

## DEPARTMENT OF PLANNING

## Major Development Assessment

## For Decision

MODIFICATIONINVINCIBLE OPEN CUT EXTENSION PROJECT**PURPOSE**

To determine an application (05\_0065 MOD 2) from Coalpac Pty Limited (Coalpac) to modify the project approval for the Invincible Open Cut Extension Project.

**BACKGROUND**

The Invincible coal mine is located about 24 kilometres north-west of Lithgow in the Western Coalfield (see Figure 1).

On 7 September 2006, the Minister approved an extension to the open cut mining operations at the mine.

Under this approval, Coalpac is allowed to produce up to 350,000 tonnes of coal a year, and truck it to domestic markets.

Coalpac started mining in the extension area in October 2006.

At present, Coalpac is not approved to conduct auger mining operations, as these did not form part of its original mining proposal, nor were the environmental impacts of auger mining assessed.

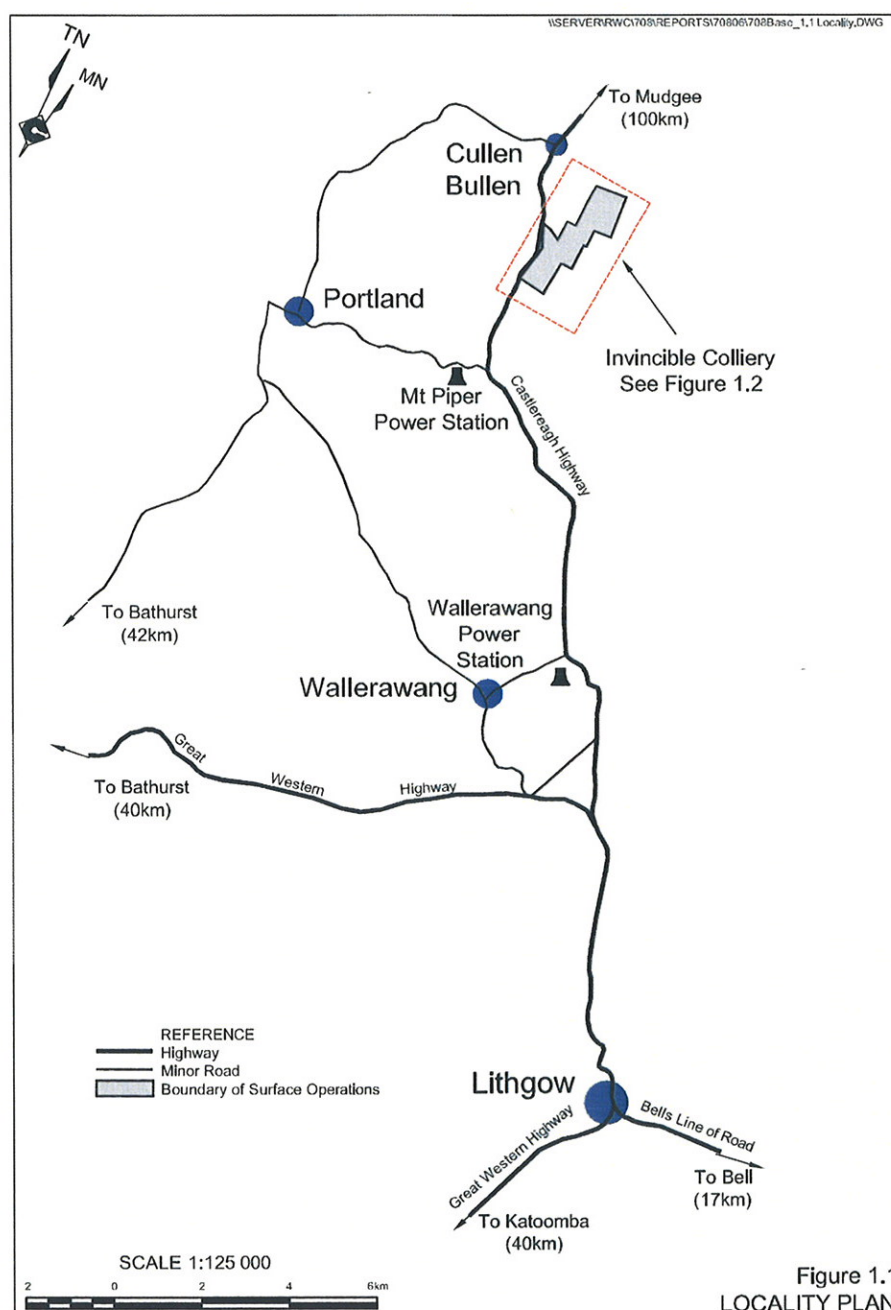


Figure 1: Regional Location

## **PROPOSED MODIFICATION**

Coalpac proposes to use auger mining operations to recover about 350,000 tonnes of coal from the highwall of its existing Invincible open cut coal mine and an area that has been rehabilitated following open cut mining operations (see Figure 2 for the location of proposed modified activities).

Auger mining involves using specialised equipment to "drill" large horizontal holes into a coal seam to recover coal that would be unable to be economically mined by either open cut or underground mining techniques. Each hole would be slightly less than two metres in diameter and may be up to 200 metres in length. Auger mining only recovers about 30% of the coal resources in the area of extraction. However, all of the coal in this area would be sterilised without the use of auger mining techniques.

Coalpac proposes to only use auger mining techniques for the Irondale coal seam, as the Lithgow seam (also mined in the open cut) is no longer amenable to auger mining as prospective remnant areas of the coal seam have already been extensively mined by former underground mining operations (see Figures 3 and 4).

Coalpac is also seeking to increase its coal production rate from 350,000 to 500,000 tonnes a year to supply Delta Electricity with coal for electricity generation.

Under its modified proposal, Coalpac would be able to process the additional coal from auger mining either at its existing coal crushing and screening area or coal preparation plant (CPP). Water for the CPP would come from the existing water storage dam on site. Tailings from the CPP would be deposited in existing tailings storages, while coarse rejects would be returned to open cut mining areas to be incorporated into mining voids as a component of site rehabilitation.

The proposal would increase the daily maximum number of coal truck movements from the site by 50%. However, Coalpac has undertaken to direct the increased coal production to the Mount Piper power station, located about 4 kilometres south of the mine, rather than to the Wallerawang power station, located an additional 8 kilometres further south. The proposed increase in coal transport would be achieved without increasing coal truck movements past private residences.

On 11 April 2007, Coalpac submitted an application to the Department seeking approval for the proposed modification under section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

## **STATUTORY CONTEXT**

The Minister was the approval authority for the original project application under Part 3A of the EP&A Act, and is consequently the approval authority for this application to modify the existing project approval under section 75W of the Act. On 7 June 2007, the Minister delegated his powers and functions as an approval authority to modify project approvals under section 75W of the EP&A Act in particular circumstances to the Executive Director, Major Project Assessment. The Executive Director may determine this application under delegated authority.

## **CONSULTATION**

Section 75W of the EP&A Act does not require the Department to consult agencies in relation to the proposed modification or to make the modification application and supporting Environmental Assessment (EA) publicly available.

However, the Department referred the application to the Lithgow City Council (Council), the Department of Environment and Climate Change (DECC), Department of Primary Industries (DPI), the Department of Water and Energy (DWE), the NSW Roads and Traffic Authority (RTA) and Forests NSW (the landowner for the Invincible open cut extension) for comment.

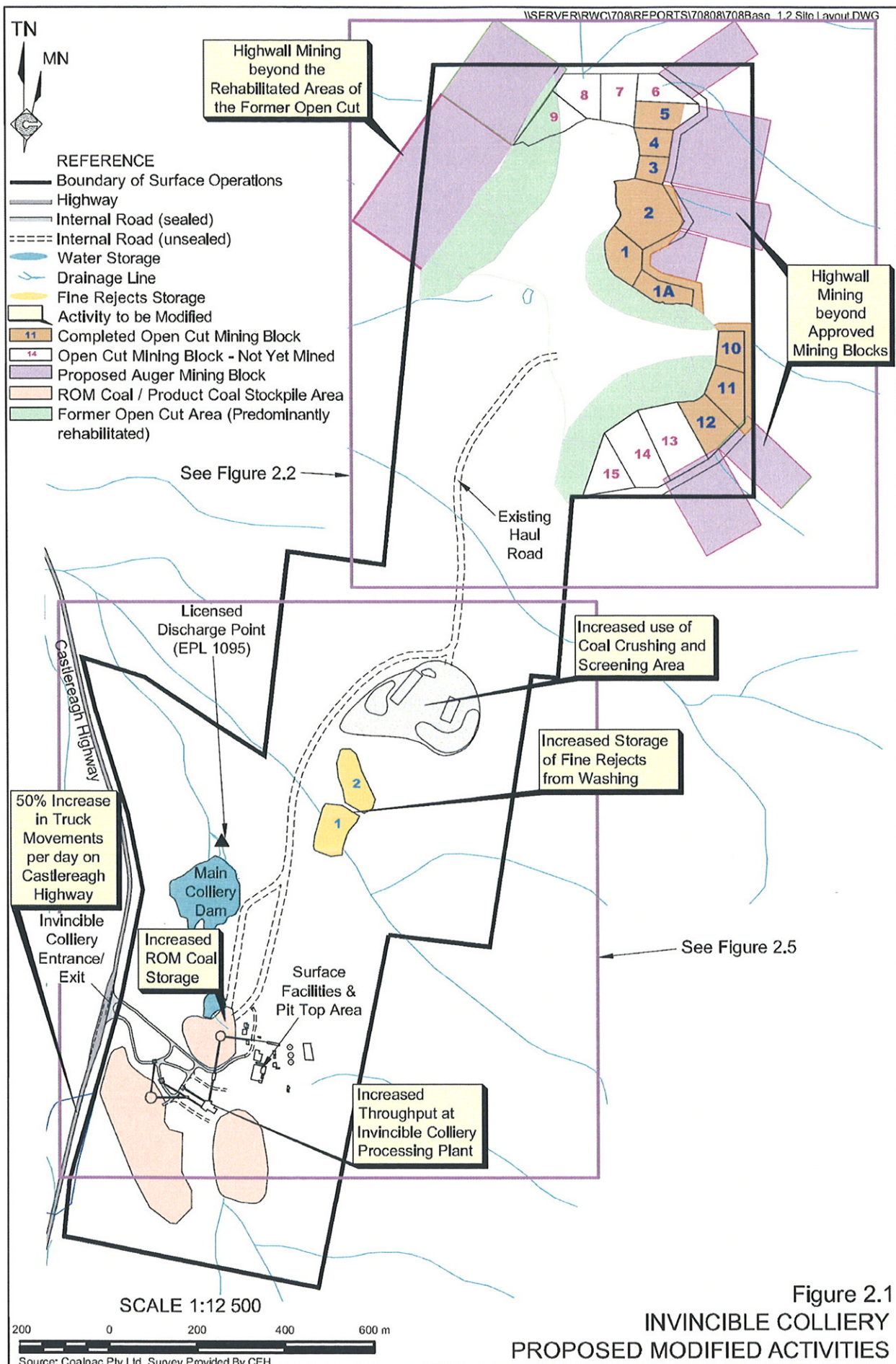
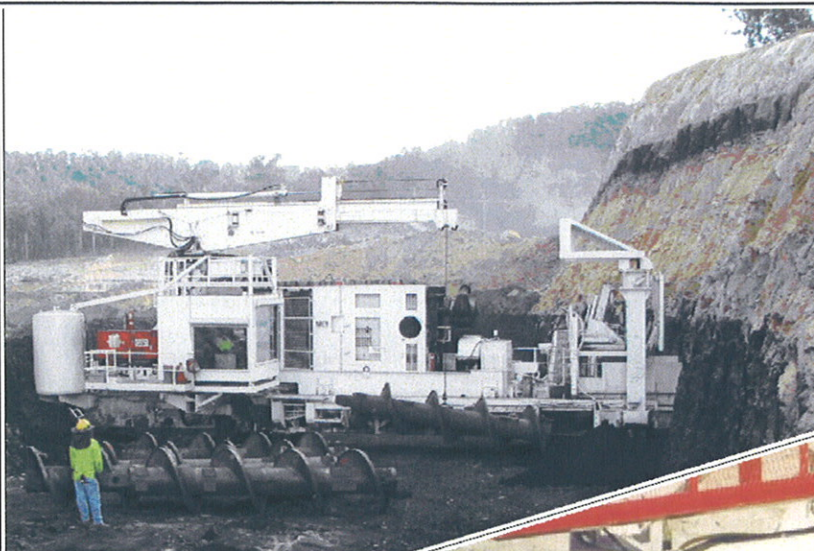
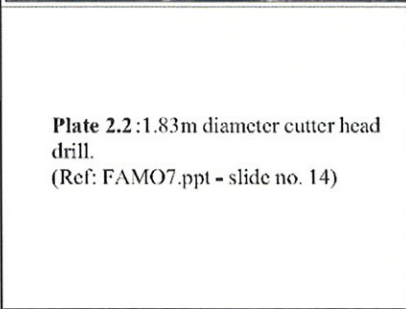


Figure 2.1  
INVINCIBLE COLLIERY  
PROPOSED MODIFIED ACTIVITIES

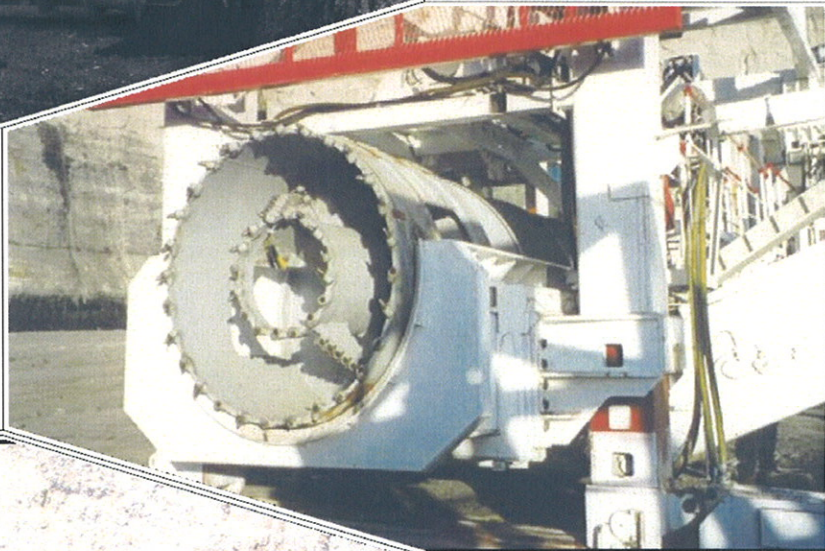
Figure 2: Proposed Modified Activities



**Plate 2.1:** LET / Brydet AM1500 Series Coal Auger including 1500hp CAT diesel engine, operator's cab and auger flight hoist.  
(Ref: Coalpac Pty Ltd)



**Plate 2.2:** 1.83m diameter cutter head drill.  
(Ref: FAMO7.ppt - slide no. 14)



**Plate 2.3:** Auger flights (awaiting use).  
(Ref: FAMO7.ppt - slide no. 19)



**Plate 2.4:** Elevating Stacker Conveyor.  
(Ref: FAMO7.ppt - slide no.20)



**Figure 3:** Auger Mining Equipment

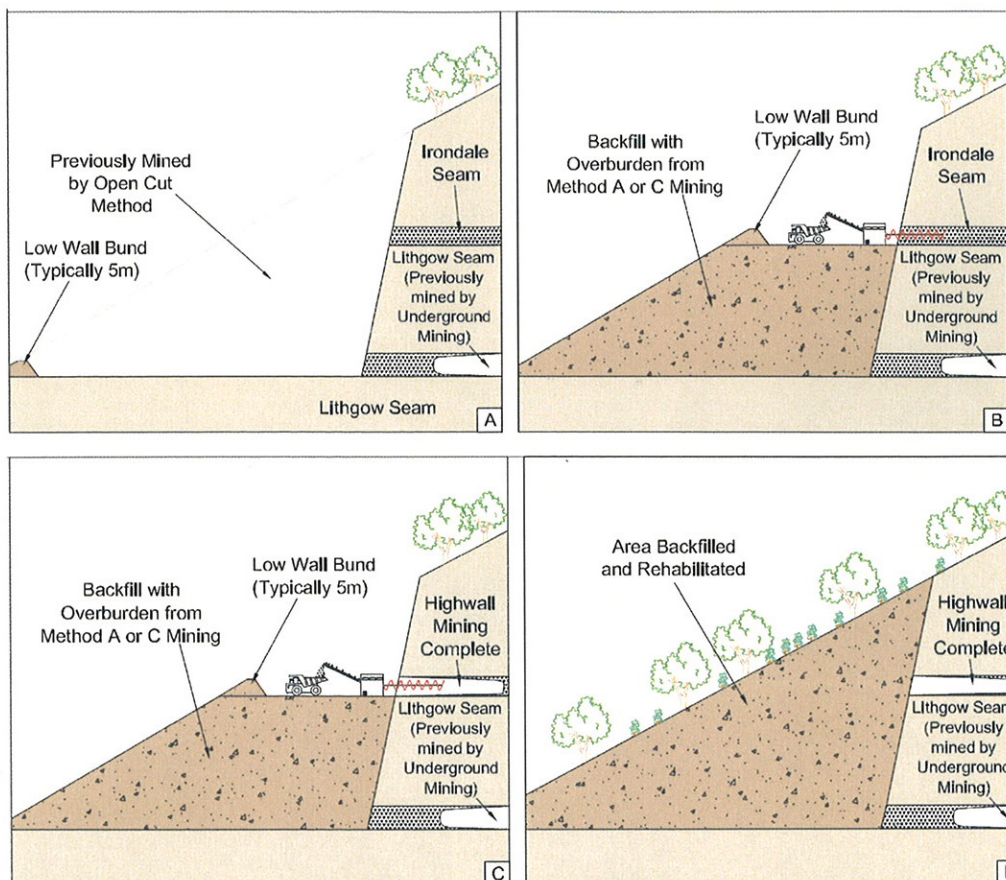


Figure 4: Auger Mining Sequence

The EA was also made publicly available from 17 to 31 October 2007. The Department received only one public submission from a special interest group (Lithgow Environment Group) objecting to the proposal, and four submissions from government agencies.

DECC, DWE and DPI did not object to the proposal and Council sought restrictions on coal haulage on local public roads, improvements to the site's visual screening and a planning agreement to enhance community facilities in the Cullen Bullen area.

DECC raised concerns over predicted noise levels at the two nearest privately owned residences: "Hillview" and "Billabong". Subsequently, the owner of these two residences has entered into an agreement with Coalpac accepting the predicted level of noise impacts.

The issues raised in submissions are further considered below.

## CONSIDERATION OF ISSUES

The Department considers the key issues for the proposal to be noise, road transport of coal and socio-economic impacts.

The single public submission from the Lithgow Environment Group provided a table of non-compliances for 8 coal mines in the Western Coalfield with their respective DECC environmental protection licences (including Invincible Colliery, which was shown to be in compliance since the recommencement of mining operations in 2006). It also raised issues not directly related to the proposed modification such as minewater discharges from the underground mine to the Cocks River catchment and potential consequential impacts on Sydney's drinking water supply. These are matters unaffected by the proposed modification and are more directly relevant to the responsibilities of the DECC. This submission also raised the issue of cumulative impacts. The Department considers the sole potential cumulative impact of the proposal to be road transport impacts, which are addressed below.

## Operational Noise

Coalpac assessed the noise impacts associated with the mine operating at an increased rate of 500,000 tonnes a year while utilising coal auger mining equipment and operating its coal processing plant on the site (coal crusher and screening plant and CPP). Figure 5 shows the location of residential receivers in proximity to the mine, with the village of Cullen Bullen (population 300, shown in grey) to the northwest of the mine. Coalpac's noise assessment demonstrated that noise impacts from the introduction of auger mining equipment would not add to existing noise impacts and that these impacts would be relatively constant over the life of the mine.

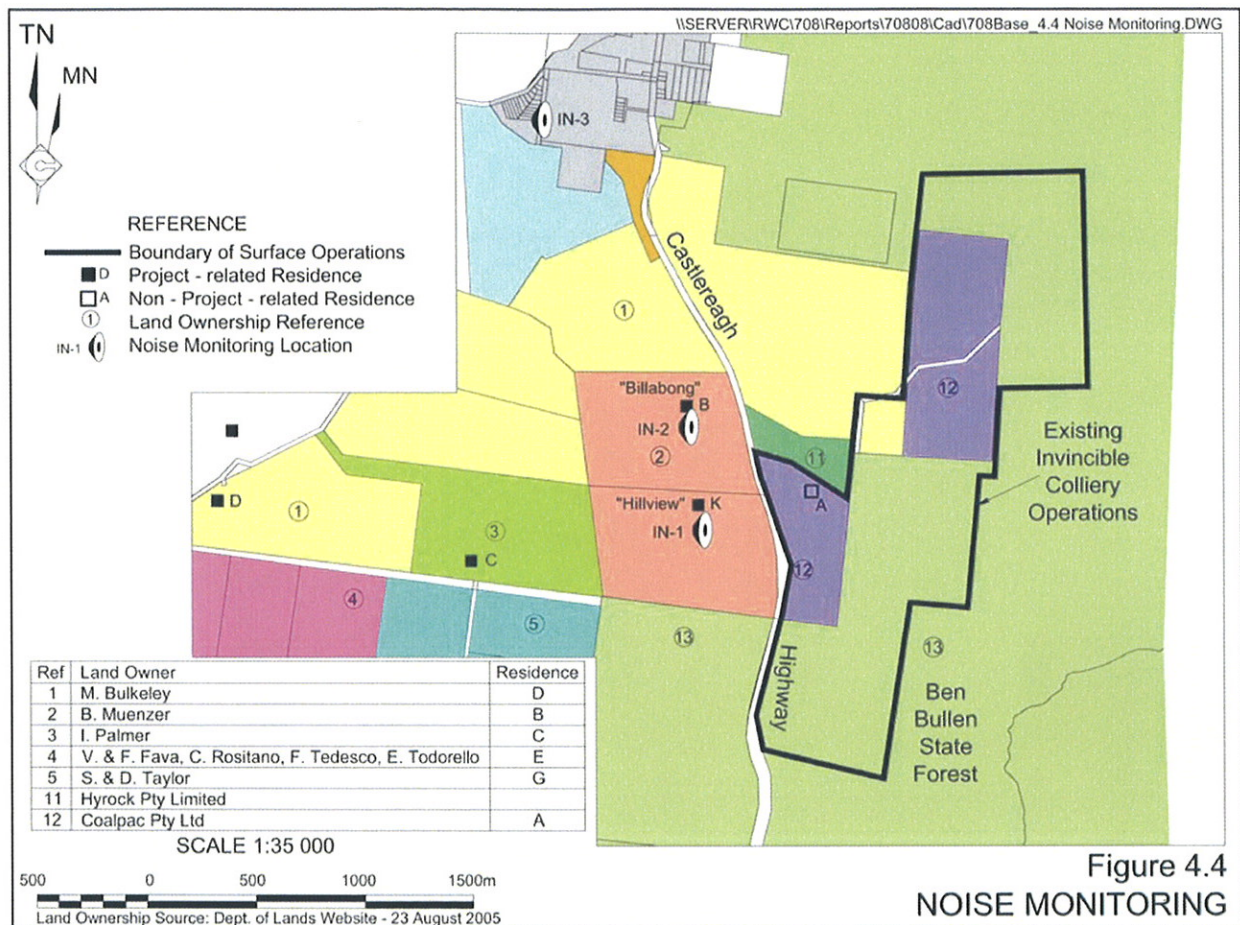


Figure 5: Residential Receivers for Noise Assessment

Project Specific Noise Levels established in accordance with DECC's Industrial Noise Policy (INP) for the open cut coal mine extension were retained as the relevant noise criteria for the proposed modified project (40 dB(A) for day time and 35 dB(A) for evening hours).

However, the selection of appropriate noise criteria is difficult as the dominant noise source at the Invincible site is the CPP, and in particular, its rotary breaker. The CPP was approved in 1976 and constructed under a development consent issued by Blaxland Council (now amalgamated into Lithgow Council). This consent allowed the production and processing of up to 2 million tonnes of coal a year sourced from underground operations, but did not specify any noise criteria for the CPP's operation.

Coalpac continues to rely on the 1976 consent for the operation of the CPP, although related matters such as disposal of coal rejects from coal sourced from open cut or auger mining operations have been assessed in its Environmental Assessment (EA) for the proposed modification.

The site's environmental protection licence (EPL) applies to the "Invincible Colliery Holding" and therefore applies to all activities on the site, including coal processing operations at the CPP. The INP recognises the difficulties often encountered regarding existing noise generating activities in

seeking to meet relevant INP criteria. In such circumstances, (as exist for the Invincible CPP) the licence holder is required to undertake "all reasonable and feasible noise mitigation measures". DECC acknowledges in the INP that these measures may not be sufficient to achieve compliance with the relevant INP noise criteria in all circumstances.

Coalpac proposes to undertake noise mitigation measures as part of a Pollution Reduction Program (PRP) which would be attached to its EPL and therefore overseen by DECC. These measures would be implemented within six months and include:

- constructing a solid acoustic enclosure for the rotary breaker;
- cladding the CPP building;
- fitting quieter reversing beepers on mobile equipment; and
- shutting down the jig washer and one front end loader at 6 pm each day.

Coalpac's noise assessment demonstrated that:

- proposed noise mitigation measures would reduce modelled noise impacts by up to 8 dB(A), although for most residences the reduction would be between 2 and 5 dB(A);
- noise impacts under calm conditions would meet relevant INP criteria for all residential receivers except "Hillview" and "Billabong";
- even after the implementation of noise mitigation measures, relevant noise impact criteria would be significantly exceeded at "Hillview" and "Billabong"; and
- even after the implementation of proposed noise mitigation measures, noise impacts under adverse meteorological conditions (as defined in the INP) would, at certain times of the year, exceed the relevant INP criteria at most residences within the village of Cullen Bullen.

The Department's view is that Coalpac has identified reasonable and feasible noise mitigation measures which would, within six months, lead to an improved noise climate for residents in the vicinity of the mine. The open cut mine is not permitted to operate during night time hours, nor on Sundays. Accordingly, the mine would not operate when most residents would be seeking to sleep or enjoy quiet recreation.

In November 2007, the company obtained agreements from the owner of the most affected properties ("Hillview" and "Billabong"), which acknowledge and accept the predicted noise impacts at these properties.

The Department has recommended conditions of consent that:

- maintain the existing noise criteria for open cut mining operations (i.e. including auger mining but excluding the CPP) for all residential receivers;
- require Coalpac to implement its proposed noise mitigation measures to reduce noise levels at residences by up to 8 dB(A);
- require Coalpac to purchase the "Billabong" and "Hillview" properties (at the landowner's request) should the private agreements accepting the predicted level of noise impact cease to have effect; and
- require Coalpac to provide noise mitigation measures, such as double glazing or air conditioning, at the request of the landowner for any residence where the mine's contribution (including that of the CPP) to evening noise levels is equal to, or greater than, 38dB(A)  $L_{eq}(15 \text{ minute})$ .

Overall, the Department believes that the noise mitigation measures proposed by Coalpac are reasonable and feasible. Additionally, that the rapid implementation of the noise mitigation measures proposed by Coalpac, and access to noise mitigation treatments for residences where evening noise impacts from the mine are equal to, or greater than 38 dB(A), would achieve a significantly improved acoustical amenity for all residences.

#### Road Transport Noise

Coalpac's assessment of road traffic noise impacts demonstrated that DECC's road traffic noise criteria would be met for all residences at distances of 100 metres, or greater, from the proposed coal haulage route along the Castlereagh Highway.

There are no residences adjacent to the Castlereagh Highway between the mine and Mount Piper power station, which is the sole proposed destination for the increased coal production from the mine. Accordingly, the proposed modification would have no effect on traffic noise received by residents.

However, there are several residences within 100 metres of the coal haulage route to Wallerawang power station. Coalpac states that it would prefer to supply coal to Mount Piper rather than Wallerawang power station and that it has not supplied any coal to Wallerawang power station since it recommenced mining operations. However, it may be directed by Delta Electricity to provide an "emergency supply" of coal to Wallerawang power station, should regular coal supplies to that station become temporarily unavailable.

Coalpac is proposing to limit its supply of coal to Wallerawang power station to a maximum of two weeks at any time, and only after residents adjacent to the haulage route have been notified of the details of the proposed coal haulage campaign.

The Department believes the proposed conditions of "emergency supply" to Wallerawang power station are reasonable, but would benefit from further definition to prevent successive "emergency supplies" within a short time frame. The Department has therefore recommended conditions of approval that would require Coalpac to limit the occurrence of "emergency supply" to no more than two weeks in any three month period. Prior to each haulage campaign, Coalpac would be required to notify all residents within 200 metres of the haulage route of its intention to haul coal to Wallerawang power station.

#### Transport and Access

The proposed modification would increase the number of daily truck movements from 80 to 120 and increase the proportion of heavy vehicle traffic on the Castlereagh Highway by about 13%. Coalpac proposes to limit its despatch of laden coal trucks to a maximum of one coal truck every 6 minutes (i.e. at most, 10 laden trucks an hour). The increase in coal transport on the Castlereagh Highway would be achieved by increasing the hours of coal transport, not increasing the number of trucks on the Highway at any given time.

The increased heavy vehicle traffic would be confined to a 4 kilometre section of the Highway (except during "emergency supply" to Wallerawang power station). The mine site entrance from the Highway is constructed to appropriate RTA design standards and the Castlereagh Highway is also constructed to a high standard. This section of road has safely transported up to 2 million tonnes of coal a year from Invincible's previous underground mining operations. Accordingly, the Department believes the additional coal produced could be safely transported to the Mount Piper power station without compromising road safety or the level of service for other road users.

#### Socio-economic Issues

The proposed modification would allow an additional 350,000 tonnes of coal (with an estimated value of about \$15 million) to be recovered from the mine that would be otherwise sterilised if auger mining techniques were not available. Importantly, the project would result in social and economic benefits for the region by creating direct employment for 5 additional people, with flow on indirect employment and economic benefits.

The recommended conditions of approval require Coalpac to provide a community enhancement contribution of almost \$20,000 to Lithgow Council for community facilities in the Cullen Bullen area. When combined with Coalpac's contribution under the existing approval, the company would have contributed about \$60,000 in community enhancement funds. In this way, it is proposed that the mine would assist in the provision of facilities to benefit all 300 members of the Cullen Bullen local community.

The project would also provide a reliable source of coal to the power industry, which would in turn, facilitate the continuation of a reliable, low cost electricity supply for NSW consumers.

### Other Issues

Other environmental aspects associated with the project have been considered and are summarised in Table 1 below.

| Issue                              | Department's Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Impact   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Disposal of coal processing wastes | Coalpac has demonstrated that tailings storages on site are of sufficient capacity to contain all the tailings that are likely to be generated by processing the proposed coal production from the open cut and auger mining operations. Coarse rejects would be placed against the highwall in the open cut. The Department is satisfied that the Invincible site has sufficient capacity to contain all coal wastes generated by the CPP in a manner that is unlikely to impact water quality or require additional ground disturbance.                                                                                             | Low      |
| Rehabilitation                     | The rehabilitation plan, methods proposed for rehabilitating the site, final landform and land use would not change as a result of the proposed modification. However, Coalpac proposes to disturb portion of the western rehabilitated area of the former open cut (shown in green in Figure 2) to gain access to the Irondale seam. The Department, whilst acknowledging the setback to revegetation that the modification would cause, believes the rehabilitated area does not represent current best practice and that an improved rehabilitation outcome would be achieved following the completion of auger mining operations. | Low      |
| Greenhouse Gases                   | Coalpac provided detail on projected Greenhouse Gas (GHG) emissions for the entire 500,000 tonne production rate, not just the increase as a consequence of the proposed modification. The mine would generate 1.47 million tonnes of CO <sub>2</sub> equivalent emissions, which represents less than 0.003% of Australia's 1990 GHG emissions.                                                                                                                                                                                                                                                                                      | Low      |
| Water Management                   | The proposed modification would not require any additional water management infrastructure and is predicted to meet the water quality requirements contained in the EPL for the site. The Department is satisfied that water quality at the site will not be materially altered by the proposed modification.                                                                                                                                                                                                                                                                                                                         | Very Low |
| Air Quality                        | Air quality criteria that apply to the site would continue to apply and are predicted to be met. The Department has reviewed air monitoring data since the mine recommenced operations and is satisfied that impact to air quality would be very low.                                                                                                                                                                                                                                                                                                                                                                                 | Very Low |
| Subsidence                         | The proposed configuration of auger mining operations should result in no subsidence of the overlying ground surface and hence no impact. In the event of coal seam pillar collapse between auger holes, the predicted subsidence is less than 5mm, a level which would be indistinguishable from normal soil movement.                                                                                                                                                                                                                                                                                                               | Nil      |
| Hours of operation                 | The hours of operation for the project would be unchanged at 7 am to 10pm, Monday to Saturday.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nil      |
| Area of disturbance                | There would be no change to the area of approved disturbance at the site. Consequently, the modification would not have any additional impact on flora and fauna (other than the already rehabilitated western area), nor would there be any need to alter erosion and sediment control measures employed on the site.                                                                                                                                                                                                                                                                                                                | Nil      |

*Table 1: Environmental Impacts of the Project*

The Department is satisfied that the impacts associated with the proposed modification would not increase impacts compared to current operations at the mine site. In fact, Coalpac has proposed noise mitigation measures that, when implemented, would significantly reduce the level of noise impact for all residences. The Department has also proposed conditions of approval to provide for acoustic mitigation measures for any residence where overall site-related noise impacts are equal to, or greater than, 38 dB(A).

Overall, the impacts of the proposal are minor, and could be mitigated and/or managed to ensure an acceptable level of environmental performance. Existing conditions of approval (for example regarding the Rehabilitation and Landscape Management Plan, Noise Monitoring Program and Site Water Management Plan) are considered to be sufficient to ensure an appropriate level of environmental performance in relation to the management of auger mining operations and the increased production from the mine.

The Department has assessed the proposal against the objects of the EP&A Act and the matters listed under section 79C of the Act, and is satisfied that:

- the development as modified would remain consistent with the objectives and requirements of relevant planning instruments;
- the proposed introduction of auger mining techniques at the Invincible mine would not materially alter the environmental impacts of the approved Invincible open cut mine extension development;
- the proposed increase in coal production from 350,000 to 500,000 tonnes a year would not adversely affect public road users or residents in proximity to the Castlereagh Highway; and
- the proposed modification is in the public interest as it would facilitate the operation of the Invincible coal mine which provides important local employment opportunities and economic benefits to the State.

In summary, the Department believes the benefits of the proposal outweigh its impacts, which are well defined and can be managed to ensure that the environmental qualities and residential amenity of the locality are not diminished. Consequently, the Department believes the proposal is in the public interest and should be approved, subject to conditions.

### **RECOMMENDED CONDITIONS**

The Department has recommended conditions for the proposal. Coalpac does not object to the imposition of these conditions.

### **RECOMMENDATION**

It is RECOMMENDED that the Minister:

- consider this submission;
- approve the proposal under section 75W of the EP&A Act; and
- sign the attached notice of modification (tagged A).

*DKitto* 5/12/07

David Kitto  
**Director**  
**Major Development Assessment**

*Howard Reed*

Howard Reed 4.12.07  
**A/Manager**  
**Mining and Extractive Industries**

*Chris Wilson* 6.12.07

Chris Wilson  
**Executive Director**  
**Major Project Assessment**  
as Delegate for the Minister for Planning