Drayton South Coal Mine.

The proposed Bengalla Coal Mine Continuation Project is excluded as no detailed information is available for review. The mining is proposed to be undertaken to the west of its current operations. The Environmental Assessment for the Bengalla Coal Mine Continuation Project has undergone an adequacy review. The preliminary air quality impact assessment predicts significant 24 hour average PM_{10} concentration increments in the vicinity of the private receptors located to the north west of Mt Arthur Coal Project. The EPA recommends the cumulative impacts of the Mt Arthur Coal Project Modification and Bengalla Coal Mine Continuation Project are considered before any determination of the project is made.

Table 1. Summary of key Mt Arthur Coal Project key Dispersion Modelling Results

	Maximum 24 hour average PM_{10} concentration		Annual average PM_{10}	Annual average $PM_{2.5}$	Dust Deposition
Criteria	Increment	Cumulative (no. of days above criteria)	Cumulative	Cumulative	Cumulative
	50 µg/m^3	50 µg/m^3	30 µg/m^3	8 µg/m^3 [1]	4g/m^2/month
2016					
Private Receptors					
187		**72 (2)**			
238		**55 (1)**			
252		**56 (4)**			
Private Receptors within existing HVEC Zone of Acquisition					
209	**55**		24	8	1.9
210	**62**		28	**9**	2.3
211	**64**	**75 (10)** [2]	27	**9**	2.2
226		**79 (3)**			
241	39		**31**	8	2.3
252	23		**32**	6	2.6
264	29		**40**	6	**4.2**
Mine Owned Receptors					
184a		**76 (4)**			
207	**51**		23	8	1.8
208	**55**		25	8	2.0
212	**69**		**34**	**9**	2.7
250	30		**33**	7	2.7
2022					
Private Receptors within existing HVEC Zone of Acquisition					
203	**51**		17	8	1.7
204	**52**		18	8	1.8
206	**56**		19	8	1.9
209	**66**		20	**9**	2.1
210	**75**		22	**10**	2.6
211	**74**	**75 (10)** [2]	25	**10**	2.6
Mine Owned Receptors					
184a	**54**	**57 (1)**	18	8	1.7
184b	**55**		18	8	1.7
205	**53**		18	8	1.8
207	**58**		19	8	2.0
208	**66**		20	**9**	2.2
212	**82**		25	**10**	3.0
2026					
Private Receptors					
187		**53 (1)**			
Private Receptors within existing HVEC Zone of Acquisition					
203	**56**		19	8	1.9
204	**59**		20	**9**	2.0
206	**65**		20	**9**	2.1
209	**73**				
210	**80**		22	**9**	2.2
211	**83**	**84 (10)** [2]	24	**10**	2.7
226	**53**	**53 (2)**	20	**9**	2.0
Mine Owned Receptors					
184a	**58**	**61 (4)**	20	**9**	1.9
184b	**62**		20	8	1.9
184c	**53**		18	8	1.6
202	**55**		19	8	1.9
205	**58**		20	8	1.9
207	**66**		21	**9**	2.2
208	**72**		22	**10**	2.4
212	**81**		25	**10**	3.0

1. NEPM advisory standard
2. At least 10 days above criteria as cumulative assessment was only undertaken for 10 days instead of the full year

Proactive and reactive management is required to minimise risk of impacts at private receptors to the north west of the site

Dust control strategies at Mt Arthur Coal Mine have been benchmarked against the recommendations in the *NSW Coal Benchmarking Study: International Best Practice Measures to Prevent and/or minimise Emissions of Particulate Matter from Coal Mining* (Katestone Environmental Pty Ltd, 2010). The benchmarking study was required under the Coal Mine Particulate Matter Control Best Practice Pollution Reduction Program (PRP). The proponent has since implemented several of the dust control strategies identified in the benchmarking study. Additional best practice measures are undergoing a detailed evaluation as required by the PRP.

A broad overview of the dust management measures applied at the mine is provided in the AQIA. While the proponent has complied with the requirements of the best practice PRP and is evaluating additional best practice measures, it is unclear what methods and indicators are used to determine compliance and measure the effectiveness of the emissions control. The results of the AQIA reinforce the need for effective management of particulate emissions from Mt Arthur. It also highlights the potential risk of cumulative PM_{10} impacts above the EPA criteria at the private residences to the north west of the site. These residences are also likely to be impacted by the proposed Bengalla Continuation Project.

A comprehensive air quality management plan includes Key Performance Indicators (KPIs) for each emission control method to ensure the effective control of particulates. It is noted that the proponent has committed to developing site specific emission factors for the Mt Arthur Coal Mine and that a program will be implemented by 1 March 2013. The EPA recommends a review of the existing air quality management plan needs to be undertaken to ensure it is comprehensive and includes effective proactive and reactive management. The plan should contain the following information, as a minimum:

- *Key performance indicator(s);*
- *Monitoring method(s);*
- *Location, frequency and duration of monitoring;*
- *Record keeping;*
- *Response mechanisms; and*
- *Compliance reporting.*

All proposed management practices must be consistent with best management practice and be quantifiable, measurable, auditable and enforceable. Methods for determining compliance must be clearly identified. The EPA advises that additional quantifiable and auditable environment protection licence conditions may be developed based on the information provided in the air quality management plan.

The management of air quality at the Mt Arthur mine also includes a proactive dust management system using real time dust monitoring (six TEOMS monitor PM_{10} continuously). An outline of the proactive dust management system is provided in the Air Quality Monitoring Program. The system is designed to alert of a potential exceedance of the 24 hour average PM_{10} impact assessment criteria.

The locations of the six TEOM's for the proactive dust management system generally focus on Muswellbrook. There are two TEOM's in the vicinity of the private residences to the north west of the site where there is the potential risk of cumulative PM_{10} impacts above the 24 hour average criteria. The EPA recommends that the locations of the TEOM's be reviewed to ensure they include the most potentially impacted private receptors to the north west of the site.

<u>Noise</u>

The EPA has reviewed the EA, including Appendix G to the EA "*Mt Arthur Coal Open Cut Modification Noise & Blasting Assessment*" prepared by Wilkinson Murray Pty Limited January 2013 (the NBA) as they relate to the environmental noise and blasting impacts of the proposed project. The EPA is unable to provide recommended conditions of approval for the project as presented for the following reasons:

- The EA and NBA do not appear to predict the noise impact of the proposal in accordance with the Industrial Noise Policy (EPA, 2000) (the INP) as modifying factor adjustments do not appear to have been considered. In the experience of the EPA, modifying factor adjustments, particularly for low-frequency noise, are often required for coal mine noise meaning that in this particular case

$L_{Aeq(15minute)}$ noise levels received at sensitive receivers could by 5 dB(A) higher than predicted in the NBA; and

- The EA and NBA have not justified that the residual level of impact at receivers expected to be impacted above the Project Specific Noise Level (PSNL) is acceptable in accordance with Chapters 8 and 9 of the INP.

The EPA requests that the proponent clarifies what modifying factor adjustments were applied to the predictions made in the NBA and where modifying factors were not applied, why they are not applicable. Justification that residual impacts at sensitive receiver locations are acceptable following application of the identified feasible and reasonable mitigation measures must also be provided. Following provision of this additional information, the EPA will reconsider whether it is able to provide recommended conditions of approval and ultimately licence the predicted impacts.

Additionally, as the proposal seeks to increase peak rail movements, the EPA intends to request that the Department of Planning and Infrastructure includes a condition on any approval which requires the proponent to only use best practise rolling stock for rail transport resulting from the proposal (including only locomotives which have obtained EPA approval to operate on the NSW rail network under Condition L2 of EPL No's. 3142, 12208 or 13421, or in accordance with the former *Noise Control Act 1975*).

Should you have any questions please phone me on 02 4908 6803.

Yours sincerely

KAREN MARLER
Head Regional Operations Unit – Hunter
Environment Protection Authority