PROPOSED WESTSIDE COAL MINE SOUTHERN EXTENSION

REPORT ON THE ASSESSMENT OF A DEVELOPMENT APPLICATION
(DA 125-5-2002) PURSUANT TO SECTION 79C OF THE
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

FILE: N00/00291

1. INTRODUCTION AND BACKGROUND

1.1 The Applicant

Oceanic Coal Australia Limited (OCAL).

1.2 Overview of the proposal and its location

OCAL is seeking development consent for an extension ("the Proposal") to an existing open cut coal mine located between Wakefield, Killingworth and Barnsley approximately 25 km south west of Newcastle in Lake Macquarie Local Government Area within Mining Lease Application (MLA) No. 193 held by OCAL (A.C.N. 003 856 782), Kokan Kogyo (Australia) Pty Limited (A.C.N. 007 294 117), Marubeni Coal Pty Limited (A.C.N. 009 932 236) and OCAL Macquarie Pty Limited (A.C.N. 054 532 884). OCAL was acquired in July 1999 by Glencore Coal Australia Pty Limited (now Enex Coal Pty Limited). The location of the MLA area and the Development Application (DA) area are provided in Figure 1.

The Proposal includes the construction, operation, and rehabilitation of a southern and south eastern extension to the existing Westside Coal Mine, ancillary infrastructure, relocation of: 11kV transmission lines and associated easements, Telstra cables, a section of Wakefield Road and the Great North Walk; and associated adjustments to Rhondda Road. The proposed areal extent of the Development, including the relocation of a section of Wakefield Road, is approximately 41 hectares.

In situ open cut coal resources are estimated to be 4.89Mt with an estimated 4.59Mt recoverable. A further 0.58Mt coal resource would be mined by highwall augering methods. Coal would be crushed on site and then transported either to Eraring Power Station, Vales Point Power Station or Macquarie Coal Preparation Plant (MCPP) prior to export overseas. A proposal to sell select overburden to an offsite tile manufacturing plant would entail storage of this material on site. The proposal also includes the importation of reject from the MCPP.

The mine extension is anticipated to produce steaming coal from the Great Northern and Fassifern Seams with a maximum run of mine (ROM) of 8,000 tonnes per day (tpd) and an average ROM of 5,000tpd. The maximum proposed rate in any year is 1 million tonnes (Mt). Mining would be limited to 12 years maximum.

Most coal would be transported to Eraring Power Station at an average rate of 800,000tpa with a peak rate of 1Mt. At peak, this would require 220 truck movements per day. Spot contracts to Vales Point Power Station are anticipated to peak at 220 truck movements per day for short periods. An average of 20,000tpa and maximum of 50,000tpa are proposed. The remaining coal would be transported to MCPP or Newstan Colliery via private haul roads at an average rate of 20,000tpa and maximum of 50,000tpa. This would require a maximum of 6,000 tpd or 440 truck movements per day. If coal were transported to more than one of the above destinations on any given day, the total truck movements would be reduced on a prorata basis.

Overburden material is anticipated to be transported to tile manufacturers at an initial rate of 20,000tpa and a maximum rate of 50,000tpa and this would be removed in the later years of production. Transport of overburden material will require 6 truck movements per hour. Reject material from MCPP would be received at an average rate of 50,000tpa and a peak of 900,000tpa on a private haul road from MCPP.

Water would be used for dust suppression or transferred to settling dams and Rhondda Colliery. The Proposal also includes progressive rehabilitation of the open cut site.

The Proposal would continue the employment of 18 OCAL employees and 12 contract truck drivers with the potential for up to 5 further jobs at full production. The anticipated value of the proposal is expected to be approximately $140M.

1.3 State Significant, Integrated, and Designated Development

The Proposal is considered to be "State Significant Development" under a Declaration made on 29 June 2001 under Section 76A(7) of the *Environmental Planning and Assessment (EP&A) Act 1979*. Consequently, the Minister for Planning is the determining authority.

Under Schedule 3 of the *Environmental Planning and Assessment (EP&A) Regulation 2000*, the proposal is Designated Development since it would produce over 500 tonnes of coal per day and involve blasting within 500 metres of a dwelling not associated with the mine. Consequently, an Environmental Impact Statement (EIS) accompanied the DA in accordance with Section 78A(8)(a) of the *EP&A Act*.

As the proposal requires approvals from other statutory authorities, it is also an integrated development (Clause 91*, EP&A Act*). These authorities (referred to as "integrated approval bodies" under Clause 90A of the *Act*) require the Applicant to obtain:

- a variation to an existing licence from the Environment Protection Authority (EPA) under Section 47 of the *Protection of the Environment Operations Act* 1997;
- an approval under Section 138 of the *Roads Act* 1993 from the Department of Land and Water Conservation (DLWC) for works that affect a Crown Road;
- an approval under Section 138 of the *Roads Act* 1993 from Lake Macquarie City Council (LMCC) for works that affect a road under Councils' jurisdiction;
- a permit under Part 3A of the *Rivers and Foreshores Improvement Act* 1948 from DLWC; and
- an approval from the Mine Subsidence Board (MSB) for improvements within a Mine Subsidence District under Section 15 of the *Mine Subsidence Compensation Act* 1961.

1.4 Lodgement of DA and exhibition

On 7 May 2002, OCAL lodged a DA and EIS with the Department of Planning. The DA and EIS were publicly exhibited from Thursday 16 May 2002 to Tuesday 18 June 2002, in accordance with the *EP&A Act* . The DA and EIS were exhibited at the following locations:

- The Department of Planning Information Centre, Sydney;
- PlanningNSW Hunter and Central Coast Office, Newcastle;
- Nature Conservation Council, Sydney; and
- Lake Macquarie City Council.

Public notification included the placement of an advertisement in the Newcastle Herald on 15 and 16 May 2002 and the placement of four site notices at various locations on and around the DA area. Letters were sent to 81 landowners in the vicinity of the proposal.

Sixteen submissions were received in response to the EIS exhibition. A summary of these submissions is given in Appendix 1.

The Department is satisfied that the requirements for public exhibition of the DA and EIS and public participation have been fully met.

1.5 Local Council position

Lake Macquarie City Council (LMCC) identified a number of issues as part of the report attached to Council's General Terms of Approval (GTAs). These related to flora and fauna, the potential impacts of dust on tank water in Wakefield, noise and vibration, road construction and rehabilitation and decommissioning.

1.6 Government agencies' position

Six submissions were received from government agencies as follows:

- Department of Mineral Resources (DMR);
- NSW Agriculture;
- National Parks and Wildlife Service (NPWS);
- NSW Fisheries;
- NSW Heritage Office; and
- Roads and Traffic Authority (RTA).

The agencies raised a number of issues in relation to the Proposal and these are discussed in detail in Sections 4 and 5 of this Report.

The Department is satisfied that these issues have been either clarified or resolved by the Applicant or addressed by the Conditions of Consent.

1.7 Adjacent mine position

In its submission, Coal and Allied Operations Pty Limited (CNA) identified that coal strata within CCL No. 774 held by Mount Thorley Operations covered part of the area proposed to be mined by Westside Mine. The submission also raised the possibility of transfer of overburden to the adjacent Rhondda Colliery site for rehabilitation purposes.

On 18 November 2002, the Applicant informed the Department that a formal agreement with CNA was being finalised. As part of this agreement, OCAL would pay CNA for saleable tonnes that are recovered from that area.

The Department is satisfied that this issue is being resolved by the Applicant in consultation with DMR.

1.8 Local community position

Nine letters were received from private individuals in the Wakefield area. The main issues raised concerned land acquisition; noise and vibration; air quality; travel times; safety; traffic; potential impact on properties; visual and amenity impacts; water quality; fauna; consultation process; and socio-economic impacts.

No proforma letters and no community petitions were received regarding the Proposal.

The Department is satisfied that these issues have been either clarified or resolved by the Applicant or have been addressed by the Conditions of Consent.

1.9 Request for Commission of Inquiry

No submissions received requested a Commission of Inquiry (COI).

2. THE PROPOSAL

2.1 Site details

The Proposal would include land presently zoned Rural 1a and 1b, Special Industry 4b and Environmental Protection (Scenic) 7a under the Lake Macquarie Local Environmental Plan 1984. Surrounding land includes natural resource reservations to the east, environmental protection zones (across part of the mine site, and to the south east, south and south west) and core industrial lands to the south east. The nearest residence lies approximately 200 metres from the proposed open cut boundary.

The Proposal would include the relocation of: 11kV transmission lines and associated easements; Telstra cables; a section of Wakefield Road; and the Great North Walk, and associated adjustments to Rhondda Road.

The site of the Proposal is bounded on the south western corner by a ridge line which broadens to the north east. Undulating hills constitute the general topography of the mine extension. The closest properties in Wakefield are located down slope from the mine proposal. Properties situated further from the mine are located across a small valley and those on the western side of the village would have views down to the proposed extension.

Cockle Creek crosses the existing mine area from west to east. Diega Creek skirts the eastern boundary of the Proposal.

2.2 Land Ownership and Landuse

The DA area consists mainly of land owned by Macquarie Coal Joint Venture. Corridors of Crown Land lie across the DA area. Two parcels of land owned by the Donaldson Estate are incorporated, in part, in the DA area. In the immediate vicinity of the DA, land is owned by BHP to the west, R.W. Miller Co Pty Ltd to the south east and by the Donaldson Estate and J.P. Farrell. Wakefield is dispersed as rural allotments and land in the remaining area adjacent to the extension may be considered as part of the Wakefield community (Figure 2).

The villages of Killingworth and Barnsley are located 200 metres to the west and 600 metres to the north-east of the existing mine lease boundary respectively. The Great North Walk lies adjacent to the current alignment of Wakefield Road.

2.3 Production process

Topsoil would be stripped and if possible, reused almost immediately. Select overburden would be stockpiled and transported off-site for tile manufacture in a separate project.

Where possible, the upper layer of overburden would be dug by an hydraulic excavator. The remaining overburden would be drilled and blasted to enable it to be loaded by the excavator and hauled by rear-dump trucks to the opposite side of the pit where it would be used to backfill the previously mined void. Where overburden above old underground workings is less than 10 metres thick, the area would be drilled and blasted to collapse overburden rock into the goaf and/or roadways. An excavator would then remove remaining rock from between the remaining pillars. It is anticipated that blasting would occur within 500 metres of a dwelling not associated with the mine extension (EIS, p1.3).

Interburden between the two seams would be removed by dozers across the previously mined strip. A dozer would then remove the exposed coal seam and placed stockpiles on the pit floor. A front end loader would be used to load 60 tonne off-highway trucks, which would transport coal to the crushing plant located beside the haul road at the eastern end of the northern pit. Most ROM coal would be fed into the primary crusher system. A smaller proportion would be temporarily stockpiled adjacent to the

hopper. After crushing, 27 tonne trucks would be loaded directly from the crusher. There is no reject from the crushing plant. This crushing would produce a product less than 50mm.

To accommodate extraction from the eastern part of the extension, Wakefield Road would be realigned to the east at some time during the first three or four years of the extension. The Great North Walk, 11kV electricity supply and telephone cables located in the vicinity of the present Wakefield Road alignment would also be relocated in the vicinity of the changed alignment.

Water travelling downslope into the open cut from underground mine areas would be collected by in-pit sumps. This water would be pumped to on-site Dam E (Figure 3). During periods of high rainfall, excess water would be pumped through overland pipeline to the Rhondda mine area. Existing facilities would be used to transfer 1Kl/day of water to Rhondda Colliery during and following periods of extreme rainfall events.

2.4 Project Development

The main components of the mine site as proposed are:

- in cut stockpiles of overburden and interburden;
- stockpiles for the crusher;
- new haul road;
- use of existing office and equipment maintenance and storage areas;
- storage dams; and
- fuel and explosives storage facilities.

The proposed extension is intended to be mined over 7 to 12 years. Year 1 would involve site preparation, overburden removal and extension from the South Pit to remove coal. Mining would progress in a south-easterly direction over three to four years before reaching the proposed open cut boundary. Shaping and rehabilitation of overburden would continue in this period and after completion of highwall augering from the base of the conceptual Year 4 and 5 highwalls.

Mining would then commence in the new East Pit and progress in a north-easterly direction. Excavations in the South and East Pits would progress through the old underground workings. As mining proceeds, the mined areas would be progressively rehabilitated.

2.5 Annual production, hours of operation and employment

Approximately 4.59Mt of coal would be extracted from the Great Northern and Fassifern Seams by open cut methods. A further estimated 0.58Mt would be recovered by highwall augering techniques.

ROM production would be approximately 1Mtpa at average and peak haulage rates of approximately 5,000 tpd and 8,000 tpd respectively.

Mining and coal crushing is proposed to occur between 7am and 10pm Monday to Saturday with no mining or coal crushing on Sundays. Generally it is proposed that most mining operations would cease by 7pm unless contracts require a greater average daily production.

At present the mine employs 18 full-time mine workers. An additional five full time employees may be employed for the extension.

2.6 Transport Route

Existing access to the site from Wakefield Road would be maintained. Coal would generally be transported to Eraring Power Station via OCAL's private haul road. One hundred and eight-five and 296 laden truck movements per day would be required for average and peak haulage rates of 5,000 and

8,000 tpd respectively. This would amount to an average of 800,000 tpa with a maximum haulage along this route of 1Mtpa

Coal would also be transported to Vales Point Power Station along the private haul road to Awaba Road, the F3 Freeway, Wyee Road and Rutley's Road. An estimated maximum and average of 50,000tpa and 20,000tpa respectively would be transported on a campaign basis. At peak transport periods, 3,000 tpd (110 laden trucks/day or 220 truck movements per day) would be transported (EIS, p5.48). Trucks return along Rutleys Road and Wyee Road, enter the F3 Freeway at Morisset, travel north along the F3 Freeway, leave the Freeway at George Booth Drive before heading to Northville Drive and Wakefield Road (Figure 4). Trucks would be limited to eight per hour on Northville Drive and Wakefield Road.

Occasionally export coal haulage is anticipated to Macquarie Coal Preparation Plant (MCPP) or Newstan Colliery via private haul roads. Peak haulage along these routes is anticipated to be 6,000tpd (220 laden trucks per day or 440 truck movements per day). The average and maximum levels would be 20,000tpa and 50,000tpa respectively.

Projected haulage of reject from MCPP would occur in the final stage of the mining and rehabilitation of the project. Haulage from MCPP along the OCAL private haul road to West Wallsend Colliery and directly to Westside Mine by private haul road would occur at a peak rate of 100 laden trucks/day (200 truck movements/day). The average and maximum rates would be 50,000 and 900,000tpa respectively. Where this occurs concurrently with any product coal haulage to Vales Point Power Station a maximum of 30 laden trucks per day would apply.

2.7 Justification

Residential development on the western side of Lake Macquarie may have a potential impact on the future development of coal mines in the locality. The potential constraints associated with many other Hunter Valley coal resources indicate the importance of developing this particular resource and the continuation of power station fuel in the area.

Over the life of the project, total income is anticipated at $140 million with substantial flow on effects.

3. STATUTORY PLANNING MATTERS

3.1 *Environmental Planning and Assessment Act* 1979

The Proposal has been assessed against various State, regional and local statutory planning instruments and the details are provided below.

State Significant Development

Under a Declaration (29 June 2001) provided for in Clause 76A(7)(b)(iii) of the *Environmental Planning and Assessment (EP&A) Act* 1979, the proposal is "State Significant Development" as the proposal is considered to be a new mine since it requires a new mining lease. Under Clause 76A(3)(b) of the *EP&A Act*, consent is required for State Significant Development. The Minister for Planning is the consent authority for such developments under Clause 76A(9).

Integrated Development

As the proposal requires approvals from other statutory authorities, it is also an integrated development (Clause 91*, EP&A Act*). These authorities (referred to as "integrated approval bodies" under Clause 90A of the *Act*) require the Applicant to obtain:

- a variation to an existing licence from the EPA under the *Protection of the Environment Operations Act,* 1997;
- an approval under Section 138 of the *Roads Act* 1993 from the DLWC for works that affect a Crown Road;
- an approval under Section 138 of the *Roads Act* 1993 from LMCC;
- a permit under Part 3A of the *Rivers and Foreshores Improvement Act* 1948 from DLWC; and
- an approval under Section 15 of the *Mine Subsidence Compensation Act* 1961 from MSB.

Designated Development

The Westside Mine Extension is identified as a designated development in Schedule 3 of the EP&A Regulation. As such, the preparation of an EIS is required in accordance with Section 78A(8)(a) of the *EP&A Act*.

The Department is satisfied that procedures relating to the preparation of the EIS have been followed.

3.2 State Environmental Planning Policies (SEPP)

SEPP No. 11 (Traffic Generating Developments)

SEPP No 11 applies to this Proposal. As part of the assessment process, the Applicant consulted the RTA and a proposal for a Traffic Management Plan for the road construction period was included in the EIS.

The Department is satisfied that the provisions of SEPP No. 11 have been followed and that the Proposal would meet the requirements of this SEPP.

SEPP No. 33 (Hazardous and Offensive Development)

In considering whether SEPP 33 applies to this application, the Department has reviewed the proposed development and concluded that it does not constitute a "potentially hazardous development" as it does not pose a significant off-site risk impact (unmitigated scenario). Consequently, the proposal does not trigger the risk impact provisions of the SEPP and a Preliminary Hazardous Analysis is not required.

SEPP No. 45 (Permissibility of Mining)

SEPP No. 45, now the *State Environmental Planning (Permissible Mining) Act* 1996 No.2 states that if mining is permissible on land with development consent in accordance with an environmental planning instrument and the provisions of that instrument are satisfied, then mining is permissible on that land without those provisions having been satisfied. Mining is permissible under the current zones 1a,1b and 4b which constitute the majority of the DA area, and therefore there is no need to invoke this Act for this proposal.

3.3 Regional Environmental Plans (REPs)

The Hunter Regional Environmental Plan (REP) 1989 is relevant to this Proposal and this REP was considered by the Applicant in the EIS. The Department requested further information regarding the minimising of adverse impacts on the environment and the populations likely to be affected. The Applicant's response has been considered and the Department is satisfied that the provisions of the REP would be met with appropriate Conditions.

3.4 Local Environmental Plans (LEPs)

The Proposal lies in Lake Macquarie local government area and is partly zoned Rural 1a, Rural 1b, Special Industry 4b and Environmental Protection (Scenic) 7a under the Lake Macquarie Local Environmental Plan 1984. The proposed mining activities are permissible with consent in zones 1a, 1b and 4b. LMCC is rezoning part of the Zone 7a area to address this issue in the proposed mining area.

The Department is satisfied that the proposal is permissible and consistent with the zone objectives.

3.5 Development Control Plans (DCPs)

Lake Macquarie City Council's Landscape Development Control Plan (DCP) No 31 is relevant to this Proposal. The Applicant is committed to preparing a Landscape Management Plan for the Proposal.

The Applicant's response has been considered and the Department is satisfied that the provisions of DCP No. 31 would be met through appropriate Conditions.

3.6 Environment Protection and Biodiversity Conservation (EPBC) Act 1999

This legislation was brought to the attention of the Applicant and the Applicant was advised to contact Environment Australia for any assessment requirements under this Act. The assessment process under the *EPBC Act* is administered separately by Environment Australia.

3.7 Threatened Species Conservation (TSC) Act 1995

The EIS identifies species listed under the *TSC Act* for which habitat is available in the DA area. A relatively high density of flora and fauna species were recorded on the proposed site including three threatened species and one endangered ecological community listed under this Act. These are: *Tetratheca juncea*, Squirrel Glider, Little Bent-wing Bat and Sydney Coastal Estuary Swamp Forest Complex.

In addition, the threatened Large Bent-wing Bat and the Masked Owl were tentatively recorded. The study area for the EIS supports suitable habitat for two threatened flora species and fifteen threatened fauna species and these species may be present on the site. The Department requested additional information from the Applicant regarding these species and adjustments were made to the proposal.

The Department is satisfied that, subject to the proposed Conditions being implemented the impacts on species for which habitat is present or for species identified as present, is manageable and not significant. The Department has therefore concluded that a Species Impact Statement is not required.

3.8 Relationship of the Proposal to the Mining Act

The Mining Lease Application proposed by the Applicant overlaps CCL No. 774 owned by CNA through Mount Thorley Mine. The Applicant has indicated that OCAL would provide payment to CNA for the extraction of coal from CCL No. 774 and that an agreement for this would be finalised in the near future. To ensure that extraction of coal from the area is undertaken with an agreement in place, this requirement is contained in the Conditions of Consent.

3.9 Conclusion

The Department is satisfied that the Proposal is consistent with the aims, objections and requirements of all relevant environmental planning instruments.

4. SUBMISSIONS RECEIVED

The EIS was exhibited from 16 May 2002 to 18 June 2002 in accordance with Clause 79 of the *EP&A Act*. The Department received a total of 16 submissions during the exhibition period. No pro-forma letters or petitions were received.

While the submissions are summarised below, a more detailed assessment is provided in Appendix 1.

Table 1. Submissions received

State Government	6
Local Government	-
Utility	-
Special Interest Groups	-
Business	1
Individual Private Submission	9
Community Pro-forma letter	-
Community Petition	-
Total	**16**

Of the submissions received, 5 residents objected to the proposal on the grounds of impacts on amenity, property values, road haulage, dust, noise and water quality.

A number of other agencies raised issues which have been addressed through additional information or Conditions of Consent. NSW Fisheries raised no objections.

4.1 Government Agency Submissions

Of the submissions received from government agencies none objected to the proposal.

Submissions were received from:
- DMR;
- NSW Agriculture;
- NSW Heritage Office;
- NSW Fisheries;
- RTA; and
- NSW NPWS.

These submissions are discussed in detail below.

Department of Mineral Resources

The DMR identified a requirement for the addition of the mineral "structural clay" to the proposed mining lease to facilitate the removal of "selected overburden" for the use of this material in the manufacture of tiles. The DMR also identified the need for mining and rehabilitation to be addressed throughout the life of the proposal through the DMR's Mining and Operations Plan (MOP) and Annual Environmental Management Report (AEMR) processes. The Department forwarded this information to the Applicant for consideration.

In response, the Applicant provided a commitment to updating the MOP and AEMR to accommodate any changes to the proposed mine plan, changing environmental requirements or changes in technology/operational practices and provided an undertaking that OCAL will add the mineral "structural clay" to the proposed mining lease as required by DMR.

The Department is satisfied that these issues have been addressed.

NSW Agriculture
The submission from NSW Agriculture raised the following:

- potential air quality, blasting and noise impacts on resident on-site managers and livestock;
- potential impacts on travel times, accessibility and business costs;
- the safety of slow moving farm supply and transport vehicles on roads used by coal haulage vehicles; and
- monitoring and mitigation measures to protect rural amenity and agricultural land uses.

The Department is satisfied that these issues have been satisfactorily addressed through additional information provided by the Applicant and Conditions of Consent.

NSW Heritage Office
The Heritage Office requested additional information regarding:

- the history of the land identified in the proposal;
- identification of known heritage items;
- a prediction of the likelihood of subsurface archaeological heritage items; and
- management recommendations for non-indigenous heritage issues.

The Department forwarded this information to the Applicant for consideration.

The Department considers that it is unlikely that any items of European heritage would be found on the site. The Department is satisfied that these issues have been satisfactorily addressed through additional information provided by the Applicant and Conditions of Consent.

NSW Fisheries
The submission from NSW Fisheries raised no issues or objections to the proposal.

NSW Roads and Traffic Authority (RTA)
The submission from the RTA raised the following issues:

- limiting the haulage route to Vales Point Power Station or destinations south;
- design of the ramps at the junction of the private haul road and Main Road (MR) 220 (Awaba Road);
- separate approval requirements for road improvements associated with MR 220;
- length of the deceleration lane, position of signposting, etc;
- approval requirements for all detailed design, signposting and line marking plans from the RTA's Traffic Committee prior to construction; and
- a safety audit.

The Department forwarded this information to the Applicant for consideration. The Department is satisfied that these issues have been satisfactorily addressed through additional information provided by the Applicant and Conditions of Consent.

NSW National Parks and Wildlife Service (NPWS)
The submission from NPWS raised the following issues:

- additional information regarding the flora and fauna survey technique and extent of targeted surveys;
- the justification that the removal of *T. juncea* subpopulations would not constitute a significant impact;

- information on the targeting of *Diuris praecox* and *Melaleuca biconvexa* and the Grey-crowned Babbler, Hooded Robin, Black-chinned Honeyeater, Brown Treecreeper, Speckled Warbler, Diamond Firetail Sooty Owl, Yellow-bellied Glider, Regent Honeyeater and Swift Parrot;
- the effect of a new haulage road corridor on the Endangered Ecological Communities (EECs) on the site and management of the remaining EEC on site;
- offset habitat;
- biodiversity values in relation to the relocation of a section of Wakefield Road;
- information regarding incremental clearing;
- works which would potentially affect the hydrological regime;
- issues relating to the 8-part tests for species under consideration; and
- cumulative impacts.

The Department forwarded this information to the Applicant for consideration. The Applicant provided additional information which addressed protection of the EEC, the Sydney Coastal Estuary Swamp Forest Complex (SCESFC), the habitat of potential threatened species and *Tetratheca juncea*.

The Department commissioned Mr Robert Payne of Ecological Surveys and Management to conduct a peer review of the additional information provided by the Applicant regarding *Tetratheca juncea*.

On the basis of the information provided by the Applicant and the Department's consultant, the Department has concluded that the impacts on the threatened species identified during the survey effort could be managed and that, providing the Conditions of Consent are implemented, no significant impact on these species is anticipated.

4.2 Council Submissions

Lake Macquarie City Council (LMCC) identified a number of issues as part of the report attached to Council's General Terms of Approval (GTAs). These related to flora and fauna, the potential impacts of dust on tank water in Wakefield, noise and vibration, road construction and rehabilitation and decommissioning.

The Department is satisfied that these issues have been satisfactorily addressed through additional information provided by the Applicant and Conditions of Consent.

4.3 Business submissions

One submission was received from CNA. It was identified that MLA No. 193 overlaps CCL No. 774 held by Mount Thorley Operations. Also, a request was also made to source overburden from the Westside Mine for use at Rhondda Colliery during rehabilitation.

The Department is satisfied that these issues have been satisfactorily addressed through additional information provided by the Applicant and Conditions of Consent.

4.4 Private submissions

The nine private submissions identified the following issues:

- impact of dust on:
    - domestic water supply from rainwater tanks;
    - health;
    - Diega Creek; and
    - dams and swimming pools.
- property values;
- impact of noise and vibration during augering and blasting;
- noise impacts due to relocation of a section of Wakefield Road;

- road safety issues associated with increases in traffic and coal haulage;
- closure of School Road;
- amenity impacts including visual (overburden mounds, potential effect of subsidence on the ridgeline etc), loss of privacy and lack of a buffer zone ;
- effects on livestock;
- perceived change to proposal subsequent to public meeting; and
- tenant agreements for mine-owned properties which potentially limit complaints.

The Department is satisfied that these issues have been adequately addressed through additional information provided by the Applicant and Conditions of Consent.

5. CONSIDERATION BY THE DEPARTMENT OF PLANNING

Key Issues

The Department has identified the key issues for the Proposal as being:

- potential impact on threatened species and ecological communities;
- air quality;
- amenity; and
- noise and vibration.

Table 2. Number of times each issue was raised in submissions

Issue	Number of times the Issue was raised		Issue	Number of times the Issue was raised
Fauna and flora	20		Monitoring	2
Air quality	14		Water	2
Amenity (including buffer) & visual	10		Safety	2
			Process	1
Noise & vibration	9		Travel time	1
Economic & social impacts	7		Highwall	1
Consultation	4		Lease	1
Road design	4		Spoil	1
Traffic	3			

Flora and fauna issues were raised mainly by NPWS and concerned a range of issues listed in Section 4.1. Issues relating to air quality, amenity and noise and vibration were raised in submissions from government agencies and residents of Wakefield and account for the majority of other issues raised.

5.1 Potential impact on threatened species and ecological communities

5.1.1 Applicant's position

The Applicant engaged Ecotone Ecological Consultants Pty Ltd to undertake a Flora and Fauna Study for the proposal. The results of the survey are summarised in Section 5.6 of the EIS, while a detailed report is provided in Appendix 6 of the EIS.

Existing Environment
Flora and fauna surveys were conducted between October 1997 and November 2001. A range of fauna habitats were recorded which support a relatively high diversity of fauna species. Habitats include wetlands, watercourses, woodland and forest communities. The communities also support hollow-bearing trees and an intact understorey, particularly in the western section of the site.

A relatively high diversity of flora and fauna species were recorded including three threatened species and one endangered ecological community listed under the *TSC Act*. These include *Tetratheca juncea*, Squirrel Glider, Little Bent-wing Bat and Sydney Coastal Estuary Swamp Forest Complex (SCESFC). Also, the threatened Large Bent-wing Bat and Masked Owl were tentatively recorded. The study area also supports suitable habitat for two threatened flora species and fifteen threatened fauna species.

Potential Impacts
The proposal would involve the progressive clearing of dry sclerophyll forest, swamp forest and regenerating mined land. The area involved would include the section of Wakefield Road relocation and the internal coal haul road. The main impact was the loss of identified threatened plant species and

overall habitat loss and would involve the long term displacement of native vegetation and fauna. The 8 part test for threatened species concluded that there was not a significant impact on these threatened species

Potential Impacts in Aquatic Systems
The proposal would result in the removal of several small drainage lines, dams and soaks. One bridge crossing and one culvert crossing would be constructed over Cockle Creek and two culvert crossings would be constructed over Diega Creek.

Mitigation Measures proposed by the Applicant
The following mitigation measures are proposed in the EIS:

- a Fauna and Flora Management Plan would be prepared to document management responses and actions for mitigation. The plan would include:
    - identification and management of proposed reserved habitats;
    - provisions for the protection and management of hollow-bearing trees;
    - careful management of fauna during clearing;
    - feedback mechanisms; and
    - a monitoring strategy for threatened flora and fauna during and following mining activities to assess the success of the ameliorative measures.
- pre-clearance surveys would be carried out;
- sediment dams and diversion drains would control sediment runoff from entering the creek systems;
- identified sub-populations of *Tetratheca juncea* on OCAL property within the survey area and outside the disturbance area would be protected from the impacts of this proposal;
- fencing, adoption of water quality controls, sediment control structures, rehabilitation plantings, an appropriate fire management plan, measures to control feral animals and prohibition of firewood and timber collection would be implemented;
- koala food trees would be used within the rehabilitation areas where appropriate and would include Swamp Mahogany and Scribbly Gum in suitable topographic positions;
- two utility easements would be revegetated with swamp forest;
- periodic monitoring and weed control would be undertaken in the revegetated areas;
- significant habitat features such as hollow-bearing logs would be retained where possible and all hollows which can be salvaged from felled trees would be re-erected and secured in trees in retained portions of the subject area or re-erected in the re-generated habitat of old workings so that no net loss of hollows occurs;
- the alignment of the new internal haul road would aim to limit the number of habitat trees affected, where possible;
- suitable nest boxes for Squirrel Gliders and other arboreal fauna and bats would be erected in the habitats that would not be disturbed by mining and regeneration areas to compensate for the overall loss of hollows which may result from the proposal. Nest boxes would be erected prior to habitat removal from within the proposed extension area; and
- progressive vegetation rehabilitation would aim to reinstate habitat of similar diversity and type to that which exists in the naturally forested portions of the locality including species from all vegetative strata.

Aquatic habitats
The proposed crossings would be constructed in accordance with NSW Fisheries *Policy and Guidelines for Bridges, Roads, Causeways, Culverts and Similar Structures* (1999)

5.1.2 Community/Agency Position

The NSW NPWS raised a number of issues in its submission to the Department as follows:

- the need for a map showing the location of flora surveys and for consistency between maps of vegetation communities in the Flora and Fauna Report and the Main Volume of the EIS;
- relationship of the description of vegetation communities on site with the Lower Hunter Central Coast Regional Environmental Management Strategy (REMS) Vegetation Mapping which provides for consistency in vegetation mapping across seven Local Government Areas and quantified assessment of the conservation status of the communities;
- use of databases other than the NPWS Wildlife Atlas for comprehensive data on current threatened species records;
- information required for the vegetation communities present in the vicinity of Cockle Creek westward of the proposed new Creek crossing, and in the south western corner of the site, both of which were described as "natural vegetation";
- information required regarding survey effort and extent for targeted flora surveys;
- clarification as to whether targeted surveys were undertaken for threatened species such as *Angophora inopina* and *Acacia byoneana* and how extensive these surveys were;
- identification procedure for *A. floribunda*;
- potential presence of *Diuris praecox* which is known to occur within dry sclerophyll forest on the hills and slopes in near-coastal districts;
- potential presence of *Melaleuca biconvexa* and whether this species was targeted;
- three large sub-populations of *T. juncea* would be removed and another large sub-population would be partially removed. These populations are of high conservation significance and a priority for reservation;
- contradictory information is provided about the tenure/ownership of Sites 7 and 8 (Table 6a and page 51 text);
- the security of sub-populations on land under private or State Forest ownership is questionable;
- no information is provided as to how the reservation of Site 2, also a significant sub-population over 100 plant clumps, would be achieved, how secure it would be, and what future management measures are being considered to manage threats such as frequent fire and weed invasion;
- the recommendations in the Conservation Management Plan refer to reservation of 50% of the remaining large sub-populations in the north west quadrant either through Voluntary Conservation Agreements (VCA) or Joint Management Agreements. The Plan also states that further fragmentation of these remaining sub-populations should be avoided. As the management of adjoining populations is beyond the proponent's control, there is no guarantee that their effective conservation can be achieved;
- the EEC SCESFC is present on site as represented by Communities 4 and 5 of Ecotone's vegetation analysis. NPWS considers the EEC would also be present on low-lying areas adjoining Cockle Creek which are shown variously as Sydney peppermint/Stringybark Association (Figure 3 in the Flora and Fauna Report) and Scribbly Gum/Stringybark/Smooth-barked Apple Association (Figure 5.6 Main Volume of the EIS). The NPWS considers the impact of creating a new corridor of disturbance through what is currently undisturbed EEC has been vastly underestimated;
- there are a number of significant disturbances related to the proposed relocation of a section of Wakefield Road which would result in direct destruction of the EEC vegetation or alteration of the hydrological regime which have not been adequately taken into account as follows:
    - stripping of 6,300m^3 of topsoil and stockpiling of 5,300m^3 until the end of the mine's life at the northeastern end of East Pit adjacent to the existing junction of Rhondda/Wakefield Roads;
    - building up the realigned section of Wakefield Road above existing ground level above the 1 in 100 year flood level;
    - construction of six box culverts (3000 x 1800mm) and seven box culverts (3000 x 1800mm) to enable two road crossings of Diega Creek;
    - construction of four pipes (dimensions 2400mm, 2700mm, 3200mm, 3600mm) for the internal haul road crossing of Cockle Creek;
    - "limited clearing along the creek channel for approximately 30m upstream of proposed Culvert 3" (page 5.15);

  - "scour protection in the form of parallel 1m high grassed embankments either side of Diega Creek …for approximately 10-20m downstream of proposed Culvert 1" (page 5.15);
  - increased flood levels of approximately 1m upstream of Culvert 1 for a 1 in 50 year Average Recurrence Interval (ARI) flood for approximately 140m; and
  - increased flood levels of approximately 1.2m upstream of Culvert 1 for a 1 in 100 year ARI flood extending almost back to Rhondda Road.

- provision of 1.2ha for 8.9 ha of SCESFC does not constitute an offset. An appropriate outcome would be one which achieves a 'no net loss' of the EEC. NPWS considers a minimum offset ratio should be 2ha of habitat protected and actively managed for every 1ha destroyed as there is no guarantee that this will produce a functional community and must also take continuing threats into account;
- the threatened species assessment also refers to the need for effective management of the remaining EEC on the site to offset losses, but there is no discussion about how this would actually be achieved;
- there needs to be certainty about the likely success of rehabilitation and revegetation if such components are to be considered to mitigate impacts on the EEC;
- Other threatened fauna species which should have been considered are the recently listed woodland birds – the Grey-crowned Babbler, Hooded Robin, Black-chinned Honeyeater, Brown Treecreeper, Speckled Warbler, and Diamond Firetail;
- NPWS also considers the creek vegetation and open forest provide potential habitat for the Sooty Owl and the Yellow-bellied Glider for which there are records in the vicinity of the site. With regard to the Regent Honeyeater and Swift Parrot, although these species are only likely to use the site in winter when the Swamp Mahogany is flowering, both demonstrate high site fidelity and are likely to return year after year. It is therefore important that their use of the site is established through targeted survey work and historical records;
- NPWS is concerned that the 8 part tests do not substantially indicate that the proposal is not significant;
- the assessment needs to address the cumulative impacts of incremental clearing in a landscape under pressure for continued urban development and further mining;
- the progressive extent of disturbance and edge effects associated with mining and a new road alignment need to be addressed;
- whilst the NPWS supports the recommendation in Section 5.0 for preparation of a Flora and Fauna Management Plan, a greater level of certainty is needed as to whether impacts can be satisfactorily ameliorated and mitigated and evidence of the proponent's commitment in this regard, before consideration could be given to waiving the need for a Species Impact Statement;
- NPWS supports the general intent of proposed conditions which relate to flora and fauna issues including compensation for the loss of native vegetation as well as the loss of threatened flora specifically;
- licencing requirements in relation to handling and monitoring threatened species under the provisions of the *National Parks and Wildlife (NPW) Act* 1974and the *TSC Act* as relevant would be required;
- where it is not possible to protect threatened flora with a VCA under the *NPW Act* 1974, a Property Management Agreement under the *Native Vegetation Conservation Act* 1997 or like mechanism needs to be considered;
- details about a buffer for the SCESFC and *Tetratheca juncea* protection areas need to be addressed;
- consultation with NPWS is not required for an appropriate conservation mechanism, preparation of an Environmental Strategy, preparation of a Management Plan for indigenous native vegetation, identification of an appropriate offset and preparation for a Flora and Fauna management Plan;
- NPWS wishes to receive a copy of the completed strategy, the Annual Environmental Management Report (AEMR), the Management Plan for Indigenous Vegetation, and the Flora and Fauna Management Plan;

- NPWS would prefer that a qualified bushland regeneration officer be provided with reference to the Australian Association of Bushland Regenerators rather than to NPWS; and
- a reference to vegetation data is the Lower Hunter Central Coast Regional Environmental Management Strategy (REMS).

The Applicant was requested to provide additional information in response to these issues. The additional information provided by the Applicant is discussed below.

5.1.3 Further Information received

Further information was provided by the Applicant regarding the long term protection of *Tetratheca juncea* subpopulations 2, 5 and 8 which are situated on land owned by Macquarie Coal Joint Venture. In correspondence dated 12 August, 2002 the Applicant undertook to remove the additional crossing of Cockle Creek to reduce the impact on the Swamp Mahogany community.

A response to the issues raised in the NPWS submission was provided by the Applicant on 12 August 2002. This response noted that:

- potential habitat for the Turquoise Parrot occurred in the study area, although no individuals were observed during the survey effort;
- the change in the proposed internal haul road would reduce the impact on the SCESFC from 0.9 to 0.7 hectares and would preserve significant vegetation adjacent to Cockle Creek. The total area of SCESFC lost would now be 8.7 hectares;
- the gaps in the vegetation community mapping had been filled in;
- information about survey effort, data bases and map references were provided;
- for *T. juncea* at Site 2, it was proposed that the site would be isolated from unauthorised human access;
- culverts would provide fauna crossings at the creeks and cover would be provided immediately following construction by the careful positioning of some logs and branches. In addition, the new Cockle Creek bridge would be constructed in a manner that does not restrict fauna passage any more than the existing bridge;
- at least one area of sufficiently tall trees close to the road would be retained on either side of the new road to enable glider crossing;
- vegetation would be re-established on part of the currently operating Rhondda Road, as well as over the proposed mining areas;
- habitat for the Sooty Owl and Yellow-bellied Glider was not available; and
- it was concluded that there was little likelihood that habitat of significance for the Swift Parrot and the Regent Honeyeater would be significantly impacted.

Further advice was received by the Applicant on 19 August 2002 regarding the impact of Culverts 1 and 3:

- weed and potential impact of introduced species would need to be addressed through the flora and fauna management plan. The Plan would address native grasses and groundcover species for the embankment area of Culvert 1 and other disturbance areas within the Endangered Ecological Community; and
- the minimum possible vegetation will be cleared by hand in the area of Culvert 3 and up to 30 metres upstream of Culvert 3. The vegetation clearance will mainly be restricted to thick undergrowth such as dense low shrubs and reeds and will not involve removal of large trees.

On 12 September 2002, the Applicant proposed the protection of 18 hectares of SCESFC on OCAL land north of Rhondda Road. This area was proposed to offset impacts associated with disturbance of the 8.7 hectares of SCESFC. A section 5A assessment (8 part test) provided by Ecotone Ecological Consultants concluded that, although the Turquoise Parrot would be impacted by the proposal, the development was considered to be unlikely to remove or modify a significant area of known habitat for this species in the region.

A further survey effort for *Tetratheca juncea* was conducted, initially for Site 7 (on 12 September 2002) and subsequently for Sites 1, 2, 2a, 3, 4, 5, 7, 8 and 9 (on 9 October 2002) to provide a direct comparison with Site 7. Site 6 was visited on 18 October 2002. Sites 6 and 10 are on land not owned by OCAL.

Subsequently, OCAL proposed to manage, through a formal process, Sites 2, 7 and 8. The proposed conservation areas comprise 3.9 hectares at Site 2 (approximately 99 clumps) and 9.7 hectares at Sites 7 and 8 (approximately 113 clumps). Site 6 would be managed as part of the conservation plan for *Tetratheca juncea*.

On 20 December 2002, OCAL provided a response to issues raised by NPWS relating to a further indigenous vegetation conservation area as offset for Squirrel Glider, Little Bent-wing Bat, Large Bent-wing Bat, Masked Owl, Grey-crowned Babbler, Hooded Robin, Black-chinned Honeyeater, Brown Treecreeper, Speckled Warbler, Diamond Firetail Regent Honeyeater, Turquoise Parrot, Swift Parrot and biodiversity values in relation to the relocation of a section of Wakefield Road. The response identified that both the 18 hectare SCESFC and the 13.6 hectare dry sclerophyll open forest/woodland proposed for protection would provide suitable habitat for the threatened species listed above.

5.1.4 Department's Position

In October 2002, the Department engaged the consultant Mr Robert Payne of Ecological Surveys and Management to conduct an independent assessment of the work undertaken on *Tetratheca juncea* by Ecotone Ecological Consultants.

The report *Westside Mine Assessment. Black-Eyed Susan* (Appendix 2), found that the search method was appropriate but that other sites along the ridge line should also be conserved, particularly Sites 3 and 4. It was also noted that dust impacts, may be significant depending on the type of mining operation. The Report identified that the conservation strategy may not be in keeping with the Lake Macquarie *Tetratheca juncea* Conservation Management Plan.

In an *Addendum to Assessment of the Black-Eyed Susan*, Tetratheca juncea *Westside Mine Southern Extension* (Appendix 2) conservation of Site 7 would be conditional on a land exchange between the Applicant and a private landowner and that conservation of Site 6 would be conditional on a Voluntary Conservation Agreement (VCA) between State Forests and Lake Macquarie City Council.

The report concluded that the proposal should include conservation of Sub-catchment 1 comprising Sites 6, 7, 8 and 9 and part of Sub-Catchment 3 comprising Site 2 and this would achieve 53% conservation conditional on the forest being kept intact. Further discussions need to take place between the Applicant, Lake Macquarie City Council and State Forests regarding the Conservation Objectives of Site 6 to incorporate this Site into the VCA. The report provided the following recommended conditions:

- "Site 7 is further investigated with the Private Landowner to bring that part of the sub-population into Conservation Status.
- An approach is to be made to *Lake Macquarie City Council* and *State Forests* to achieve Conservation Status for Site 6.
- A Management Plan be prepared for those populations to be conserved and dealt with as a single management unit."

The Department is aware that agreements to conserve Sites 6 and 7 rest with landowners other than the Applicant. Consequently, the Department requires that should it not be possible to conserve these areas, other suitable habitat is identified for conservation through the Conditions of Consent.

The Department considers the Westside Mine Extension could potentially affect habitat for threatened fauna. Habitat protected through VCAs would address the impacts on *Tetratheca juncea* and SCESFC communities. Survey effort for other threatened species in the development area together with

implementation of recommendations from the survey effort is a requirement to address the potential presence of these species in the area.

The impacts relating to mining to the south of Cockle Creek would potentially affect the ecological values of the creek habitat. The Department requires changes to the hydrological regime of the creek be minimised for the duration of the development.

In considering the impacts on species and communities identified in the Development Area, the Department concludes that, subject to the mitigation measures provided by the Applicant and the requirements set out in the Conditions of Consent, the proposal is unlikely to have a significant impact on flora and fauna. The Department considers that the issues raised by submissions in this regard have been addressed.

5.2 Air Quality

5.2.1 Applicant's position

An "Air Quality Impact Assessment " was prepared by Holmes Air Sciences (HAS) for the proposal and is provided in Appendix 7 and summarised in Section 5.7 of the EIS.

Air Quality Criteria

The air quality criteria used to assess the impacts of particulate matter are listed in Tables 3, 4 and 5.

Table 3. Annual Average Particulate Matter Criteria

POLLUTANT	CRITERION
Total suspended particulate matter (TSP)	90$\mu g/m^3$
Particulate matter<10μm (PM_{10})	30$\mu g/m^3$

Table 4. Twenty-four Hour Average Particulate Matter Criterion

POLLUTANT	CRITERION
Particulate matter<10μm (PM_{10})	50$\mu g/m^3$

Table 5. Annual Average Dust Deposition Criteria

POLLUTANT	MAXIMUM INCREASE IN DEPOSITED DUST LEVEL	MAXIMUM TOTAL DEPOSITED DUST LEVEL
Deposited dust	$2g/m^2$/month	$4g/m^2$/month

Note: Dust is assessed as insoluble solids as defined by AS 3580.10.1-1991 (AM-19)

Existing Environment

Dust Deposition

Within the communities closest to the existing Westside Mine, existing monitoring for dust deposition was provided from two sites in Wakefield, two sites in Killingworth and one site in Barnsley.

The annual average dust deposition rates for insoluble solids in g/m^2 /month at these sites is shown in Table 6.

Table 6. Measured Annual Average Dust Deposition Rates

Date	**Site 13, Killingworth**	**Site 18, Killingworth**	**Site 20, Wakefield**	**Site 21, Wakefield**
1997/98	1.2	1.3	NA	1.5
1998/99	0.8	1.7	1.2	0.7
1999/2000	1.7	1.4	NA	1.2
2000/01	1.1	1.3	1.9	1.2

These annual average dust deposition rates are well below the NSW EPA's criterion of 4 g/m^2 /month at all monitoring sites.

Concentration

Data for one high volume sampler monitoring site (No.40, Trongate, Killingworth) near dust deposition monitoring site 18 was presented in the EIS and summarised in Table 7.

Table 7. Measured Annual Average TSP concentrations from High Volume Sampler at Trongate

Date	**24-hour TSP concentration ($\mu g/m^3$)**	**Date**	**24-hour TSP concentration ($\mu g/m^3$)**
20/10/99	18	22/11/00	44
21/12/99	21	04/04/01	93
21/02/00	32	14/06/01	13
06/06/00	22	23/10/01	110
23/08/00	34	07/01/02	34
Annual Average			**42**

The annual average total suspended particulate matter concentration is well below the NSW EPA criterion of 90$\mu g/m^3$.

PM_{10} concentrations were measured on a six-day cycle at a site in Wakefield. With the exception of bushfire effects, there have been no measured 24-hour average PM_{10} concentrations above 50$\mu g/m^3$. The average of these readings, excluding two measurements affected by bushfire, is 18.8$\mu g/m^3$.

In considering the contributions from Westside Mine, Holmes Air Sciences has estimated annual average background concentration as 7$\mu g/m^3$ for PM_{10} and 32$\mu g/m^3$ for TSP.

Assessment of Impacts

To assess the impacts of particulate matter emissions, the industrial source complex dispersion model (ISC3ST) was used. Particulate (TSP and PM_{10}) emissions for the proposal were estimated for years 3 and 6 of mining. These years were chosen for modelling as being the worst case scenarios in terms of distance to the nearest residence and maximum production rate respectively.

For Year 3, the dispersion model predictions are presented in Table 8. The values in bold are those locations where the relevant criteria have been predicted to be exceeded.

Table 8. Dispersion predictions for Year 3

Air Quality Measure	Averaging Period	Total predicted impact (i.e. background plus increment) at receptors (Figures 5.9, 5.10, 5.11 of EIS)					
		S	**T**	**W**	**X**	**Y***	**Z***
PM_{10}	Annual	26$\mu g/m^3$	24$\mu g/m^3$	**34**$\mu g/m^3$	**40**$\mu g/m^3$	**56**$\mu g/m^3$	**107**$\mu g/m^3$
TSP	Annual	52$\mu g/m^3$	62$\mu g/m^3$	72$\mu g/m^3$	82$\mu g/m^3$	**102**$\mu g/m^3$	**182**$\mu g/m^3$

Air Quality Measure	Averaging Period	Total predicted impact (i.e. background plus increment) at receptors (Figures 5.9, 5.10, 5.11 of EIS)					
		S	**T**	**W**	**X**	**Y***	**Z***
Dust Deposition	Annual	<2.1g/m^2 /month [x]	2.1g/m^2 /month [x]	2.4g/m^2 /month [x]	2.7g/m^2 /month [x]	3.1g/m^2 /month [x]	**4.9**g/m^2 /month [x]

*property owned by Applicant

[x] estimated background dust deposition rates using the highest reading of 1.9g/m^2 /month recorded at site 20 in 2000/01.

All non-mine owned residences comply with the annual average TSP, PM_{10} and dust deposition criteria with the exception of properties W and X which will experience exceedences of the annual average PM_{10} criterion. Mine owned property Y will experience exceedences of the TSP and PM_{10} criteria while property Z will exceed all criteria.

For Year 6 in which maximum production is anticipated, the dispersion model predictions are presented in Table 9. The values in bold are those locations where the relevant criteria have been predicted to be exceeded.

Table 9. Dispersion predictions for Year 6

Air Quality Measure	Averaging Period	Total predicted impact (i.e. background plus increment) at receptors (Figures 5.12, 5.13, 5.14 of EIS)					
		S	**T**	**W**	**X**	**Y***	**Z***
PM_{10}	Annual	< 17μg/m^3	< 17μg/m^3	17μg/m^3	17μg/m^3	22μg/m^3	**40**μg/m^3
TSP	Annual	42μg/m^3	46μg/m^3	48μg/m^3	48μg/m^3	52μg/m^3	**92**μg/m^3
Dust Deposition	Annual	2.1g/m^2 /month [x]	2.1g/m^2 /month [x]	2.2g/m^2 /month [x]	2.3g/m^2 /month [x]	2.4g/m^2 /month [x]	3.9g/m^2 /month [x]

*property owned by Applicant

[x] estimated background dust deposition rates using the highest reading of 1.9g/m^2 /month recorded at site 20 in 2000/01

All non-mine owned residences comply with the annual average TSP, PM_{10} and dust deposition criteria. Mine owned property Z will experience exceedences of the annual average PM_{10} and TSP criteria. .

5.2.2 Mitigation Measures proposed by the Applicant

The EIS outlines a number of air quality safeguards, which would be employed to reduce emissions of dust from the mine. These measures are:

- Watering road surfaces and hard stand areas, where required;
- Limiting exhaust fumes through equipment maintenance;
- Dust minimisation training;
- Speed controls on areas of potential dust generation;
- Prompt rehabilitation of disturbed areas following completion of mining;
- Route allocation to formed roads wherever possible;
- Dust controls on drills;
- Regular grading of roads;
- Minimising area of pre-stripped land; and

- Use of coarse stemming materials for blasting.

5.2.3 Community/Agency Position

NSW Agriculture identified the potential for air quality impacts as an issue. Several private residents raised a number of issues relating to air quality. These include:

- impact of dust on:
  - local schools;
  - domestic water supply from rainwater tanks,
  - respiratory health;
  - Diega Creek; and
  - dams and swimming pools.
- Vehicle pollutants from the realigned Wakefield Road;
- consideration of very dry strong windy periods in planning dust mitigation; and
- independent monitoring of dust mitigation measures.

Air quality issues were raised 14 times in the submissions received.

Submissions from the public raised the potential need for windows to be kept closed in summer and potential impact of dust emissions on health.

Tables 8 and 9 identify these properties where the air quality impact assessment criteria will be exceeded.

5.2.4 Department's position

The Department considers that the air quality assessment in the EIS satisfactorily assesses the possible impacts on air quality and dust deposition for years 3 and 6 of the mine extension. However, in Year 4, there may be an impact on other non-mined owned residences because of the proximity of the mine extension to Wakefield.

Consequently, the Department requires the Applicant to conduct a monitoring program which would verify the EIS modelling results and identify any further impacts. Where impacts above the criteria are exceeded, measures to mitigate them would be required. For exceedences above the acquisition criteria identified in the Conditions of Consent, a protocol for purchase or exchange would be followed. Consequently, the Department considers that dust impacts can be managed in a satisfactory manner.

5.3 General and Visual Amenity

5.3.1 Applicant's position

The Applicant assessed the proposed mine extension in terms of visual amenity during the preparation of the EIS. Visual transects were constructed to demonstrate the potential view of the proposed operations from Wakefield and the realigned Wakefield Road/Rhondda Road intersection. The outcomes of this assessment are provided in Section 5.10 of the EIS.

Existing Environment
Two dominant ridge lines generally restrict views to the existing mine at present from Wakefield. Vegetated bunds and screens filter the view of the existing mine from Wakefield Road.

Potential Impacts

Landscape effects

The assessment considered the potential impacts associated with the proposal including mine pits, overburden emplacement areas and the Wakefield Road section relocation.

The potential impact in Years 1, 3 and 6 were assessed and it was considered that Years 3 and 6 would have similar visual effects for the residents of Wakefield. As the proposed mining operations move to the new East Pit (Years 3, 4 and 5), residents in approximately ten houses may have intermittent views through intervening vegetation into the active pit area and bare earthworks.

Commuters are also expected to have intermittent views, through intervening vegetation of the new East Pit and the visual contrast is expected to be high. However, the short duration of the views was considered to render the effect on commuters as not significant.

Mine lighting effects

Generally, the effect of mine lighting at night would be restricted to a night glow. Fixed lighting is provided at the administration area, workshop and crushing plant. The existing or similar mobile lighting plants would be used in the new working areas as required.

The effects are predicted to increase as the proposed operations move up to 250 metres to the south of existing operations but will be mitigated by both intervening topography and vegetation. The EIS indicates that it is not considered that these lighting effects will be significant because of proposed hours of operation (7am to 10pm).

General amenity

The impacts on general amenity have been dealt with separately in the EIS under the relevant Air Quality, Noise and Vibration and Visual Amenity sections (EIS, Sections 5.7, 5.8 and 5.10).

5.3.2 Mitigation Measures proposed by the Applicant

Landscape effects

Tree screening adjacent to the realigned Wakefield Road and the pit limit (on the eastern side of the existing Wakefield Road alignment) was considered to assist in providing only short term views in Year 3. Rehabilitation will occur progressively for areas that have been mined.

Mine lighting effects

Proposed mitigation measures include:

- all mobile plant is fitted with shields to reduce glare and, where practicable, will be directed away from nearby residences and public roads;
- no direct lighting effects will occur at properties after 10pm and before 7am;
- direct lighting effects at properties would be minimised at all times;
- night glow will be reduced by ensuring that, wherever possible, lights are turned off when not required; and
- out of hours maintenance work would be undertaken in maintenance areas away from residences or, where this is not possible, shielding of residences from direct overnight lighting would occur.

General amenity

It was proposed that the most affected properties would be purchased to minimise the general amenity impacts at the closest residences to the mine.

5.3.3 Community/Agency Position

Submissions from the community raised the following issues:

- the visual impact of overburden mounds from the extension; the raising of School Road by 3 metres (which would require 3 metre embankments and detract from nearby resident's visual amenity);
- loss of existing green belt which would reduce visual privacy; and

- a buffer zone to minimise the general amenity impacts of the mine on Wakefield residents.

5.3.4 Department's Position

In response to the issues raised, OCAL indicated that an option to eliminate the proposed 3 metre embankments at School Road would be possible. However, the Department considers that since the final design has not been determined, the Conditions of Consent require that the Applicant minimise the amenity impact at properties affected by the proposed embankments.

The Department requires that lighting is designed in accordance with the appropriate Australian Standard and screening and other measures should be provided to avoid lighting and visual impacts. With reference to a buffer zone, OCAL has either purchased or is in the process of purchasing a number of properties in the vicinity of the mine. Rental of these mine-owned properties would be undertaken on the understanding that potential lessees are informed of the environmental impacts at those properties prior to undertaking any agreement with OCAL.

The Department is satisfied that the impacts identified are manageable and can be minimised through the relevant Conditions of Consent.

5.4 Noise and Vibration

5.4.1 Applicant's position

During the preparation of the EIS, the Applicant engaged Richard Heggie and Associates Pty Ltd to conduct a noise and blast impact assessment of the proposal. The study was provided in Appendix 8 and discussed in Sections 5.8 and 6.4 of the EIS.

Both intrusive and amenity noise impacts were considered and the assessment of the potential noise impacts was undertaken in accordance with the NSW EPA's Industrial Noise Policy (INP). For this proposal, noise impacts are anticipated to arise from: mining operations; relocation of a section of Wakefield Road; haulage of coal and overburden; and receipt of reject material.

Noise other than blasting

Mining is proposed from 7am up to 10pm Monday to Saturday with no mining or coal crushing on Sundays. Plant and equipment maintenance activities have been proposed for up to 24 hours a day 7 days per week (p4.9, EIS).

Project specific noise limits were established and up to seven localities would experience noise levels in exceedence of these. The predicted noise levels at each location are shown in Table 10 for Years 3 and 6 of operations.

Table 10. Predicted Noise levels for Years 3 and 6.

Location	**Predicted Mine Noise Level $L_{Aeq\ (15\ minute)}$ (dBA)**			
	Year 3		Year 6	
	Day	Evening	Day	Evening
Z	**58**	**47**	**48**	**48**
Y	**46**	37	39	35
X	42	35	35	33
W	**48**	36	40	39
U	**44**	34	41	**40**
T	**46**	35	40	39
S	**45**	34	38	38
R	42	32	36	35
Q	**43**	33	38	38
P	42	32	37	36
L	42	32	38	37

Note: Daytime $L_{Aeq\ (15\ minute)}$ project specific noise limit of 42dBA, Evening $L_{Aeq\ (15\ minute)}$ project specific noise limit of 39dBA

Road Transport

Road relocation

Approximately 1.2 km of Wakefield Road would be relocated and the intersection with Rhondda Road would be moved approximately 750 metres to the east. Noise modelling of the proposed relocation of Wakefield Road was undertaken using CORTN modelling. The criteria applied from the EPA's 1999 *Environmental Criteria for Road Traffic Noise* (ECTRN) are "Redevelopment of existing local roads" with $L_{Aeq(1hr)}$ 55 dB(A) from 7am to 10pm and $L_{Aeq(1hr)}$ 50 dB(A) from 10pm to 7am with no increase of more than 2dB(A). Under this assessment, Residence Z would experience an $L_{Aeq\ (1\ hour)}$ increase in excess of 2dBA.

Table 11. Predicted road traffic noise

Location	**Predicted Road Traffic Noise Level $L_{Aeq\ (1\ hour)}$ (dBA) from the EIS**			
	Future Alignment		Change from existing noise levels	
	Day	Night	Day	Night
Z	67.9	67.0	6.1	6.1
Y	60.3	59.5	1.3	1.3
X	59.9	59.1	-0.2	-0.2
W	53.9	53.1	0.3	0.3

Using the above criteria, the relocation of Wakefield Road was identified as potentially affecting residences W, Y and Z. Properties W, Y and Z are now owned by OCAL. Table 11 is a prediction for road traffic noise from Wakefield Road. Property X owned by R. Peel and V. Dewez is identified as experiencing a reduction in noise from this source. However, changes to the School Road/Wakefield Road also have the potential to affect this property and, depending on the vertical alignment of the new intersection, may increase noise at this residence.

Noise from haulage routes

Eraring Power Station route

The nearest residential dwellings are located approximately 500 metres from the private haul road. The EIS estimated that an $L_{Aeq\ (1\ hour)}$ noise level of 36dB(A) would be experienced at residences 500 metres from the private haul road for existing coal haulage rates and that this would increase to an $L_{Aeq\ (1\ hour)}$ of 37 dBA due to increased haulage rates.

Other routes

The major impact from the Vales Point route would occur where traffic uses local roads such as parts of Northville Drive and Wakefield Road. Transport of coal to Macquarie Coal Preparation Plant or Newstan Colliery and transport of reject from MCPP would involve an increase in noise levels at residences in the vicinity of the private haul roads.

Airblast and Ground Vibration

At present, closures of Wakefield Road occur during blasting. It is assumed that closures would be required during the life of the Proposal.

An estimate of airblast overpressure (linear peak) and ground vibration (peak particle velocity) for Years 3 and 6 at the nearest location to residences have been provided in the EIS using maximum instantaneous charge (MIC) of 25kg. These estimates are presented below:

Table 12. Predicted Air Blast and Ground Vibration levels in Years 3 and 6.

Location	**Year 3** Predicted Mine Blasting		**Year 6** Predicted Mine Blasting	
	Airblast dB Linear	**Ground Vibration** mm/s	**Airblast** dB Linear	**Ground Vibration** mm/s
Z	**132**	8.3	**137**	**13.6**
Y	**126**	5.0	**123**	4.4
X	**125**	4.7	118	3.1
W	117	2.5	118	3.1
V	111	1.5	108	1.4
U	108	1.1	104	1.0
T	114	2.0	115	2.3
S	113	1.8	113	2.0
R	115	2.1	113	1.9
EPA Limits	115 exceeded for no more than 5% of the total no. of blasts over a 12 month period. No exceedence of 120dB.	5mm/s exceeded for no more than 5% of total no. of blasts over a 12 month period. No exceedence of 10mm/s.	As for Year 3	As for Year 3

The EIS states that for a maximum instantaneous charge (MIC) of 25 kg in Years 3 and 6, air blasts would exceed the EPA guidelines at three residences and ground vibration would be exceeded at one of the residences. Blasting would generally occur during the hours 9.00am to 5.00pm Monday to Saturday.

Noise and vibration from augering

Appendix 8 of the EIS (page 19) indicates that predicted noise levels were obtained by estimating the noise from a drill in operation (in its most exposed location) and a high wall auger in use. The Applicant has indicated that the highwall auger would be located at the bottom of the pit and therefore subject to screening by the pit face. It was predicted that because of this it would not be a dominant component of noise emissions at nearby residences. It was also predicted that it would not cause vibration that would be propagated to the surface.

5.2.2 Mitigation Measures proposed by the Applicant

Noise other than blasting

The Applicant proposes to implement the following measures to limit noise emissions:

- in the south west, operations would be restricted to the northern side of the ridge line to provide most shielding to residences immediately to the south of this area;
- the intended operation hours are 7.00am to 10.00pm;
- the drill which is considered to have the highest contributing noise source at residences to the south of the site, would not be used after 6.00pm. (Drilling after 6pm would only be considered if a quieter drill were used.);
- after 6.00pm any dozers used would be confined to acoustically screened locations within the mine pit, where possible; and
- existing noise management practices would continue to be implemented, including periodic noise monitoring at nearby residences; and maintenance of plant and equipment in good working order.

Road Transport

Road relocation

To minimise disruption to traffic, the road section relocation would be fully constructed prior to being open to traffic.

Eraring Power Station route

Haulage rates were considered to be below those likely to provide a significant impact on nearby residents.

Vales Point Power Station route

The most potential for noise impact would be where traffic would use local roads including sections of Northville Drive and Wakefield Road (north of Westside Mine). Traffic would be increased from 8 to 16 movements per hour on this route. It was estimated that 16 traffic movements would be below the increase of $L_{Aeq\ (1\ hour)}$ 2 dB(A) acceptable under the "Redevelopment of existing local roads" criteria from the EPA's NSW ECRTN adopted in the EIS.

Transport to Macquarie Coal Preparation Plant or Newstan Colliery

If coal was transported to more than one of Eraring Power Station, Vales Point Power Station, MCPP or Newstan Colliery, on any given day, the total truck movements would be reduced on a pro-rata basis.

Transport from Macquarie Coal Preparation Plant to the mine

Transport of reject from MCPP would only occur in the final stage of the mining and rehabilitation of the site.

Transport of select overburden for tiling

To minimise the impact of transporting this material off-site, the maximum haulage rate would be 6 trucks per hour from the site and would only occur when there is no use of the public road system for transport of product coal to Vales Point Power Station.

Airblast and Ground Vibration

The EIS indicates the following existing procedures would be maintained:

- training all relevant personnel regarding environmental obligations and safe handling of explosives;
- designing and undertaking blasts to ensure vibration and airblast limits are met, including the use of adequate stemming, delay detonation system, careful drilling and hole loading to ensure that the required blast design is met;
- taking account of weather conditions such as inversions, wind direction and cloud;
- monitoring blasts at sensitive locations to verify whether airblast and vibration limits are met and to continue to obtain additional data for refining the predictive site-law;
- modification of the blast design, if necessary;
- documentation of the date, location of blast holes and quantity of explosives used each day;
- periodic review of blast management procedures to evaluate performance and identify corrective action, if required; and
- continuing to notify residents prior to blasting, for those residents who request such notification.

5.2.3 Community/Agency Position

The impact of noise on residents and livestock was raised by the Department of Agriculture in its submission.

Community submissions included impacts of noise on residences and the school from mining activities, road widening and relocation, augering and road haulage. The effect of temperature inversions on noise was also raised.

5.2.4 Department's Position

Noise other than blasting

The Applicant's monitoring of existing background noise levels at Wakefield provides a reasonable approximation of the noise levels experienced at potentially affected residences. The scenarios modelled by the Applicant present credible worst-case noise levels for Years 3 and 6.

The Applicant's noise modelling shows that exceedences of project specific noise levels would occur at properties Q, S, T, U, W, Y and Z in Year 3 and properties U and Z in Year 6. Two properties Y and Z which exceed the project specific noise limits by 5dB(A) or more have been purchased by OCAL

For the remaining properties the Department requires that, should acquisition or exchange occur, a process should be followed which is provided in the Conditions of Consent. Monitoring is also required to be provided to verify modelling at other locations in consultation with the EPA.

The Department considers that sleep disturbances are likely to occur. Therefore, the Department requires that the Applicant undertake periodic noise monitoring. The Department's Conditions of Consent require that the Applicant does not exceed a sleep arousal criterion of 36dB(A) between 10pm and 7am at any residential receiver.

Road Transport

The Department reviewed the ECRTN criteria applied to the relocation of the section of Wakefield Road affected by the Proposal. It was determined that the classification in the EPA's ECTRN criteria for "New local road corridor in a rural area" more appropriately defined the changes to Wakefield Road. The limits under this classification are:

- $L_{Aeq(1hr)}$ 55dB(A) between 7am and 10pm; and
- $L_{Aeq(1hr)}$ 50dB(A) between 10pm and 7am.

The new road should be designed so as not to increase existing noise levels by more than 2dB(A).

The Applicant has already indicated that noise monitoring would be provided as part of the measures proposed. The Department also requires the Applicant to provide noise monitoring along road haulage routes. Consequently the Department considers that the Applicant needs to undertake mitigation or other measures where an exceedence has been identified through monitoring and this is required in the Conditions of Consent.

Airblast and Ground Vibration

The Department concurs with the Applicant's view that, in general, the vibration from augering would not exceed vibration criteria limits at any residences. However, blasting impacts may be experienced as the mine moves close to Wakefield in Years 3 and 4. Also, as blasting would require closure of Wakefield Drive from time to time, the effects of blasting would need to be monitored. The Department concurs with the EPA's approach in this matter and considers that, to ensure that impacts from blasting remain within the criteria listed at the end of Table 12, a monitoring program supported by mitigation is required. This is a requirement of the Conditions of Consent.

6. SCOPE OF CONDITIONS OF CONSENT

The recommended conditions of consent at Attachment "**A**" have been prepared taking into consideration the General Terms of Approval and other issues raised by Government agencies, Council and all other submitters including land owners.

The recommended conditions of consent provide for appropriate management of adverse environmental impacts associated with the development, provide environmental criteria which define acceptable levels of performance; require environmental monitoring, reporting and independent review and set requirements for mine infrastructure provision.

The Department has undertaken extensive consultation with the Applicant concerning the content and intent of the conditions of consent.

7. CONCLUSION

The Department considers that there are no environmental impacts from the proposed Southern Extension of Westside Mine which could not be effectively managed through the recommended consent conditions. The Proposal is consistent with State, regional and local planning objectives.

8. RECOMMENDATION

It is RECOMMENDED that the Minister approve the development application (DA 125-5-2002) for the proposed Southern Extension of the Westside Open Cut Coal Mine as submitted by Oceanic Coal Australia Limited subject to the attached conditions of consent.

Endorsed

Nick Agapides
Manager, Mining and Extractive Industries

Sam Hadddad
Executive Director

Sylvia Nillsen
Environmental Planning Officer, Mining and Extractive Industries

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MATTERS FOR CONSIDERATION – GENERAL

In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

(a) the provisions of:

- **(i) any environmental planning instrument, and**
- **(ii) any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority, and**
- **(iii) any development control plan, and**
- **(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), that apply to the land to which the development application relates,**

The Department's consideration of these matters is contained in Section 3.1 to 3.7 of this Report (pages 8-10). The Department is satisfied that all relevant planning issues have been addressed and considered in the determination of the development application. The Department concludes that the proposal is consistent with the aims, objectives and provisions of all the applicable planning instruments, plans and policies.

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;

The likely environmental impacts of the proposal are considered and assessed in Sections 4 and 5 of the Report (pages11-30). The Department has considered all the environmental, social and economic impacts of the proposal and concludes that the proposed development can be managed, subject to the imposition of the recommended conditions of consent. The recommended conditions of consent address performance criteria, environmental management plans, environmental monitoring and environmental auditing, which would apply to the development, if approved.

(c) the suitability of the site for the development;

The suitability of the site for the development is considered in Section 2.7 (page 7) and Sections 3 and 5 (pages 8-10 & 15-30 respectively) of this Report. The proposal is consistent with land use objectives. The potential impacts of the proposal can be effectively managed. The location of the mine extension has been constrained by availability of near surface coal, flora and fauna habitat and existing land uses. The Department concludes, on the basis of this assessment, that the site is suitable for the proposal.

(d) any submissions made in accordance with this Act or the regulations;

A detailed discussion of the issues raised in submissions is contained in Section 4 (pages 11-14) and referred to in Section 5 (pages 15-30) of this Report. Submissions were received from government agencies and members of the public. The issues raised in the submissions have been addressed in this assessment of the proposal and/or appropriate conditions of consent have been incorporated to manage these concerns and potential impacts.

(e) the public interest.

The public interest of the proposal is considered in Section 1 through to Section 5 of this Report (pages 1-30). It is considered that the proposal is consistent with State and regional planning objectives relating to environmental management, sustainable economic development and employment generation. The Department therefore considers that the proposal is in the public interest and all environmental, economic and social issues have been addressed in the assessment of the proposal

References

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