NSW GOVERNMENT
Department of Planning

MAJOR PROJECT ASSESSMENT: Chitter & Tailings Reclamation Project

MP 06_0236

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

September 2008

Cover Photograph: The Neath chitter and tailings extraction site

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EXECUTIVE SUMMARY

Hunter Enviro-Mining (Operations) Pty Limited (HEM) proposes to recover carbonaceous materials (chitter and tailings) from 3 historic coal reject emplacements within the Cessnock City Local Government Area (see Figure 1).

The proposal involves the extraction of a total of 2.86 million tonnes (Mt) of chitter and tailings from sites at Aberdare East, Neath and Richmond Main East. Material extracted from the sites would be processed at the existing Hebburn No. 3 coal handling and preparation plant (CHPP) and transported to the Port of Newcastle or directly to local power stations in accordance with a development consent for the CHPP issued by Cessnock Council in 2001.

The project has a capital investment of $3 million, and would employ up to 57 people for 3 years. The proposal constitutes a 'major project' under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), and consequently the Minister is the approval authority for the project application.

The Department exhibited the Environmental Assessment (EA) for the project between 10 January and 14 February 2007 and received 99 submissions, including 10 from government agencies and 89 from community organisations or individuals. None of the government agencies objected to the project, but nearly all of the public submissions objected to the project, raising concerns about increased truck numbers, noise and dust impacts.

The Department has assessed the project application, EA, submissions on the project and HEM's response to these submissions and preferred project report in accordance with the objects of the EP&A Act and principles of ecological sustainable development, and is satisfied that there is sufficient information available to determine the application.

The assessment found that the project would have impacts upon noise and dust levels in the area and that the project would increase truck movements on local roads. Nonetheless, the Department is satisfied that the potential impacts of the project can be adequately mitigated, managed, and monitored to achieve an acceptable level of environmental performance.

The assessment found that the project would have impacts upon noise and dust levels in the area and that the project would increase truck movements on local roads. The Department is satisfied that the proposal can meet applicable amenity, health and environmental standards. The Department is also satisfied that the residual environmental and socio-economic impacts of the project can be adequately mitigated and/or managed and has recommended a comprehensive range of conditions to ensure this occurs.

The Department also notes that the project would have significant social, economic and environmental benefits, including creating employment opportunities, providing royalty revenue to the State, recovering coal that would otherwise not be used, and rehabilitating the sites to address potential contamination issues and allow for future beneficial land uses.

On balance, the Department believes that the project benefits outweigh its costs, and it is therefore in the public interest. Consequently, the Department recommends that the Chitter and Tailings Reclamation Project be approved subject to strict conditions of approval.

1. PROPOSED PROJECT

1.1 Project Background

Historic coal mining in the Cessnock and Kurri Kurri areas has left a number of sites where rejected stony and carbonaceous material (coal reject) has been left behind after the cessation of mining and coal processing. Coal reject is the by-product of the preparation of product coal for various market needs. Coal reject may be in two forms – coarse pebbly material (known as chitter) and carbonaceous and other fines (known as tailings). Emplacements of both coarse and fine coal reject contain large proportions of carbonaceous materials that contribute to ongoing environmental degradation including leaching of acids and salts into soils and local waterways. Old emplacements of coal reject may be able to be re-mined and re-reprocessed to produce a proportion of saleable coal suitable for current markets.

In 2001, Hunter Enviro-Mining (Operations) Pty Limited (HEM) obtained development consent to construct and operate a coal processing plant on the site of the former Hebburn No 2 Colliery (the Hebburn No 3 coal handling and preparation plant (CHPP), see Figure 1). Under the 2001 development consent, HEM is able to process up to 2.2 million tonnes (Mt) of coal at the CHPP and transport the product coal to the Port of Newcastle by road.

The CHPP commenced operations in 2005 and since that time, HEM has been recovering chitter and tailings from a number of sites in the lower Hunter Valley for re-processing. Recovery and transport of this coal reject material did not require development consent due to the provisions of clauses 8 and 14 of *State Environmental Planning Policy No 55 – Remediation of Land*, until that SEPP was overridden by the provisions of the *State Environmental Planning Policy (Major Projects) 2005*.

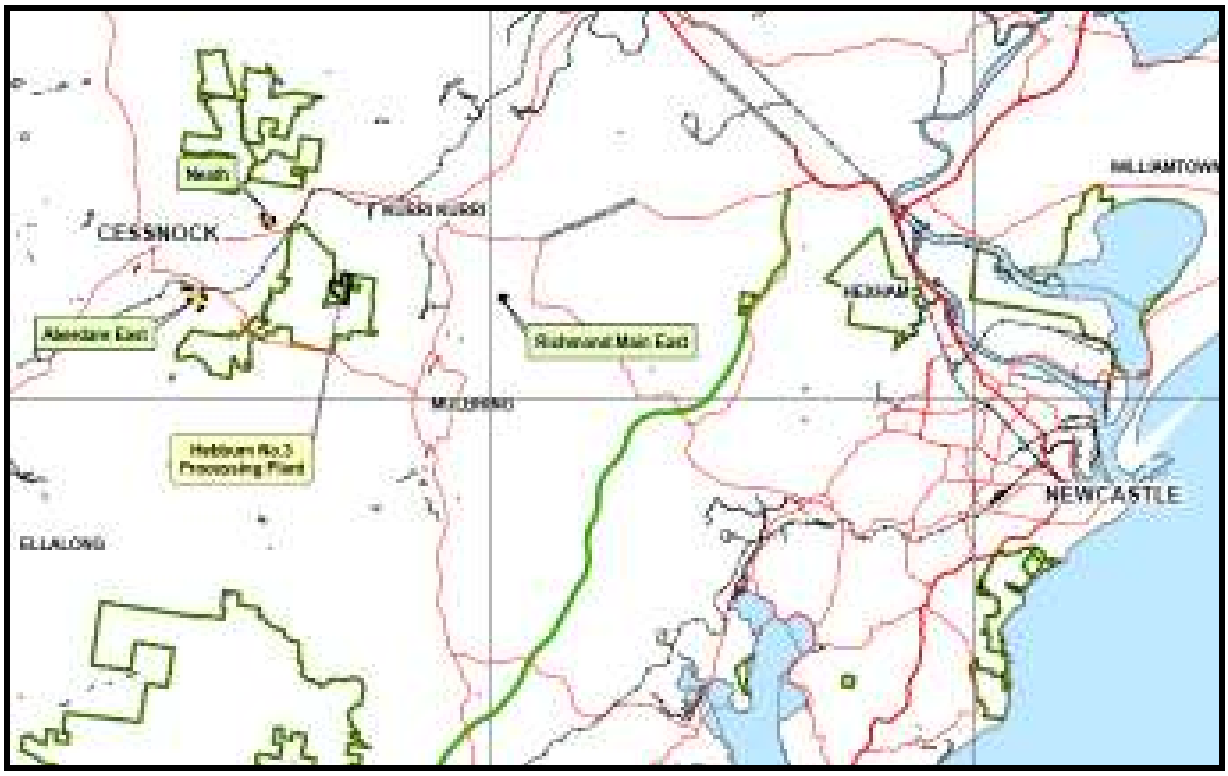

***Figure 1**: Project Location*

HEM now proposes to recover chitter and tailings from three additional historic coal reject emplacements within the Cessnock City Local Government Area. HEM has lodged a project application under Part 3A of the EP&A Act to allow the recovery of approximately 2.8 Mt of chitter and tailings from sites at Aberdare East, Neath and Richmond Main East in Cessnock City LGA (see Figures 1 and 2). Material recovered from these sites would then be processed at the Hebburn No 3 CHPP and transported to markets in accordance with the existing Council development consent.

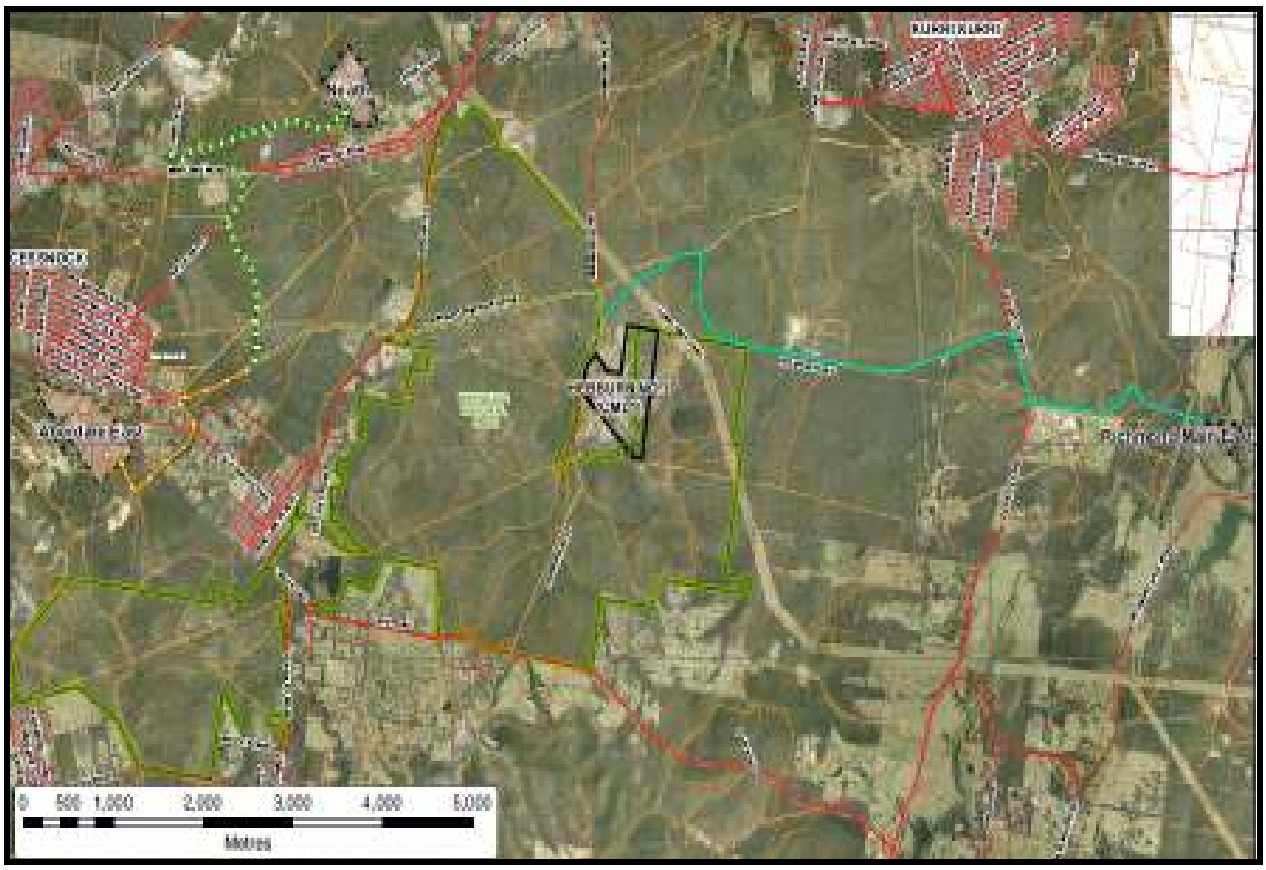

***Figure 2**: Location of the 3 sites and the CHPP*

1.2 Project Description

The key components of the project are summarised in Table 1 and shown schematically in Figure 3, and described more completely in the Environmental Assessment (EA) and Preferred Project Report (PPR), which are attached as Appendices E and C respectively.

***Table 1:** Major Components of the Project*

Aspect	*Description*
Mining	Recovery of 2.86 Mt of coarse and fine carbonaceous material (chitter and tailings) from 3 historic coal reject emplacement sites: – Aberdare East (1.7 Mt of chitter and tailings); – Neath (1 Mt of chitter and tailings); and – Richmond Main East (0.16 Mt of chitter).
Project Life	Up to 3.5 years.
Transport	Recovered material would generally be transported to the Hebburn No 3 CHPP using a combination of State roads and fire trails located in Werakata National Park and adjacent Crown Land. Some material from Aberdare East and Neath may be transported directly to either Upper Hunter or Central Coast power stations, or to local collieries, using public roads.
Road Works	Various road and intersection upgrades and upgrades to fire trails within the Werakata National Park and adjacent Crown Land (see Section 4.2).
Employment	Up to 57 people.
Capital Value	$3 million.
Hours of Operation	Extractive operations would take place 7 am to 7 pm, Monday to Friday. Haulage of reclaimed material would occur during daylight hours only. No operations would take place on weekends or public holidays.
Rehabilitation	The 3 extraction sites would be progressively rehabilitated with grasses and other native vegetation.

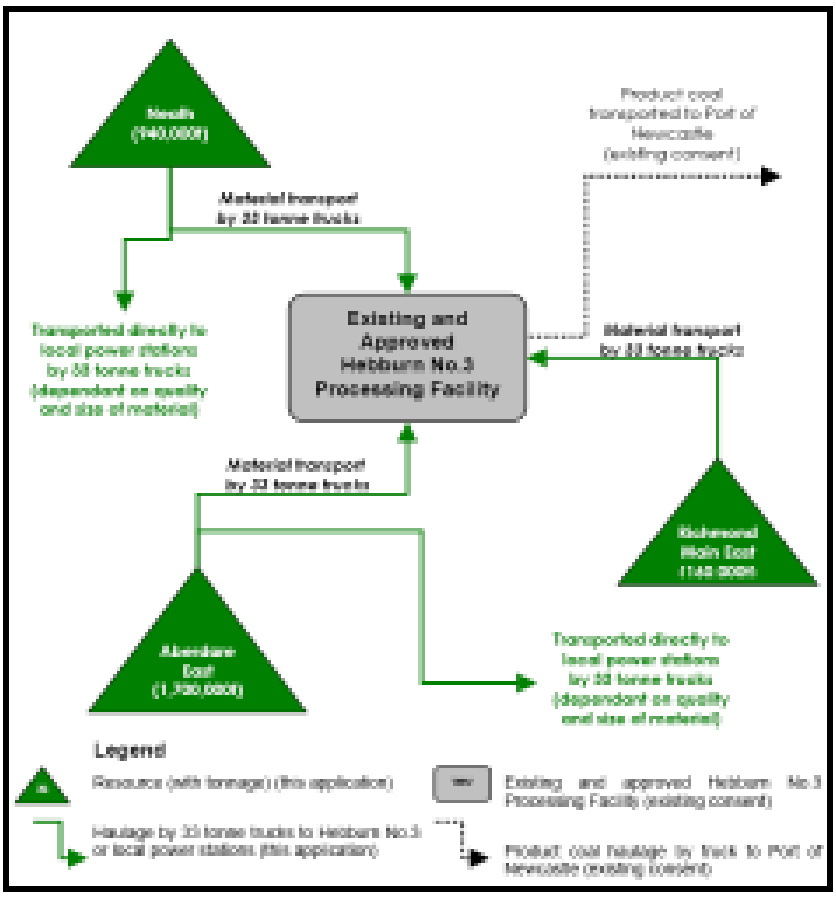

Figure 3: *Schematic diagram of the project*

1.3 Project Setting

Aberdare East

The Aberdare East reclamation site is located on the southeastern fringe of Cessnock, south of Cessnock Street and adjacent to the South Maitland Railway and covers an area of 35 hectares (see Figure 4). The site is bordered to its west by historic mine workings and to its south and southeast by Crown land. Residential development is situated to the east and north of the site. The site was formerly part of the Aberdare East Colliery which operated from 1968 until 1982 and is currently used as a training facility for earth-moving operations.

Neath

The Neath reclamation site is located approximately 350 m north of Neath township and 2 km northeast of Cessnock. It is bordered on all sides by vegetated Crown land (see Figure 5). The site was formerly part of the Neath Colliery which operated from 1907 to 1959.

Richmond Main East

The Richmond Main East reclamation site is located approximately 10 km east of Cessnock and 3 km southeast of Kurri Kurri (see Figure 6). The Richmond Main East site is located in an area dominated by rural uses and has a small number of residences in its vicinity.

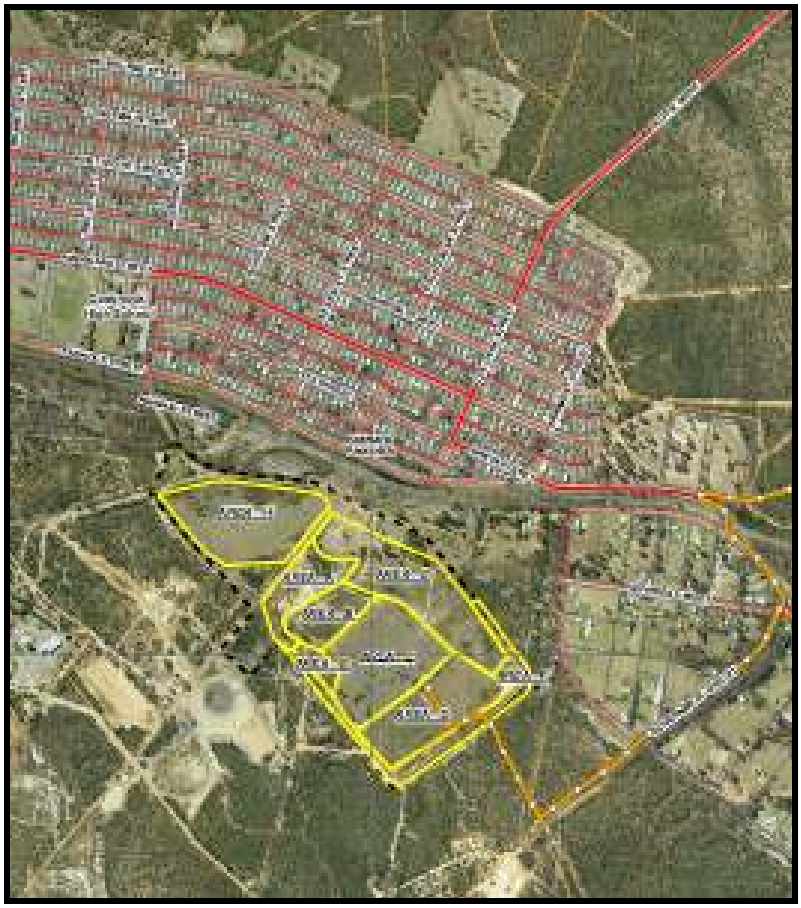

Figure 4: *Aberdare East site and surrounds*

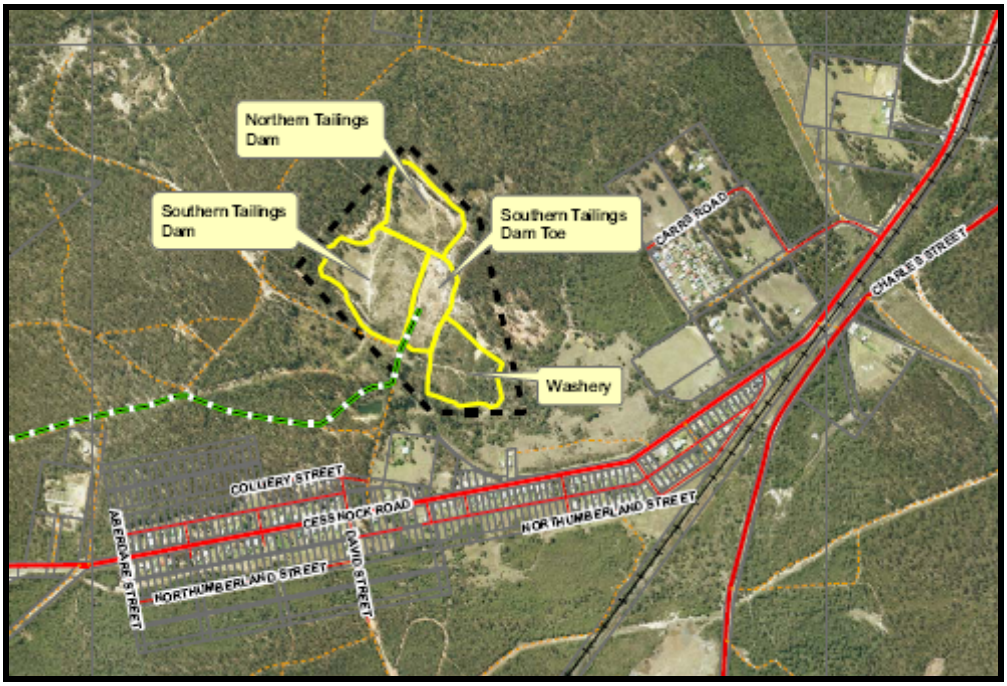

Figure 5: *Neath site and surrounds*

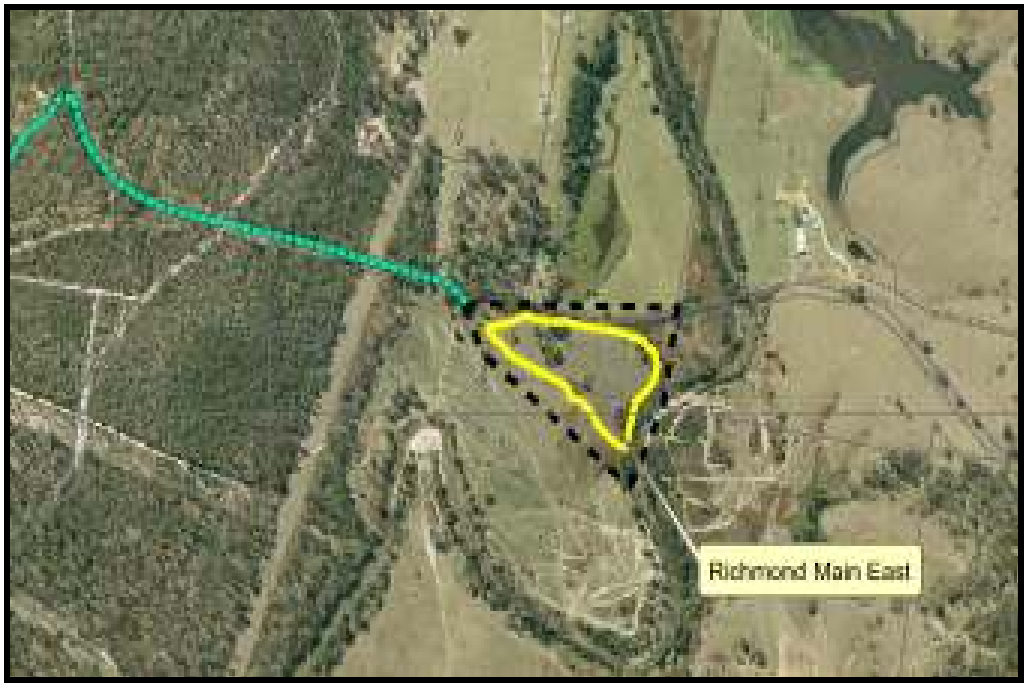

Figure 6: *Richmond Main East site and surrounds*

1.4 Project Need and Justification

Technology at the Hebburn No. 3 CHPP allows for the processing of coal reject recovered from historic emplacements in the Cessnock LGA. The three subject sites were previously used to store coal reject. Since the closure of mining operations, these sites have remained undisturbed and no remedial or rehabilitative works have been undertaken. The sites are considered to contain contaminated material and acid leachate soils, having the potential to contribute to environmental degradation and contamination of local waterways.

The project would involve the extraction of chitter and tailings with sufficient carbonaceous materials within them to produce saleable coal. The project would deliver a number of key benefits, including:

- employment of up to 57 people for three years;
- recovery of accessible coal resources that would otherwise be sterilised;
- upgrades to road intersections in the vicinity of each site and fire trails within the Werakata National Park and neighbouring Crown land;
- rehabilitation and revegetation of the sites following extraction; and
- royalty and tax income to the State.

2. STATUTORY CONTEXT

2.1 Major Project

The collection of chitter and tailings to produce saleable coal falls within the definition of “mining of coal”. Consequently, the proposal is “development for the purpose of coal mining” within the terms of, clause 5 of schedule 1 of *State Environmental Planning Policy (Major Projects) 2005* and is therefore a major project under Part 3A of the EP&A Act. The Minister for Planning is therefore the approval authority for the project.

2.2 Permissibility

The chitter and tailings extraction sites are within Cessnock City LGA and are zoned 1(a) Rural “A” under the *Cessnock Local Environmental Plan 1989*. This zone permits development for the purposes of coal mining with development consent.

Haulage of the recovered coal reject would involve using fire trails on Crown land and through the Werakata National Park. This activity does not in itself require development consent under the LEP. Instead it is subject to approvals from the Department of Lands and the Department of Environment and Climate Change (DECC). However, it is subject to Part 3A by virtue of section 75B(3) of the EP&A Act.

The Department is satisfied that the project is permissible with consent.

2.3 Exhibition

Under Section 75H(3) of the EP&A Act, the Director-General is required to make the environmental assessment of a project publicly available for at least 30 days. After accepting the EA for the proposal, the Department:

- made the EA publicly available from 10 January until 14 February 2007:
  - on the Department's website, and
  - at the Department's Information Centre, Cessnock City Council offices and the Nature Conservation Council.
- notified relevant State and local government authorities by letter; and
- advertised the public exhibition in the Cessnock Advertiser on 10 and 31 January 2007.

This satisfies the requirements in Section 75H(3) of the EP&A Act.

2.4 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the Act, as set out in Section 5 of the Act. The objects of most relevance to the Minister's decision on whether or not to approve the project are found in Section 5(a)(i),(ii),(vi)&(vii). They are:

> *"The objects of this Act are:*
> *(a) to encourage:*
> *(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
> *(ii) the promotion and co-ordination of the orderly and economic use and development of land,*
> *(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
> *(vii) ecologically sustainable development"*

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD "requires the effective integration of economic and environmental considerations in decision-making processes" and that ESD "can be achieved through" the implementation of the principles and programs including the precautionary principle, the principle of inter-generational equity, the principle of conservation of biological diversity and ecological integrity, and the principle of improved valuation, pricing and incentive mechanisms. In applying the precautionary principle, public decisions should be guided by careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment and an assessment of the risk-weighted consequences of various options.

The Department has fully considered the objects of the EP&A Act, including the encouragement of ESD, in its assessment of the project application. The assessment integrates all significant economic and environmental considerations and seeks to avoid any potential serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences. HEM has also considered a number of alternatives to the proposed development, including the alternative presented in its Preferred Project Report and that of not proceeding, and considered the proposal in the light of the ESD principles.

2.5 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Director-General's report is required to include a copy of or reference to the provisions of any State Environmental Planning Policy (SEPP) that substantially governs the carrying out of the project.

The Department has considered the proposal against the relevant provisions of SEPPs 11, 33, 44 and 55 and is satisfied that none of these SEPPs substantially govern the carrying out of this project (see Appendix B). The Mining, Petroleum Production and Extractive Industries SEPP 2007 does not apply to the project since the project application was lodged prior to the SEPP's commencement on 16 February 2007.

2.6 Statement of Compliance

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the environmental assessment requirements with respect to the project. The Department is satisfied that the Director-General's environmental assessment requirements have been complied with.

3. ISSUES RAISED IN SUBMISSIONS

During the exhibition period, the Department received a total of 99 submissions. These included 10 submissions from public authorities, 4 submissions from special interest groups and 85 submissions from individuals.

A summary of the issues raised in submissions is provided below. A full copy of all submissions received is attached in Appendix D.

3.1 Public Authorities

Department of Primary Industries (DPI) stated that a mining operations plan (MOP) would need to be submitted prior to the project commencing, including detailed final landform plans and rehabilitation completion criteria. DPI also provided the following comments:

- HEM should comply with the provisions of the *Coal Mine Health and Safety Act 2002* and the *Coal Mines Regulation Act 1982*;
- HEM should continue its stakeholder engagement program; and
- the suitability, availability and possible remediation of soils should be addressed in the MOP.

Department of Water and Energy (DWE) raised no objection to the project. DWE however highlighted concerns with the source and quantity of water that would be necessary for dust suppression. DWE also stated that HEM should conduct further monitoring of water quality in the closed Aberdare and Neath Colliery workings to assess any impacts from the proposal.

Department of Environment and Climate Change (DECC) raised concerns with the project with regard to noise, air quality, flora and fauna and Aboriginal heritage. It provided the following key comments:

- **Noise** – HEM's noise modelling was based upon the use of sensitive receiver areas rather than individual sensitive receiver locations and DECC stated it was unable to undertake a detailed assessment of noise impacts due to potential inaccuracies in modelling of operational noise sources.
- **Air quality** – HEM's assessment did not provide certainty as to the extent of the project's dust emissions. DECC also commented that the draft Statement of Commitments did not include specific dust mitigation and monitoring measures.
- **Flora and Fauna** – DECC noted that no offset measures were outlined to compensate for the loss of vegetation and habitat to be cleared and that the EA did not contain a rehabilitation strategy or describe any long term measures for the protection and conservation of vegetation at the 3 reclamation sites.
- **Aboriginal heritage** – HEM had not undertaken an assessment of the archaeological sensitivity of the areas near to the fire trail in the Werakata National Park that may be impacted through its use as a haulage route.

DECC provided a further submission upon receipt of the Preferred Project Report (PPR). In its further submission DECC stated the following:

- it was satisfied with noise impact assessment information in the PPR. DECC also recommended revised project specific noise limits (PNSLs);
- HEM's commitments regarding air quality impact mitigation measures should be incorporated as conditions of approval; and
- that conditions be applied to the project approval to address Aboriginal cultural heritage issues.

Department of Lands (Lands) stated that approval should be sought for the use of fire trails on Crown land. Lands also stated that rehabilitation of the sites should be undertaken to relevant standards.

Hunter-Central Rivers Catchment Management Authority (HCRCMA) raised concerns with vegetation clearing and rehabilitation at the 3 sites and potential impacts to surface and groundwater resources.

Hunter New England Health Service (HNEHS) raised concerns relative to noise impacts, air quality impacts and impacts to groundwater resources. Key comments included:

- **Air quality** – HNEHS stated its concern with the level of assessment with respect to potential air quality impacts and proposed mitigation measures and recommended that a plan should be developed to manage air quality impacts.
- **Noise** - HEM's draft Statement of Commitments did not adequately address noise impact mitigation measures.
- **Groundwater** – HEM did not fully assess impacts to groundwater quality and quantity.

Cessnock City Council (Council) does not object to the project. Council however raised concerns with certain aspects of the project including the impacts of haulage through local roads, noise impacts, dust impacts and impacts to groundwater at Aberdare East and Neath.

Heritage Council of NSW raised no objection to the proposal but stated HEM should undertake a Heritage Impact Assessment.

Mine Subsidence Board raised no objection to the project but stated that HEM should seek the Board's approval before erecting any permanent improvements.

Roads and Traffic Authority and its associated Hunter Regional Development Committee (RTA) raised no objection to the project. RTA stated that a traffic management plan should be developed for the project. It also stated its preference that alternative haulage routes should be used to minimise traffic impacts on local roads and that intersection upgrades and other road works should be undertaken to improve safety along the haulage routes.

3.2 Public Submissions

Interest Groups

The United Mineworkers' Federation of Australia (UMFA) supports the project, noting that it has a limited life and that any environmental impacts from the project would be able to be managed.

Kearsley Communities Committee objected to the project and questioned HEM's ability to successfully rehabilitate sites based on its past practices. The group also raised concerns regarding increases in heavy vehicle movements and associated impacts at the Aberdare Preschool.

Kearsley Rural Fire Service (KRFS) objects to the project. Its concerns related to the increase in heavy vehicle movements on local roads and the impact this may have on the KRFS's emergency response times.

Neath Concerned Citizens objects to the project. Its concerns related to noise, dust and traffic impacts.

Community submissions

85 individual community members made submissions to the Department on the project. 84 of these submissions objected to the proposal. Concerns in objectors' submissions mainly related to:

- environmental impacts associated with increases in heavy vehicle movements on local roads;
- air quality impacts including potential for increased dust deposition in nearby residential areas;
- noise impacts, particularly as two of the reclamation sites are close to residential areas; and
- the potential for truck movements from the project (as originally proposed) to impact upon the amenity of the Aberdare Preschool.

4. ASSESSMENT

4.1 Noise

A noise impact assessment (NIA) was undertaken for HEM by Spectrum Acoustics Pty Limited. The assessment was prepared in accordance with DECC's *NSW Industrial Noise Policy* (INP). Road traffic noise was assessed using the *Environmental Criteria for Road Traffic Noise* (ECRTN). The NIA modelled on-site noise sources as well as off-site truck noise for the operational and haulage components of the proposal under a range of meteorological conditions. Temperature inversion conditions were found to represent the "worst case scenario" for consideration under the INP.

Operational Noise

The NIA established operational project specific noise levels (PSNLs) for representative locations at the 3 sites with reference to the INP intrusiveness criterion which limits noise levels from an industrial source to a value of "background plus 5 dB(A)". Based on the measured background noise levels at each of the sites, the PSNLs for the project would be as follows:

Site	**PSNL (L_{eq} (15 min)) - *background plus 5 dB(A)***
Aberdare East	38 dB(A)
Neath	44 dB(A)
Richmond Main East	35 dB(A)

No specific construction noise criteria apply to the project, with operational noise criteria proposed to apply from its commencement. Modelled noise sources included a front end loader and bulldozer as well as trucks arriving, departing or loading throughout a 15 minute period. The NIA stated that the nature of extraction at each site would not be static and therefore the location of extractive operations at each site would move as the resource is depleted. Therefore noise exposure to individual receivers would be varied and intermittent, depending on the location and level of activity of the noise source.

DECC raised the following concerns with the NIA:

- that the modelled on-site sound power level of trucks was that of trucks entering or leaving the site at low speed and that this assumption was incorrect;
- that the assumptions in the model included a working face of 3m high for each site, a loader operating at full power for 5 minutes of each 15 minute period and that noise from a scraper was considered to be similar to that of a front end loader; and
- the NIA did not include an assessment of traffic noise on non-public roads (eg fire trails) proposed to be used as haulage routes.

HEM responded to these issues in its response to submissions and PPR, by stating:

- trucks on site would not be stationary and producing maximum noise emissions for the full 15 minutes in each modelling period and that a truck moving at low speed was the correct representative sound power level;
- further modelling was undertaken assuming machinery would be working at ground level and not behind a working face. HEM stated that this scenario would represent the worst case conditions and that use of a scraper and its associated noise emissions was noted in the NIA and can be compared with those from a front end loader. As the scraper would be used in a similar fashion to other mobile machinery at the site, the scraper was modelled in a similar way (ie 5 minutes full sound power in every 15 minute modelling period).
- HEM undertook further modelling of traffic noise on fire trails and requested ECRTN criteria be used for the assessment of truck noise.

The revised NIA showed the following with regard to operational noise at each site:

Aberdare East
The closest residences are located approximately 200 m north of the site on Cessnock Street. A number of scenarios were modelled, with the worst case scenario being that of a dozer pushing topsoil at the commencement of operations during winds from the southeast (Figure 7). Results showed that noise levels of over 45 dB(A) would be experienced at residences on Cessnock Street and elevated noise levels would be experienced at several other streets in Aberdare.

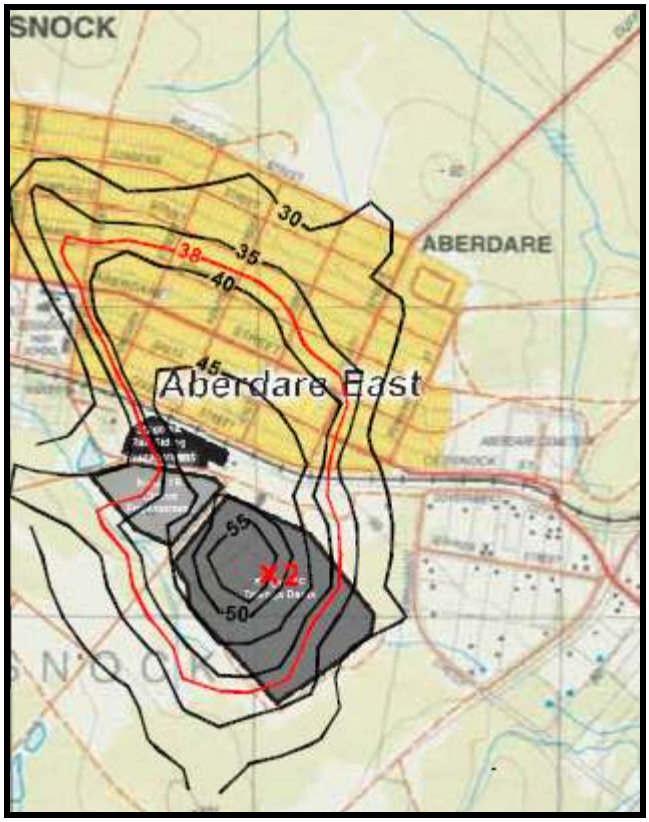

Figure 7: *Noise levels at Aberdare East at commencement of operations*

However there are ameliorating factors to these predicted noise levels, including:
- existing day time noise levels at Cessnock Street average 53 dB(A);
- the worst case noise level would only be experienced for a short duration at the commencement of operations;
- these impacts would only occur during winds from the southeast; and
- noise levels at residences on Greta Street would be expected to be at least 3 dB(A) less than shown in Figure 8 due to shielding effects from residences in Cessnock Street. Similarly, noise levels at residences in Aberdare Street would be expected to be 5 dB(A) less than shown in Figure 7.

The Aberdare East site is broken down into eight sub-areas (Areas A – H, see Figure 8), with Area E being the closest area of extraction to residences on Cessnock Street. The NIA modelled noise levels when extraction would be undertaken in Area E. This scenario shows that minor exceedances of the PSNLs would occur at 3 properties on Cessnock Street. The Department notes that this scenario has been modelled assuming machinery working at surface level. However, extraction would commence in Area C and a working face of between 2 – 4 m would have been established when extraction occurs in Area E. Therefore the Department considers the impact predictions for this scenario to be conservative and that actual noise levels would be able to be managed within the relevant criteria.

To mitigate noise impacts from operations at the Aberdare East site HEM has committed to the following measures:
- establishing a noise monitoring program;
- on-site meteorological monitoring;

- restricting activities during adverse weather conditions including southeast winds;
- silencing of machinery and installing 'smart' reversing alarms;
- scheduling operations so noisy activities are undertaken at times least likely to cause annoyance to nearby residents; and
- siting access and loading points at maximum distances from residences.

The Department considers these measures and the commitment to daytime hours of operation would result in acceptable noise levels at the site.

Figure 8: *Noise levels at Aberdare East when extraction occurs in Area E*

Neath

The nearest property to the Neath site is located approximately 100 m southwest of the site (see Figure 9). The NIA predicted exceedences of 3 dB(A) above the PSNL of 44 dB(A) at this residence. Exceedences of up to 2 dB(A) of the PSNL are predicted to occur at a further 4 properties on Maitland Road. DECC in its further submission recommended revised PSNLs at the Neath site of 47 dB(A) for residence N154 and 45 dB(A) for residence N101.

HEM has committed to undertaking similar noise mitigation measures as at Aberdare East. In addition, extraction would commence at the North Tailings Dam (the point furthest from residences) and would establish a working face of up to 4 m, which would provide some noise attenuation at the closest residences. The Department considers that these measures and the implementation of a comprehensive noise monitoring program would assist in managing the noise impacts from operations at the Neath site and assist in achieving compliance with DECC's revised noise limits for the site.

Richmond Main East

The 2 closest residences in the vicinity of Richmond Main East are located approximately 300 m to the east and 400 m to the north (see Figure 10). The NIA showed that the impacts of a dozer pushing topsoil (ie at the commencement of operations) would lead to exceedences of the PSNL of up to 3 dB(A) at both residences. There would be exceedences of 5 dB(A) under a northwest wind at residence R11 east of the site and 3 dB(A) under a southeast wind. Noise mitigation measures include those outlined above for Aberdare East as well as commencing operations in areas furthest from residences and establishing a working face of between 2 – 4 m. The Department notes that DECC has recommended a revised PSNL of 38 dB(A) for residence R11.

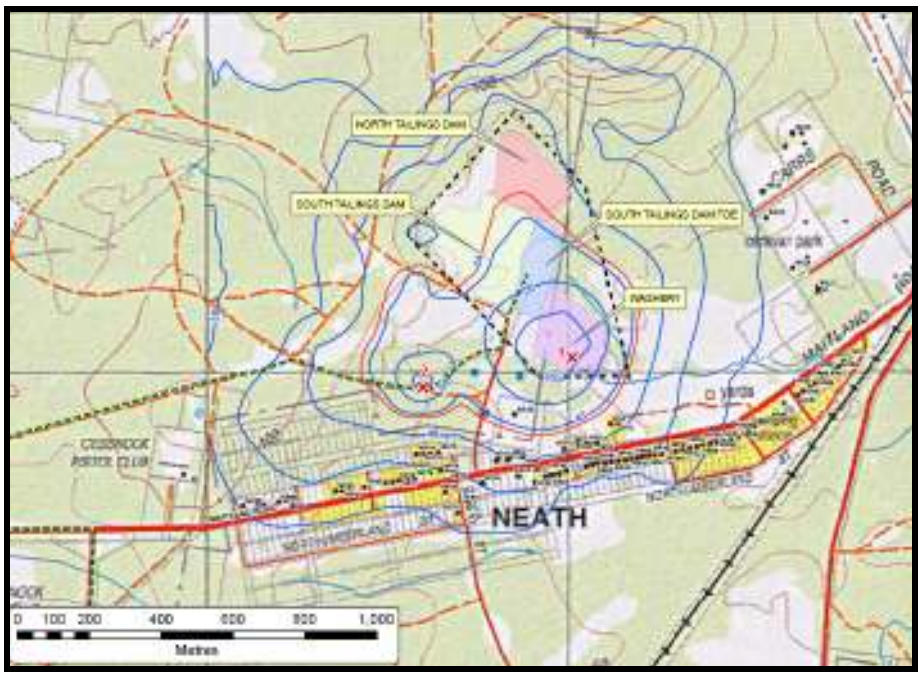

Figure 9: *Noise levels at Neath during extraction at the Washery area*

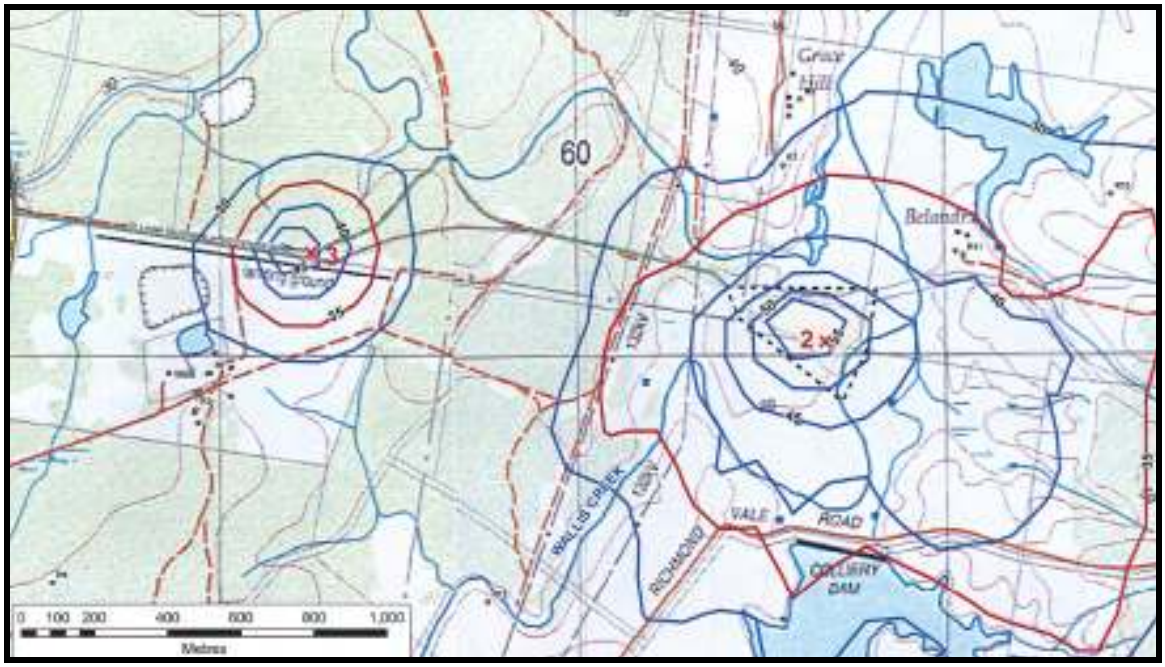

Figure 10*: Noise levels during normal operating conditions at Richmond Main East*

Traffic Noise

HEM's NIA also considered truck noise on the preferred haulage routes. Sections of the proposed haulage routes (ie the fire trails) are generally closed for public access and are therefore not public roads in the ordinary sense of the term. However, HEM argued that the applicable noise assessment criterion for haulage should be the ECRTN criterion of 55 dB(A), as this would be the applicable criterion if haulage was to take place using only public roads. The Department is satisfied that the ECRTN criteria can be applied in this instance to the predicted traffic noise on non-public sections of the haulage routes.

The Department requested that HEM undertake further noise modelling using the ECRTN criteria to assess the potential impact of noise from heavy vehicles using the fire trails. The results from this further modelling in the PPR showed that noise from haulage operations would comfortably comply with ECRTN criteria on all fire and other trails within the proposed haulage routes.

Conclusion

The project has the potential to exceed its PSNLs at each site under a range of meteorological conditions if mitigation and management practices are not implemented. The Department recognises that noise impacts will occur at residences at Aberdare at the commencement of operations at the Aberdare East site but that these impacts would only occur for a short period.

The Department is generally satisfied that the noise impacts from the project can be effectively managed using the mitigation and management measures outlined by HEM. The Department notes that DECC has stated it is able to issue an environmental protection licence (EPL) for the project and has provided revised PSNLs for each site.

The Department recommends that HEM should undertake all reasonable and feasible measures to ensure noise from the project can be minimised. These measures should include a comprehensive noise monitoring program and on-site meteorological monitoring to support corrective management practices. The results from the monitoring program should be reported on a regular basis to be able to check whether relevant criteria are being met.

4.2 Traffic and Transport

The Project includes the road transport of extracted material from the three reclamation sites to the Hebburn No 3 CHPP. The EA included an assessment of traffic impacts which outlined the haulage routes that would be used and estimated the number of heavy vehicle movements the project would be likely to generate. Existing traffic volumes on all roads proposed to be used for haulage were assessed. The local road network in the vicinity of the project is generally bounded and serviced by three main roads, these being:

- Maitland/Cessnock Road – connecting Cessnock with Kurri Kurri and Hexham;
- Leggetts Drive – connecting Kurri Kurri to Mulbring; and
- Lake Road – forming part of the route between Branxton and the F3 Freeway at Toronto.

These three main inter-regional roads are linked with 2 local roads, namely Neath Road and Duffie Drive (see Figure 11).

HEM's original transport routes caused significant community concern, as expressed through submissions. Aberdare residents raised concerns regarding increased truck movements on these roads and that trucks would need to pass both the Aberdare Preschool on Cessnock Road and the Kearsley Public School on Caledonia Street. Similarly, the Neath community was concerned with increases in truck movements through Neath township. Alternative haulage routes were proposed in submissions by the community that included using a combination of main roads and fire trails on Crown land and within the Werakata National Park. Use of these alternative routes would avoid trucks passing the schools and passing through Neath township.

HEM investigated the use of theses alternatives (Kearsley Powerline Fire Trail in the vicinity of Aberdare and in Werakata National Park and other fire trails on Crown land). HEM accepted the proposed revisions and included the revised routes in its PPR. It subsequently sought and gained in-principle approval from DECC to use the Kearsley Powerline Fire Trail in the Werakata National Park and from Lands for the use of the Washery Fire Trail at Neath and other trails on Crown land (as shown on Figure 11).

The Department of Lands advised the Department that it is able to give approval for the use of fire trails on Crown land for haulage purposes. Approval to use fire trails in the national park for commercial purposes is regulated through the *National Parks and Wildlife Act 1974* and the associated *National Parks and Wildlife Regulation 2002*. DECC subsequently advised the Department in writing that it is able to grant approval for the use of the trails for haulage.

Figure 11: *Preferred haulage routes*

The traffic impact assessment showed that the project would add a maximum of 60 truck movements per hour (30 laden, 30 unladen), which would equate to ten laden trucks per hour on average from each reclamation site if all three sites were operating simultaneously. However, HEM also stated that this would represent a maximum operational scenario that would be unlikely to occur for any extended period throughout the project.

The current peak hour level of service is D or better for all roads, and the project would result in a negligible increase in the volume/capacity ratio and the level of service would not change. Pedestrian amenity would not be adversely affected by the project and the preferred haulage routes would now not impact on the Aberdare Preschool and the Kearsley Public School.

To mitigate the impact of increased truck movements and to address road safety concerns as raised by residents and the RTA, HEM has committed to undertake upgrade works to various road intersections, including:

- the Maitland Road/Tunnel Road intersection, Caledonia Street/Government Circuit intersection and Cessnock Road/Cemetery Access intersection would all be upgraded to Type AUR intersections to allow through traffic to pass trucks waiting to turn at each of these intersections;
- advance warning signs would be installed on the approach to the Maitland Road/Duffie Drive intersection, the Caledonia Street/Government Circuit intersection, the Richmond Main East Haulage Route/Leggetts Drive intersection and the Leggetts Drive/HEZ Spine Road intersection to advise approaching vehicles of the potential for trucks turning;
- signage and line marking would be installed at the access road to the Gordon Williams Memorial Lawn Cemetery due to the proximity of a railway level crossing. The Cemetery's access road would also be upgraded to allow for heavy vehicles;
- vegetation on the southwest corner of the intersection of Neath Road and the Neath and Aberdare East Haulage Route would be cleared to improve lines of sight. Advance warning signs would also be installed on the approaches to the proposed intersection to mitigate sight deficiencies;
- shaker grids would be installed wherever unsealed fire trails meet sealed public roads; and
- the shoulders at the Aberdare Fire Trail/Duffie Drive intersection would be sealed.

In addition, to ensure fire trails would be suitable for haulage, HEM would also undertake the following works:

- constructing a durable road surface to allow heavy vehicle movements;
- constructing culverts where trails cross creeks or drainage lines;
- upgrading the rail level crossing on the Kearsley Powerline Fire Trail to an appropriate standard;
- ensuring fire trails are wide enough to permit two-way haulage, through the construction of passing bays. However, trails would be restricted to a maximum width of 3.5m where sensitive vegetation exists; and
- upgrading and maintaining fire trails to relevant standards.

HEM has committed to undertake all upgrade works on public roads to the satisfaction of the RTA and Cessnock City Council. HEM has been notified that ancillary conditions would be imposed by DECC and the Department of Lands with respect to the licences for the upgrade and use of fire trails.

Overall, the Department is satisfied that the use of the alternative haulage routes (as proposed by the community in submissions and accepted by HEM) would substantially reduce the project's traffic impacts. The revised routes would avoid truck movements past both the Aberdare Preschool and the Kearsley Public School. The Department notes that the project would not change the level of service of public roads and considers the proposed road works would adequately address safety issues and be a substantial ongoing benefit to the community. The Department is therefore satisfied that the increased truck movements from the project would not have any significant negative effect on the local road network.

The Department is satisfied that HEM has adequately addressed road traffic, access and safety issues. However, it has recommended conditions of approval that would require HEM to undertake upgrades to intersections and fire trails as outlined above, prior to the commencement of extraction. The Department believes that undertaking these works would provide for the safety of, and minimise any inconvenience to, other road users during the project.

4.3 Air Quality

HEM's air quality assessment (AQA) was prepared in accordance with DECC's *Approved Methods for the Modelling of Air Pollutants in New South Wales.* The assessment was based on the use of an air dispersion model, which used estimated emissions and local meteorological data to predict resultant dust concentrations and deposition levels. The assessment determined background air quality using data from the closest monitoring station at Kurri Kurri Hospital. Data shows that during May-June 2006 the maximum measured 24-hour average PM_{10} concentration was 28.7 $\mu g/m^3$ and the annual average PM_{10} concentration for the year 2005-6 was 4.9 $\mu g/m^3$ (however HEM notes that this figure may be too low and the actual annual average PM_{10} concentration could be as high as 15 $\mu g/m^3$). Each site was then modelled individually under a number of meteorological scenarios, leading to the following results.

Aberdare East
When extraction would be occurring in Areas C and E (see Figure 8), the closest residences are predicted to experience maximum 24-hour PM_{10} concentrations of 16.4 $\mu g/m^3$ and 16.9 $\mu g/m^3$ respectively. It is therefore unlikely that any exceedence of DECC's 24-hour average PM_{10} goal of 50 $\mu g/m^3$ would occur. Annual average PM_{10} concentrations are predicted to be 2.5 $\mu g/m^3$ and 3.3 $\mu g/m^3$ respectively and therefore extraction is not predicted to lead to any exceedences of DECC's criterion of 30 $\mu g/m^3$.

However, during extraction in area H (see Figure 8) the closest residences are predicted to experience maximum 24-hour average PM_{10} concentrations of 35.1 $\mu g/m^3$. Therefore, when considered in a cumulative impact context, a possibility exists for exceedence of DECC's 24-hour average PM_{10} criteria of 50 $\mu g/m^3$. To manage and mitigate potential air quality impacts at the Aberdare East site, HEM has committed to the following actions:

- development of an air quality management plan;
- installation of a light scatter photometer to allow continuous assessment of air quality to allow management measures to be implemented where necessary;
- meteorological monitoring and potential restriction of operations during south and southeast winds; and
- monitoring the first four weeks of operations and providing this data to DECC and Council to assess whether the project is exceeding relevant criteria. If the project is found to be exceeding criteria then HEM would undertake reasonable and feasible economically achievable measures to reduce the level of impact.

Neath
Extraction from the Neath site in both the Southern Tailings Dam area and the Washery area would not lead in itself to exceedances of DECC's 24-hour average PM_{10} criteria or annual average PM_{10} criteria. However, minor exceedances of the 24-hour average PM_{10} criteria may occur at a number of properties on Colliery Street and Cessnock Road (see Figure 9) when considered in a cumulative context after taking into consideration the maximum measured 24-hour average PM_{10} concentration of 28.7 $\mu g/m^3$ recorded at the closest monitoring station.

To manage and mitigate air quality impacts at the Neath site, HEM has committed to actions as outlined above for the Aberdare East site, with the exception being that the potential restriction on operations occurs during winds from the north and northeast.

Richmond Main East
The AQA showed that given the rural nature of the Richmond Main East site and the distance between the site and residences in its proximity, the maximum predicted 24-hour average PM_{10} levels would be 14.4 $\mu g/m^3$ at residence R1 (northeast of the site). Therefore no exceedences of 24-hour average or annual average PM_{10} criteria are expected. No mitigation measures are proposed for the Richmond Main East site. However the Department considers that HEM should undertake a monitoring program to ensure dust emissions at this site are complying with relevant criteria.

The Department considers that HEM's air quality assessment adequately addresses potential impacts associated with the project and that these impacts can be adequately monitored and managed. The assessment demonstrates that onsite management practices would allow the management of dust emissions to minimise the potential impact on residences in the vicinity of each reclamation site. The Department however recommends that HEM implement a rigorous air quality monitoring program for each of the sites and has included conditions of consent to reflect this.

4.4 Rehabilitation

The project includes the rehabilitation of each site following extraction of chitter and tailings. HEM would seek to stabilise the final landform at each site and where possible mirror topography in existence prior to the extraction. Where this is not possible, a stable self-draining landscape would be created. The following procedures would be undertaken to achieve this outcome:

- reshaping landforms within the extraction area to reflect the surrounding landscape;
- placing topsoil on the final landform and revegetation to stabilise soils;
- creating sedimentation detention basins coupled with a borehole to underground workings down gradient of the site to help manage post extraction acid and salt leachate (at Aberdare East and Neath); and
- decommissioning and rehabilitation of clean water diversions around the site to allow surface water flows through the site.

The principal rehabilitation objective is revegetation using grasses consistent with rural landscapes of the lower Hunter Valley region and native vegetation consistent with surrounding landscapes.

The final landform and final land-use at each site would be subject to consultation with the respective landholders and key government agencies and would be included in a detailed Rehabilitation Plan as part of the Mining Operations Plan (MOP) administered by DPI. Rehabilitation at each site would involve:

Aberdare East
The final landform for Aberdare East would be a continuation of the surrounding gently-sloped valley with re-establishment of a slow meandering drainage line. Rehabilitation would include the establishment of riparian vegetation along each side of the drainage line to promote improved water quality. On either side of the riparian corridor, non-invasive pasture grasses would be planted in order to provide stability for soils at the site. At the topographical low point of the site, a sedimentation dam would be constructed to capture and control any sediment and acidic or saline waters that may leach from the site during the rehabilitation process. The sedimentation dam would be decommissioned at a later time when the site's water quality improves.

Neath
The final landform for Neath would mirror ground contours where possible and result in two gently sloped gullies joining in a sedimentation dam to capture and control any sediment. The site is wholly contained within a vegetated landscape dominated by Lower Hunter Spotted Gum Ironbark Forest (see cover photograph) and rehabilitation would involve the use of native plants contained within this vegetation type.

Richmond Main East
The landform proposed for Richmond Main East would be a gentle undulation consistent with the surrounding landscape. A sedimentation basin would also be established, however it is expected that this basin would be substantially drier then the Aberdare East and Neath sites.

Consultation with the landowner established that the preferred final landform should be suited to grazing. Given the site is located adjacent to Wallis Creek a corridor of the site along Wallis Creek would be revegetated using appropriate riparian plant species as referenced in the Wallis Creek Rivercare Plan.

The Department considers the rehabilitation actions that would be undertaken by HEM would have beneficial environmental outcomes at each of the 3 sites. The Department notes that HEM would lodge a security bond with the DPI prior to the commencement of operations to ensure the rehabilitation of the sites is undertaken to appropriate standards and be consistent with strategic planning objectives. In addition, the Department has recommended conditions of approval that require HEM to:

- develop a rehabilitation management plan for each site in consultation with DECC, Lands and Council;
- establish woodland vegetation on the Aberdare East and Neath sites; and
- undertake progressive rehabilitation of each site to ensure it occurs at the earliest opportunity.

4.5 Other Issues

Issue	*Potential Impacts*	*Mitigating Factors*
Groundwater & Surface Water Management	▪ The project may impact on local groundwater resources. ▪ The project may impact on surface water.	▪ The removal of carbonaceous material from each of the 3 reclamation areas would also remove contaminated soils known to cause acid leachate and contamination of water stored in underground workings. ▪ A groundwater monitoring program would be developed for each site. ▪ Clean water diversion structures would be constructed at each site.
Flora and Fauna	▪ The removal of chitter and tailings and the proposed upgrades to road intersections and fire trails would necessitate the removal of vegetation.	▪ Upgrades to the Kearsley Powerline Fire Trail and the Washery Fire Trail would be restricted to existing cleared tracks. ▪ The trail between Richmond Main East and the CHPP would remain a single lane trail with additional passing bays, limiting the amount of vegetation clearing on that trail. ▪ Vegetation clearing at public road intersections would be limited where practicable. ▪ There would be no direct impact on threatened flora and fauna species. ▪ Each site would be rehabilitated and revegetated following completion of the project.
Greenhouse Gases	▪ The burning of product coal as well as the use of machinery and clearing of vegetation would contribute to climate change through release of greenhouse gases from stored carbon in vegetation and use of fossil fuels.	▪ HEM supplied a comprehensive assessment of the impacts on climate change from reclamation operations and the burning of product coal. ▪ Although the Project would lead to the release of 2.03 Mt of CO_2-equivalent emissions, this total represents only 0.00001% of annual global CO_2-equivalent emissions. ▪ HEM would prepare an Energy Savings Action Plan to manage and reduce its on site greenhouse gas emissions. ▪ Vegetation clearing would be limited.
Aboriginal Cultural Hertiage	▪ The project may disturb Aboriginal heritage sites within Werakata National Park.	▪ HEM would consult with the local Aboriginal community prior to undertaking haulage within the Werakata National Park.
Socio-Economic Impacts	▪ The project would deliver a beneficial socio-economic outcome.	▪ The Project would generate up to 57 full time jobs for 3.5 years. ▪ Employees would be sourced from local labour markets. ▪ The project would deliver royalty income to the State.

5. RECOMMENDED CONDITIONS

The recommended conditions are required to:

- prevent and/or minimise adverse impacts of the proposal;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting in accordance with current best practice;
- provide for the ongoing environmental management of the project; and
- ensure that long term rehabilitation and final land use objectives for the mine are satisfactorily achieved.

The recommended conditions address management of noise and air quality impacts, traffic and transport impacts, greenhouse gas emissions, landscape and rehabilitation management, environmental management systems, on-going environmental monitoring, community consultation, community enhancement measures, and complaints management and performance audits.

The recommended conditions of approval are summarised in Appendix A and shown in full in Appendix B. HEM has reviewed these conditions and accepted them. The Department believes these conditions reflect current best practice for the regulation of extractive operations of this type in NSW.

6. CONCLUSION

The Department recognises that a balance must be met in the promotion and co-ordination of the orderly and economic use of land; the proper management and development of the State's resources; and the protection of the environment and ecologically sustainable development.

The Department considers it is of benefit to the local environment for the project to proceed, given that the project seeks to remove materials that have the potential to contaminate shallow groundwater resources and reprocess these materials into saleable coal. The project includes rehabilitation works that would integrate each site with surrounding land-uses.

The Department has assessed the project application, its accompanying EA, submissions received following exhibition of the application, HEM's response to submissions and its Preferred Project Report, and is satisfied that there is sufficient information available to determine the application. The key issues identified in the Department's assessment or raised in submissions concern transport of reclaimed material, noise impacts and rehabilitation of the 3 sites upon completion of the project.

The most notable environmental issues associated with the project are noise impacts and impacts from transporting material from the 3 sites to the CHPP. HEM has committed to a suite of mitigation measures to minimise noise and has responded to community concerns by accepting alternative haulage route options that greatly reduce the impact of increases in truck movements on local roads. In this regard it should be noted that DECC and Department of Lands have given in-principle approval for HEM to use fire trails as haulage routes. Air quality impacts would also not be significant throughout the project's life.

Other impacts such as flora and fauna impacts and impacts to water resources were considered to require management, but not to be of sufficient magnitude to cause significant impacts on surrounding landowners or the regional community. The project has a capital investment value of $3 million and would create up to 57 full time jobs for 3 years.

The Department is satisfied that the residual environmental and socio-economic impacts of the project can be adequately mitigated and/or managed and that the benefits outweigh their costs. The Department recommends approval of the project, subject to recommended conditions which cover all proposed extraction and transportation operations.

7. RECOMMENDATION

It is RECOMMENDED that the Minister:

- consider the findings and recommendations of this report;
- approve the project application, subject to conditions, under section 75J of the *Environmental Planning and Assessment Act 1979*; and
- sign the attached instrument of approval (Tagged B).

David Kitto
Director
Major Development Assessment

Chris Wilson
Executive Director
Major Project Assessment

Sam Haddad
Director-General

APPENDIX A. CONDITIONS OF APPROVAL SUMMARY

Aspect	*Condition*	*Requirement*
Schedule 2: Administrative Conditions		
Terms of Approval	5	Approval for mining restricted to 4 years.
	6	Restriction on production to 900,000 tonnes of material a year.
	7	Development carried out only during daytime Monday to Friday.
Schedule 3: Specific Environmental Conditions		
Noise	1	Noise impact assessment criteria.
	2	Restrictions to operations during adverse meteorological conditions.
	3	Noise Management Plan.
Air Quality	4	Air quality impact assessment criteria.
	6	Air Quality Monitoring Program.
Meteorological Monitoring	7	Requirement for a suitable meteorological station in the vicinity of each site.
Surface and Groundwater	8	Restriction on discharge of water from each site.
	9	Water Management Plan.
Traffic and Transport	10	Requirement to upgrade local roads and fire trails.
Rehabilitation and Landscape Management	12	Requirement to rehabilitate each site.
	13	Rehabilitation and Landscape Management Plan.
Schedule 4: Independent Review		
Independent Review of Impacts	1	Right to independent review of predicted impacts for landowners.
	5	Requirement to undertake measures to ensure compliance if independent review shows non-compliance or to reach agreement with affected residents.
Schedule 5: Environmental Management, Monitoring Auditing and Reporting		
Environmental Management Strategy/ Monitoring Program	1-2	Environmental Management Strategy / Environmental Monitoring Program.
Incident Reporting	3-4	Requirement to report incidents.
Annual Reporting	5	Annual Environmental Management Report.
Auditing	6-8	Requirement to undertake regular independent environmental audits.
CCC	9	Requirement for Community Consultative Committee.
Access to Information	10-11	Requirement to publicly report environmental management plans/programs/strategies, and monitoring results.

APPENDIX B. RECOMMENDED CONDITIONS OF APPROVAL

APPENDIX C. CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

State Environmental Planning Policy (Major Projects)

The proposal is classified as a major project under Part 3A of the EP&A Act because it is development for the purpose of coal mining and consequently meets the criteria in clause 5 of schedule 1 of *State Environmental Planning Policy (Major Projects) 2005*.

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 – (Mining SEPP)

As the application for project approval under Part 3A of the EP&A Act was submitted prior to the commencement of the Mining SEPP, the provisions of this SEPP do not apply to the project.

State Environmental Planning Policy (SEPP) No11 – Traffic Generating Development

The proposal is affected by the provisions of SEPP 11, as an 'extractive industry or mining' (Schedule 1(m)). The application was referred to the RTA, which confirmed that it did not object to the proposal.

SEPP No 33 – Hazardous and Offensive Development

SEPP 33 requires consideration of whether an industrial proposal is a potentially hazardous or offensive industry. This is defined as a development that *'would pose a significant risk in relation the locality: to human health, life or property; or to the biophysical environment, and includes a hazardous industry and a hazardous storage establishment'.*

All hazardous materials would be managed in accordance with relevant guidelines. An Environment Protection Licence (EPL) would be obtained for the proposed development. As such, the Department is satisfied that the proposal is generally consistent with the aims, objectives, and requirements of SEPP 33.

SEPP No 44 – Koala Habitat Protection

The EA identified that the project site does not contain 'core' or 'potential' Koala habitat and does not have a resident population of Koalas. As such, the Department is satisfied that the proposal is generally consistent with the aims, objectives, and requirements of SEPP 44.

SEPP 55 – Remediation of Land

The Department believes that although the land subject to the project application contains material considered to be contaminated, it is satisfied that the sites are suitable in their current state for the purpose for which the project is proposed to be carried out. Therefore the Department is satisfied that the project is generally consistent with the aims, objectives and requirements of SEPP 55.

Hunter Regional Environmental Plan 1989

Part 6, Division 1 of the *Hunter Regional Environmental Plan (HREP) 1989* states the objectives of the plan in relation to planning strategies for mineral resources and extractive industries. The Department is satisfied that the proposed project would manage extraction in a manner that minimises adverse impacts on the environment and population, ensure that the most efficient extraction of the resource would be undertaken and that transport of reclaimed material from the each of the sites would have minimal adverse impacts on the community.

Cessnock Local Environmental Plan

The land subject to the project application is primarily zoned 1(a) (Rural 'A' Zone) and development for the purpose of coal mining is permissible with consent in this zone. Development for the purpose of extractive industry is permissible with consent on the majority of this land by virtue of *Cessnock Local Environmental Plan 1985.*

APPENDIX D. PROPONENT'S: RESPONSE TO SUBMISSIONS PREFERRED PROJECT REPORT STATEMENT OF COMMITMENTS

See attached CD containing a file entitled *Hunter Enviro-Mining (Operations) Pty Limited, Chitter and Tailings Reclamation Project, Cessnock NSW, Preferred Project Report,* October 2007.

APPENDIX E. SUBMISSIONS

See the attached CD containing a folder entitled *Submissions*.

APPENDIX F. ENVIRONMENTAL ASSESSMENT REPORT

See the attached CD containing a folder entitled*, Environmental Assessment Report Chitter and Tailings Reclamation Project* dated December 2006.