

Premier coal mine expansion, Collie

Western Collieries Ltd

**Report and recommendations
of the Environmental Protection Authority**

**Environmental Protection Authority
Perth, Western Australia
Bulletin 601
December, 1991**

THE PURPOSE OF THIS REPORT

This report contains the Environmental Protection Authority's environmental assessment and recommendations to the Minister for the Environment on the environmental acceptability of the proposal.

Immediately following the release of the report there is a 14-day period when anyone may appeal to the Minister against the Environmental Protection Authority's recommendations.

After the appeal period, and determination of any appeals, the Minister consults with the other relevant ministers and agencies and then issues his decision about whether the proposal may or may not proceed. The Minister also announces the legally binding environmental conditions which might apply to any approval.

APPEALS

If you disagree with any of the assessment report recommendations you may appeal in writing to the Minister for the Environment outlining the environmental reasons for your concern and enclosing the appeal fee of \$10.

It is important that you clearly indicate the part of the report you disagree with and the reasons for your concern so that the grounds of your appeal can be properly considered by the Minister for the Environment.

ADDRESS

Hon Minister for the Environment
18th Floor, Allendale Square
77 St George's Terrace
PERTH WA 6000
CLOSING DATE

Your appeal (with the \$10 fee) must reach the Minister's office no later than 5.00 p.m. on the date indicated below.

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Summary and recommendations

The Environmental Protection Authority has assessed a proposal by Western Collieries Ltd (the proponent) to develop an open cut coal mine at the Premier deposit in the Shotts Sub-Basin of the Collie Coal Basin. The Premier area is about 10 kilometres east of Collie and consists mainly of State Forest managed by the Department of Conservation and Land Management (Figure 1).

The Premier Coal Mine would supply approximately 2 million tonnes of coal per year to the proposed private power station due to be built by 1996. It is a proposed open cut coal mining operation which will have a life of 30 years and is on the scale of the Muja mining operation. The mining method will follow the practices being used in the existing open cut operations elsewhere in the Collie Coal Basin.

The open cut will commence at the southern end of the Premier project area and progress northwards to eventually cover an area of about 7 kilometres by up to 2 kilometres in width. Backfilling of the pits will occur and a final hole will be left at the southern end covering an area of about 2 square kilometres. The waste dumps will be shaped to form a 5 kilometre long ridge elongated north-south. Further details of the proposal are contained in the proponent's Consultative Environmental Review, though the document lacked detail which made the assessment more difficult.

The coal mining operations of Western Collieries Ltd are controlled under the Collie Coal (Western Collieries Ltd) Agreement Act, 1979, and the Mining Act, 1978, which include many conditions that relate to environmental matters. The primary land use of the Collie Coal Basin has been designated as coal mining but, at the same time, full account must be taken of the need for mining to be compatible with other important land uses.

The main issue raised by the Premier coal mining proposal is the incompatibility of the location of the crusher facility with the residents of Shotts townsite, because of the potential dust and noise impacts. The crusher facility is a central handling point for the coal mine and includes the transport of the coal by large trucks, dumping into the crusher and then placing the coal on a conveyor for transport to the proposed new private power station. The placement of the crusher facility about 400 metres from the nearest residence in Shotts is the preferred option by the proponent on mine planning and economic grounds.

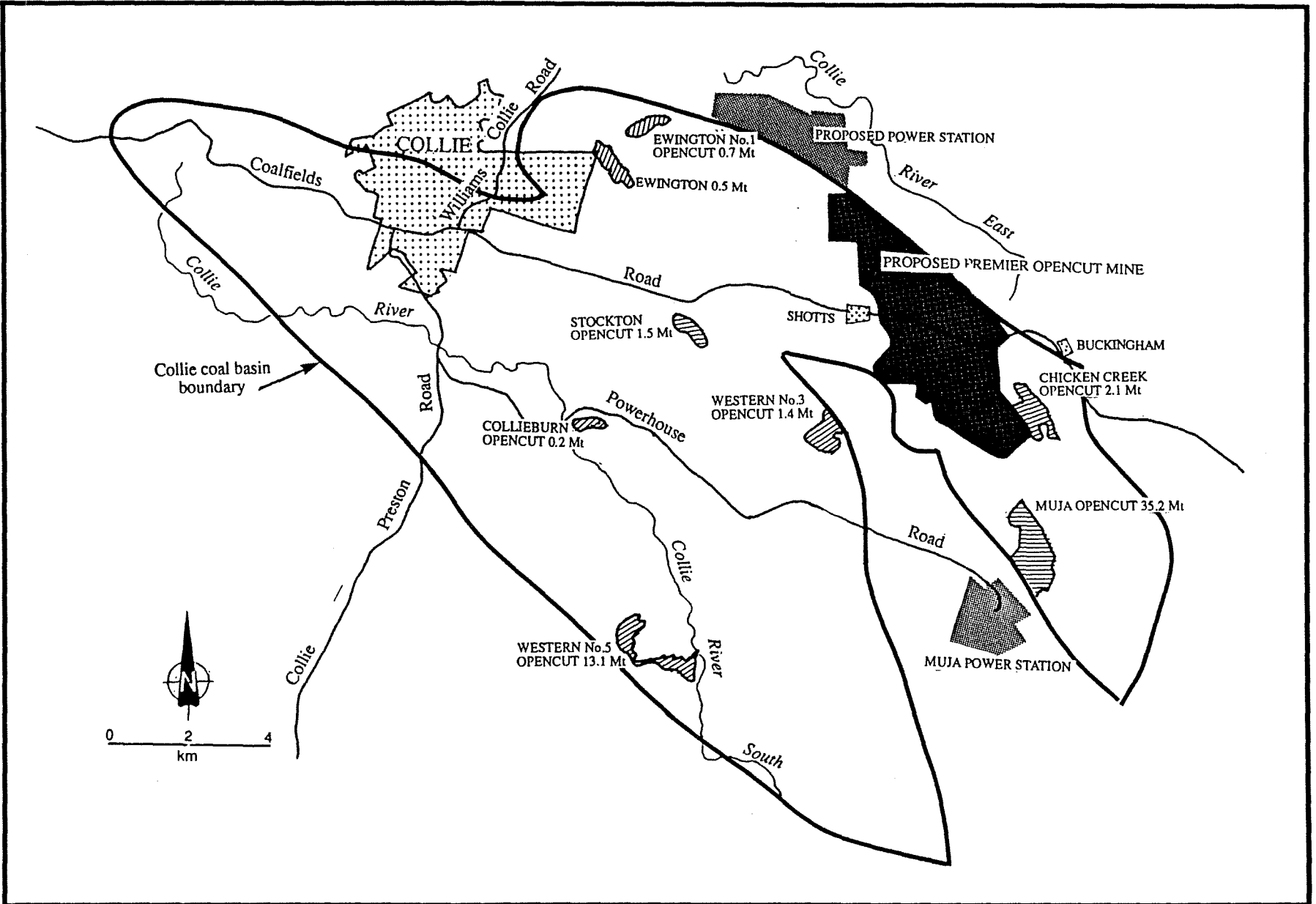
The Environmental Protection Authority, based on its own experience and supported by expert opinions, concludes that the noise and dust impacts from the crusher facility on the residents of Shotts could not be managed to appropriate environmental standards.

The Environmental Protection Authority concludes that the proposal would only be environmentally acceptable if the proponent either moves the crusher facility a suitable distance away from the Shotts townsite and implements strict dust, noise and risk management measures on the mining operation when it is close to the townsite, or relocates the residents of the Shotts townsite.

Before the commencement of the mining operation, the Environmental Protection Authority has recommended that the proponent prepare a management strategy to either relocate the crusher facility or relocate the residents at Shotts.

Subject to the approval of the management strategy, the Environmental Protection Authority concludes that the Premier coal mine proposal would be environmentally acceptable.

Figure 1. Location of the Premier coal mine, Collie Basin



Major issues raised

The key environmental issues that were identified involved the following :

- impacts of noise and dust from the crusher facility on the residents of Shotts townsite;
- environmental management of the mining operation;
- noise limits;
- dust limits;
- impacts of the mine dewatering operation; and
- rehabilitation to an acceptable final land use.

A summary of the Environmental Protection Authority's conclusions and recommendations on each of the key environmental issues is presented below.

Impacts of noise and dust from the crusher facility on the residents of Shotts townsite

The main issue raised by the Premier coal mining proposal has been discussed previously and the Environmental Protection Authority has concluded that the noise and dust impacts on the residents of Shotts townsite could not be managed to appropriate environmental standards.

The Environmental Protection Authority's main recommendation is that a management strategy must be prepared and approved by the Minister for the Environment which details strategies to either relocate the crusher facility or to relocate the potentially affected residents at Shotts (Recommendation 1). Subject to the approval of the management strategy, the Environmental Protection Authority concludes that the Premier coal mine proposal would be environmentally acceptable (Recommendation 2).

Environmental management of the mining operation

The Premier coal mine proposal would be a major earth moving operation on the scale of the Muja mining operation and would involve large-scale environmental impacts related to forest clearing, dewatering and land reclamation. The environmental management of the mining operation to minimise the adverse environmental impacts and to achieve the objective of rehabilitating most of the land to a productive State Forest would require an on-going commitment of resources by the proponent.

The Environmental Protection Authority considers that the standard of land reclamation at the former and existing mining operations in the Collie Coal Basin has generally not achieved contemporary standards for similar earthmoving operations. The Authority is not convinced that the potential environmental problems of long-term acid mine drainage, salinisation of water supplies, spread of dieback disease, unsuccessful land reclamation, compensation for loss of State Forest estate or disturbance of other surrounding land uses have been satisfactorily addressed by any of the mining operations in the Collie Coal Basin.

The Environmental Protection Authority concludes that the proponent should prepare an Environmental Management Programme which plans for and monitors the effects of the Premier coal mining operation and provides management strategies based on the monitoring results. The Environmental Management Programme should particularly address noise, dust and risk impacts on surrounding residents, the mine dewatering operation, the impact on the conservation values and area of the State Forest, dieback disease management and rehabilitation to an acceptable final land use (Recommendation 3).

The potential noise, dust and risk impacts from all components of the coal mining operation should be evaluated by the proponent, particularly for the residents of the semi-rural settlement near Shotts and Buckingham townsite. Management strategies to ensure that the noise, dust and risk limits are environmentally acceptable at these and adjacent rural properties surrounding the mining operation should be prepared.

With regard to the conservation values of the State Forest, the Authority concludes that more detailed surveys of the vegetation complexes, flora and fauna, particularly the rare or endangered species, should be conducted prior to the commencement of clearing of any areas of State Forest. The information on the conservation values of the State Forest would assist mine planning, for example, to relocate rare fauna and to avoid, as much as possible, direct impacts on particular habitats or rare flora and to assist rehabilitation planning to restore particular habitats of any rare fauna. With regard to dieback disease management, the Environmental Protection Authority concludes that a defined dieback hygiene programme, under the Department of Conservation and Land Management's supervision, is required as part of the Environmental Management Programme.

Noise limits

The Environmental Protection Authority considers that the following noise limits would be environmentally acceptable at the residences surrounding the mining operation. **Introduced noise from the project should not cause the noise at the surrounding residences to exceed :**

- **50dB(A) from 7am to 7pm Monday to Saturday;**
- **45dB(A) on Sunday and from 7pm to 10pm Monday to Saturday; and**
- **40dB(A) from 10pm to 7am every day.**

These levels should not be viewed as normal operating levels for the mining operation. They are the upper limits above which action will be taken by the Environmental Protection Authority. The Environmental Protection Authority considers that noise below these levels is not unreasonable provided it does not include tonal components, impulses or other intrusive characteristics (Recommendation 4).

With regard to noise from blasting the Authority would set levels of 115 dB peak linear for 95% of the blasts and a maximum level of 120 dB peak linear for any blast.

The proponent would be required to prepare and implement a noise monitoring programme to demonstrate compliance with the noise limits, as part of the Environmental Management Programme.

Dust limits

The Environmental Protection Authority considers that the following dust limit would be environmentally acceptable at the residences surrounding the mining operation. **Dust from the mining operation should not cause the short term level of dust to exceed 1000 microgrammes/cubic metre ($\mu\text{g}/\text{m}^3$) when continuously sampled over a 15 minute period (Recommendation 5).**

The proponent would be required to prepare and implement a dust monitoring programme to demonstrate compliance with this limit, as part of the Environmental Management Programme.

Impacts of the mine dewatering operation

The effects of the dewatering are predicted to result in a lowering of the water level of near surface aquifers by up to 5 metres which will extend for a distance of about 1.5 kilometres from the Premier coal deposit. The deeper aquifers are predicted to have a greater lowering of water level but the effect will be limited in extent. There are several existing groundwater users that may be affected by the mine dewatering, the State Electricity Commission of WA (SECWA) and several licenced and unlicenced domestic bores on surrounding residential and rural properties. The proponent is committed to providing the water from the dewatering operation to SECWA as a priority, which would replace all or at least most of the expected loss from Shotts Borefield.

The Environmental Protection Authority, on advice of the Water Authority of WA, considers that the proponent should maintain the existing domestic supplies of the users on surrounding properties which are impacted by the dewatering operation. The Water Authority has advised that, if necessary, it would possibly set up an advisory committee to attempt to resolve disputes

between the groundwater users in the area. The proponent has previously assisted other water users in the Collie Basin area which have been affected by the coal mining operations.

The effect of the dewatering of the existing mining operations on the State Forest areas surrounding those mining operations has not been observed to be significant. The Authority concludes that a significant effect should not occur on the State Forest areas surrounding the Premier coal deposit.

The Environmental Protection Authority concludes that managing the impact of the mining operation on the groundwater resource of the area and on the users of the resource that are potentially affected by the dewatering operation is the responsibility of the proponent. The Authority recommends that a groundwater management plan, as part of the Environmental Management Programme, should be prepared and implemented (Recommendation 6).

Rehabilitation

The rehabilitation of the mine site to an acceptable final land use is an important aspect of the proposal. The proponent identified the objective of implementing a successful rehabilitation programme but has not provided any information on the techniques which would be used to achieve the objective. The proponent is conducting rehabilitation and research on the old and existing coal mining sites within the Collie Basin with encouraging though short-term results.

The Environmental Protection Authority concludes that a rehabilitation plan, as part of the Environmental Management Programme, should be prepared and implemented. Land reclamation procedures can then be developed utilising this information.

Environmental acceptability of proposal

The Environmental Protection Authority's main conclusion is that the proposal would only be environmentally acceptable if the issue of the potential dust and noise impacts from the crusher facility on the residents of Shotts townsite is resolved by relocating either the residents or the crusher facility.

Recommendation 1

The Environmental Protection Authority concludes that the proposal to mine coal at the Premier coal deposit near Collie, as described in the proponent's Consultative Environmental Review and Response to Issues (Appendix 1), has an environmentally unacceptable aspect which must be resolved before the start of the mining operation. This aspect is that the proponent should identify those residents surrounding the Premier lease area which would be adversely affected by the noise, dust and risk impacts from the mining, crushing and transport operations and either relocate them or modify the mining operation to reduce the impacts to acceptable levels.

This conclusion applies particularly to the residents of Shotts townsite, where the potential impacts from the crusher facility and the mining operation would be clearly unacceptable, and possibly to other surrounding residents as well, such as those at the semi-rural settlement near Shotts, Buckingham townsite and adjacent rural properties surrounding the lease area.

Accordingly, the Environmental Protection Authority recommends that, before the start of the coal mining operation, the proponent shall prepare a management strategy to either relocate the crusher facility or to relocate the potentially affected surrounding residents, to the satisfaction of the Minister for the Environment on advice from the Environmental Protection Authority.

Subject to the approval of the management strategy, the Environmental Protection Authority concludes that the proposal would be environmentally acceptable subject to the following recommendations.

Recommendation 2

The Environmental Protection Authority concludes that, subject to the implementation of Recommendation 1, the proposal to mine coal at the Premier coal deposit near Collie, as described in the proponent's Consultative Environmental Review and Response to Issues (Appendix 1), is environmentally acceptable. In reaching this conclusion, the Environmental Protection Authority identified the main factors requiring detailed consideration as :

- environmental management of the mining operation;
- noise limits;
- dust limits;
- impacts of the mine dewatering operation; and
- rehabilitation to an acceptable final land use.

The Environmental Protection Authority considers that these and other issues can be addressed by either the recommendations in this report, the proponent's environmental management commitments (Appendix 3) or by the environmental conditions under the Collie Coal (Western Collieries Ltd) Agreement Act.

Recommendation 3

The Environmental Protection Authority recommends that, before the start of each phase of the mining operation, the proponent shall prepare and subsequently implement an Environmental Management Programme to plan for and monitor the effects of that phase of the mining operation and provide appropriate management strategies based on the monitoring results. The Programme should address, but not necessarily be limited to, the management, monitoring, auditing and reporting requirements of the following issues :

- noise, dust and risk impacts on surrounding inhabitants;
- mine dewatering operation;
- impact on the conservation values and area of the State Forest;
- dieback disease management; and
- rehabilitation to an acceptable final land use.

The Environmental Management Programme should be prepared and implemented to the satisfaction of the Environmental Protection Authority.

Recommendation 4

The Environmental Protection Authority recommends that introduced noise from the project should not cause the noise in the surrounding residential areas to exceed :

- **50dB(A) from 7am to 7pm Monday to Saturday;**
- **45dB(A) on Sunday and from 7pm to 10pm Monday to Saturday; and**
- **40dB(A) from 10pm to 7am every day.**

These levels should not be viewed as normal operating levels for the plant. They are the upper limits above which action will be taken by the Environmental Protection Authority. The Environmental Protection Authority considers that noise below these levels is not unreasonable provided it does not include tonal components, impulses or other intrusive characteristics.

Recommendation 5

The Environmental Protection Authority recommends that dust at surrounding residences from the mining operation shall not exceed a short term level (measured over 15 minutes) of 1000 microgrammes per cubic metre ($\mu\text{g}/\text{m}^3$) to the satisfaction of the Environmental Protection Authority.

Recommendation 6

The Environmental Protection Authority recommends that, before commencement of the mine dewatering operation, the proponent shall prepare and subsequently implement a groundwater management plan, as part of the Environmental Management Programme, which describes measures to maintain the water supplies of any existing user of the groundwater resource which is being affected by the dewatering operation, to the satisfaction of the Environmental Protection Authority on advice of the Water Authority of WA.

1. Introduction

The Environmental Protection Authority has assessed a proposal by Western Collieries Ltd (the proponent) to develop an open cut coal mine at the Premier Deposit in the Shotts Sub-Basin of the Collie Coal Basin (Figure 1). The need for the proposal was justified by the proponent as the awarding of a contract by the State Energy Commission of Western Australia (SECWA) to Western Collieries Ltd (WCL) for the supply of coal to the proposed new private power station near Collie.

The proponent's Consultative Environmental Review was available for a four week public review period finishing on 26 July 1991. Some 30 submissions were received which raised a number of issues and these were copied or summarised and submitted to the proponent. The proponent provided a Response to Issues (Appendix 1) which provided more information on the proposal and made further environmental management commitments to address the issues where necessary. A list of submitters is in Appendix 2.

The operations of Western Collieries Ltd are controlled under the Collie Coal (Western Collieries) Agreement Act, 1979, and the Mining Act, 1978. This proposal would be incorporated under the Agreement Act with all its conditions, which include many that relate to environmental matters.

2. The proposal

The Premier Coal Mine would supply approximately 2 million tonnes of coal per year to the proposed private power station due to be built by 1996. It is a proposed open cut coal mining operation which would have a life of 30 years and is on the scale of the Muja mining operation. The mining method would follow the practices being employed in the existing open cut operations elsewhere in the Collie Coal Basin (Figure 1).

The open cut will commence at the southern end of the Premier project area and progress northwards to eventually cover an area of about 7 kilometres by up to 2 kilometres in width. Backfilling of the pits will occur and a final hole will be left at the southern end covering an area of about 2 square kilometres. The waste dumps will be shaped to form a 5 kilometre long ridge elongated north-south. Further details of the proposal are contained in the proponent's Consultative Environmental Review, though the document lacked detail which made the assessment more difficult.

The Collie Basin is a depression within the Archaean basement containing Permian coal-bearing sediments. The Basin covers an area of approximately 274 km² and supports a variety of land uses other than coal mining, such as agriculture, hardwood milling, pine plantations, wildflower harvesting, seed collection, apiculture, power production, tourism, quarrying and recreation.

The Premier project area comprises approximately 80% State Forest and most of the rest (17.5%) is owned freehold by Western Collieries Ltd. The freehold land is generally farmland which is cleared and used for grazing. The remaining 2.5% contains forest leases, miscellaneous reserves, part of Shotts townsite and a small pine plantation.

The Shotts townsite has eight inhabited dwellings and there are a further five inhabited dwellings in a small semi-rural settlement just southwest of Shotts. Within 5km of the Premier lease boundary there are 35 registered landowners, though not all of the properties have dwellings. The proponent reported that it had contacted all the landowners during the assessment process.

A further description of the existing environment of the Premier project area is contained in the proponent's Consultative Environmental Review.

3. Environmental impacts and management

The environmental issues raised in the Environmental Protection Authority's assessment of the proponent's Consultative Environmental Review on the Premier coal mine proposal and in submissions on the proposal are discussed below. The key issues which were identified are :

- impacts of noise and dust from the crusher facility on the residents of Shotts townsite;
- environmental management of the mining operation;
- noise limits;
- dust limits;
- impacts of the mine dewatering operation; and
- rehabilitation to an acceptable final land use.

A discussion of the Environmental Protection Authority's conclusions and recommendations about each of the key issues is presented below.

3.1 Impacts of noise and dust from the crusher facility on the residents of Shotts townsite

The main issue raised by the Premier coal mining proposal is the incompatibility of the location of the crusher facility with the residents of Shotts townsite, because of the potential dust and noise impacts. The crusher facility is a central handling point for the coal mine and includes the transport of the coal by large trucks, dumping into the crusher and then placing the coal on a conveyor for transport to the proposed new power station. The placement of the crusher facility about 400m from the nearest residence in Shotts is the preferred option by the proponent on mine planning and economic grounds.

The Environmental Protection Authority, based on its own experience and supported by expert opinions, concludes that the noise and dust impacts from the crusher facility on the residents of Shotts could not be managed to appropriate environmental standards.

The Environmental Protection Authority concludes that the proposal would only be environmentally acceptable if the proponent either moves the crusher facility a suitable distance away from the Shotts townsite and implements strict dust, noise and risk management measures on the mining operation when it is close to the townsite, or to relocate the residents of the Shotts townsite.

The Environmental Protection Authority's main recommendation is that a management strategy must be prepared and approved by the Minister for the Environment which details strategies to either relocate the crusher facility or to relocate the potentially affected residents at Shotts (Recommendation 1). Subject to the approval of the management strategy, the Environmental Protection Authority concludes that the Premier coal mine proposal would be environmentally acceptable (Recommendation 2).

3.2 Environmental management of the mining operation

The Premier open cut coal mining operation would affect an area of about 15 km², mainly of State Forest, and result in a large permanent hole of about 2km² and a main waste dump of about 8km² which would form a ridge about 5km long and up to 80m above the surrounding land. The proposal is a major earth moving operation on the scale of the Muja mining operation and involves large-scale environmental impacts related to forest clearing, dewatering and land reclamation. The environmental management of the mining operation to minimise the impacts and to achieve the objective of rehabilitating most of the land to a productive State Forest would require an on-going commitment of resources by the proponent.

The Environmental Protection Authority considers that the standard of land reclamation at the former and existing mining operations in the Collie Coal Basin has generally not achieved

contemporary standards for similar earthmoving operations. There has been some encouraging rehabilitation results, such as at the Collieburn open cut mine, but the long-term success of the land reclamation is yet to be established. The Authority is not convinced that the potential environmental problems of long-term acid mine drainage, salinisation of water supplies, spread of dieback disease, unsuccessful land reclamation, compensation for loss of State Forest estate or disturbance of other surrounding land uses have been satisfactorily addressed by any of the mining operations in the Collie Coal Basin.

The Environmental Protection Authority concludes that the proponent should prepare an Environmental Management Programme which plans for and monitors the effects of the Premier coal mining operation and provides management strategies based on the monitoring results. The Environmental Management Programme should particularly address noise, dust and risk impacts on surrounding residents, the mine dewatering operation, the impact on the conservation values of the State Forest, dieback disease management and rehabilitation to an acceptable final land use (Recommendation 3).

There is a semi-rural settlement with five residences to the southwest of Shotts townsite, which may be adversely affected by the dust and noise impacts from the crusher facility. The nearest resident is about 1.7km from the crusher facility and it may be possible to keep the dust and noise impacts to environmentally acceptable levels. However, the mining operation, involving dumping of waste material comes within 600m of the nearest residence for a period and it may be difficult to manage the noise and dust impacts to acceptable levels. The Environmental Protection Authority concludes that the proponent should review, through further work, whether the dust and noise impacts from the crusher facility and the dust, noise and risk impacts from the mining operation would be able to be kept within acceptable limits for these residences.

The potential noise, dust and risk impacts from all components of the coal mining operation should be evaluated by the proponent, particularly for the residents of the semi-rural settlement near Shotts and Buckingham townsite. Management strategies to ensure that the noise, dust and risk limits are environmentally acceptable at these and adjacent rural properties surrounding the mining operation should be prepared.

The potential noise and dust impacts on surrounding residents would be managed by the limits to be set by the Minister for the Environment; these are discussed below. The risk factor relates mainly to the risk of fly rock from blasting operations, but also relates to the increase in heavy traffic and dangerous goods transport and storage. The issues related to the mine dewatering operation and the rehabilitation are discussed in sections 3.5 and 3.6 below.

Conservation values of the State Forest

Approximately 15 km², mainly of State Forest, will be cleared over the life of the mine, though a maximum of only about 7 km² would be cleared at any time. The proponent reported in the Consultative Environmental Review that it had conducted floral and faunal surveys and that no record had been made of any declared rare flora nor protected fauna species in the area of the proposed mine site. Limited details of the scope and intensity of the surveys has been provided.

The proponent has identified the vegetation systems of the area at a regional level, in terms of the vegetation complexes described by the Department of Conservation and Land Management (CALM). CALM has advised the Authority that two vegetation complexes, the Cardiff and Muja, are localised to the Collie Coal Basin and that it is important that a proportion of these two complexes are protected in order to preserve the biodiversity of these complexes. The Environmental Protection Authority concludes that the proponent is responsible for providing maps at an appropriate scale of the vegetation complexes on the Premier lease area to assist both the mine planning, rehabilitation and the regional assessment of the preservation of these complexes.

The Environmental Protection Authority, on advice of the Department of Conservation and Land Management, is concerned that the proponent's vegetation, flora and fauna surveys may not have been comprehensive enough to identify either the habitats or the presence of rare fauna

or flora which are known to occur in the region. The Authority concludes that more detailed surveys of the flora and fauna, particularly the rare or endangered species, should be conducted prior to the commencement of clearing of any areas of State Forest. The information on the conservation values of the State Forest would assist mine planning, for example, to relocate any rare fauna and avoid, as much as possible, direct impacts on particular habitats or rare flora and assist rehabilitation planning to restore particular habitats of any rare fauna.

Dieback disease management

Dieback disease is the common term for the effect of the fungal pathogen *Phytophthora* sp., which infects the root systems of many native plants and may kill them through induced water stress. The seven species of *Phytophthora* are known to attack at least 1000 plant species, some of which are rare. Hence, the objectives for the control of dieback in the State Forest are to prevent the introduction of the disease into currently dieback-free areas and to minimise its spread from infected areas. The control of the disease is important in order to allow successful rehabilitation and to maintain the nature conservation values of the State Forest areas affected by and surrounding the mining operation.

The proponent is committed to cooperating with the Department of Conservation and Land Management in the management of dieback but has not defined a comprehensive dieback management programme. The Environmental Protection Authority concludes that a defined dieback hygiene programme, under CALM supervision, is required as part of the Environmental Management Programme.

3.3 Noise limits

The proponent is committed to minimising the extent, opportunity and duration of the periods when a significant impact from noise would occur and to conducting an on-going monitoring programme. The Environmental Protection Authority considers that the following noise limits would be environmentally acceptable at the residences surrounding the mining operation. Introduced noise from the project should not cause the noise at the surrounding residences to exceed :

- 50dB(A) from 7am to 7pm Monday to Saturday;
- 45dB(A) on Sunday and from 7pm to 10pm Monday to Saturday; and
- 40dB(A) from 10pm to 7am every day.

These levels should not be viewed as normal operating levels for the mining operation. They are the upper limits above which action will be taken by the Environmental Protection Authority. The Environmental Protection Authority considers that noise below these limits is not unreasonable provided it does not include tonal components, impulses or other intrusive characteristics. The Authority is aware of a potential problem from the intrusive noise of the reversing signal from large trucks. The proponent is liaising with the Department of Mines to resolve the issue which is a safety requirement under Mining Act 1978 and Regulations.

With regard to noise from blasting, the proponent has committed to conducting a property condition survey of all properties close to the mine site and to rectifying any damage due to blasting vibration. In addition, the proponent is committed to liaising with local residents, blasting only in normal awake hours and to the use of noiseless initiation systems (Appendix 3). The Authority would set levels of 115 dB peak linear for 95% of the blasts and a maximum level of 120 dB peak linear for any blast. The details of the monitoring programme and compliance standards would be set under the licencing provisions of Part V of the Environmental Protection Act, 1986.

The proponent would be required to prepare and implement a noise monitoring programme to demonstrate compliance with the noise limits, as part of the Environmental Management Programme (Recommendation 4).

3.4 Dust limits

The proponent is committed to monitoring dust levels and to implementing reasonable dust mitigation measures as necessary, which would be to the satisfaction of the Minister for the Environment. The Environmental Protection Authority considers that the following dust limit would be environmentally acceptable at the residences surrounding the mining operation. Dust from the mining operation should not cause the short term level of dust at surrounding residences to exceed 1000 micrograms/cubic metre ($\mu\text{g}/\text{m}^3$) when continuously sampled over a 15 minute period.

The Environmental Protection Authority advises that details of sampling techniques, the monitoring programme and compliance standards would be set under the provisions of Part V of the Environmental Protection Act, 1986. The proponent would be required to prepare and implement a dust monitoring programme to demonstrate compliance with this limit, as part of the Environmental Management Programme (Recommendation 5).

The Environmental Protection Authority would be investigating the use of long term dust limits and, if applicable, limits would be set under the licencing provisions of Part V of the Environmental Protection Act, 1986. The limits being investigated are that, over the long term, dust from the mining operation should not exceed an annual mean of $90 \mu\text{g}/\text{m}^3$ or a maximum of $260 \mu\text{g}/\text{m}^3$ over 24 hours (using high volume samples). The Authority also notes that interstate regulatory agencies sometimes use a dust limit of 4 grammes per square metre per month (using deposit gauges) for residences surrounding existing coal mining areas. A dust limit of $2 \text{ gm}/\text{m}^2/\text{month}$ is used for residences surrounding new coal mining areas. The Authority will be evaluating these sampling methods and limits as long term dust limits.

3.5 Impacts of the mine dewatering operation

The mine dewatering operation is essential for mine safety and is an integral part of the Premier coal mining proposal. The effects of the dewatering are predicted to result in a lowering of the water level of near surface aquifers by up to 5m which will extend for a distance of about 1.5km from the Premier deposit. The deeper aquifers are predicted to have a greater lowering of water level but the effect will be limited in extent to the northwest by sub-crops of basement and to the south by the Chicken Creek and Muja open cuts.

Within the region potentially affected by the lowering of the water level of the deeper groundwater aquifers are several existing users, the State Electricity Commission of WA (SECWA) and several licenced and unlicenced domestic bores on surrounding residential and rural properties. SECWA operate a borefield (Shotts Borefield) to supply water to the Muja power station. The proponent is committed to providing the water from the dewatering operation to SECWA as a priority, which would replace all or at least most of the expected loss from Shotts Borefield. The proponent is required to give reasonable notice to the State as will enable the State to make alternative arrangements for the provision of water to the power station.

The Environmental Protection Authority, on advice of the Water Authority of WA, considers that the proponent should maintain the existing domestic supplies of the users on surrounding residential and rural properties which are impacted by the dewatering operation. The proponent has committed to monitoring the effect of the dewatering operation and to liaising with the Water Authority of WA regarding the regional effects. The Water Authority has advised that, if necessary, it would possibly set up an advisory committee to attempt to resolve disputes between the groundwater users in the area. The proponent has previously assisted other water users in the Collie Basin area which have been affected by the coal mining operations.

The effect of the dewatering of the existing mining operations on the State Forest areas surrounding those mining operations has not been observed to be significant. The Environmental Protection Authority concludes that a significant effect should not occur on the State Forest areas surrounding the Premier deposit. However, should a significant effect occur, the Authority considers that it would be the responsibility of the proponent to mitigate

the impact, if the Department of Conservation and Land Management consider it to be necessary.

The Environmental Protection Authority concludes that managing the impact of the mining operation on the groundwater resource of the area and on the users of the resource potentially affected by the dewatering operation is the responsibility of the proponent. The Authority recommends that a groundwater management plan, as part of the Environmental Management Programme, should be prepared and implemented and, accordingly, has made an appropriate recommendation (Recommendation 6).

3.6 Rehabilitation

The rehabilitation of the mine site to an acceptable final land use is an important aspect of the proposal. The proponent stated its objective of implementing a successful rehabilitation programme but has not provided any information on the techniques which would be used to achieve the objective. At this stage the final land use of the bulk of the area is the existing land use, State Forest, though the completion criteria for the rehabilitation to this land use has not been defined. The Collie Coal Mining Rehabilitation Committee is currently defining the completion criteria and would continue to work under the provisions of the Collie Coal Mines (Western Collieries Ltd) Agreement Act to implement the rehabilitation objective.

The Environmental Protection Authority considers that the rehabilitation of the Premier lease area should be planned to replace the present function of the mined area as much as possible. Other compensatory arrangements to minimise the impact on or loss of the State Forest and to maintain the area of the State Forest estate where the land cannot be rehabilitated to forest (for example, the final pit) need to be examined as part of the Environmental Management Programme (Recommendation 3).

The proponent is conducting rehabilitation and research on the old and existing coal mining operations within the Collie Basin with some encouraging results. Also, materials handling and land reclamation procedures are in place for the existing mines and similar techniques could be used, with site specific modifications as necessary. The proponent is committed to rehabilitating the area to "compatible bushland" for State Forest areas and to landowners' requirements for freehold areas.

The Environmental Protection Authority considers that a rehabilitation plan, as part of the Environmental Management Programme, should be prepared and implemented which identifies the suitability of the soil types in the area for use in rehabilitation, identifies any soils or overburden components which are unsuitable for use in rehabilitation and identifies any soil or overburden which might give rise to pollution of surface or ground waters or other undesirable effects. Land reclamation procedures can then be developed utilising this information.

3.7 Other issues

Other issues raised during the assessment process involved matters related to the impacts of the mining operation on surface water drainage, a dump area extending outside the mining limit in the northeast corner of the lease area, interference with communications, diesel equipment fumes and concerns of inhabitants surrounding the lease area with regard to noise, dust and blasting.

The proponent provided a response to these and other issues, which was taken into account in the assessment of the proposal. The Environmental Protection Authority considers that the proponent's Response to Issues (Appendix 1), the recommendations in this report, the proponent's commitments (Appendix 3) and the environmental conditions under the Agreement Act adequately address the issues.

4. Conclusions and recommendations

The Environmental Protection Authority's main conclusion is that the proposal would only be environmentally acceptable if the proponent either moves the crusher facility a suitable distance away from Shotts townsite and implements strict dust, noise and risk management measures on the mining operation when it is close to the townsite, or relocates the residents of the Shotts townsite.

The environmental issues raised in the Environmental Protection Authority's assessment of the proponent's Consultative Environmental Review on the Premier coal mine proposal and in submissions on the proposal have been evaluated and the key issues which were identified are :

- impacts of noise and dust from the crusher facility on the residents of Shotts townsite;
- environmental management of the mining operation;
- noise limits;
- dust limits;
- impacts of the mine dewatering operation; and
- rehabilitation to an acceptable final land use.

The proponent provided a response to these and other issues, which was taken into account in the assessment of the proposal. The Environmental Protection Authority considers that the proponent's Response to Issues (Appendix 1), the recommendations in this report, the proponent's commitments (Appendix 3) and the environmental conditions under the Agreement Act adequately address the issues.

Environmental acceptability of proposal

The Environmental Protection Authority's main conclusion is that the proposal would only be environmentally acceptable if the issue of the potential dust and noise impacts from the crusher facility on the inhabitants of Shotts townsite is resolved by either relocating the residents or the crusher facility.

Recommendation 1

The Environmental Protection Authority concludes that the proposal to mine coal at the Premier coal deposit near Collie, as described in the proponent's Consultative Environmental Review and Response to Issues (Appendix 1), has an environmentally unacceptable aspect which must be resolved before the start of the mining operation. This aspect is that the proponent should identify those residents surrounding the Premier lease area which would be adversely affected by the noise, dust and risk impacts from the mining, crushing and transport operations and either relocate them or modify the mining operation to reduce the impacts to acceptable levels.

This conclusion applies particularly to the residents of Shotts townsite, where the potential impacts from the crusher facility and the mining operation would be clearly unacceptable, and possibly to other surrounding residents as well, such as those at the semi-rural settlement near Shotts, Buckingham townsite and adjacent rural properties surrounding the lease area.

Accordingly, the Environmental Protection Authority recommends that, before the start of the coal mining operation, the proponent shall prepare a management strategy to either relocate the crusher facility or to relocate the potentially affected surrounding residents, to the satisfaction of the Minister for the Environment on advice from the Environmental Protection Authority.

Subject to the approval of the management strategy, the Environmental Protection Authority concludes that the proposal would be environmentally acceptable subject to the following recommendations.

Recommendation 2

The Environmental Protection Authority concludes that, subject to the implementation of Recommendation 1, the proposal to mine coal at the Premier coal deposit near Collie, as described in the proponent's Consultative Environmental Review and Response to Issues (Appendix 1), is environmentally acceptable. In reaching this conclusion, the Environmental Protection Authority identified the main factors requiring detailed consideration as :

- environmental management of the mining operation;**
- noise limits;**
- dust limits;**
- impacts of the mine dewatering operation; and**
- rehabilitation to an acceptable final land use.**

The Environmental Protection Authority considers that these and other issues can be addressed by either the recommendations in this report, the proponent's environmental management commitments (Appendix 3) or by the environmental conditions under the Collie Coal (Western Collieries Ltd) Agreement Act.

Recommendation 3

The Environmental Protection Authority recommends that, before the start of each phase of the mining operation, the proponent shall prepare and subsequently implement an Environmental Management Programme to plan for and monitor the effects of that phase of the mining operation and provide appropriate management strategies based on the monitoring results. The Programme should address, but not necessarily be limited to, the management, monitoring, auditing and reporting requirements of the following issues :

- noise, dust and risk impacts on surrounding inhabitants;**
- mine dewatering operation;**
- impact on the conservation values and area of the State Forest;**
- dieback disease management; and**
- rehabilitation to an acceptable final land use.**

The Environmental Management Programme should be prepared and implemented to the satisfaction of the Environmental Protection Authority.

Recommendation 4

The Environmental Protection Authority recommends that introduced noise from the project should not cause the noise in the surrounding residential areas to exceed :

- **50dB(A) from 7am to 7pm Monday to Saturday;**
- **45dB(A) on Sunday and from 7pm to 10pm Monday to Saturday; and**
- **40dB(A) from 10pm to 7am every day.**

These levels should not be viewed as normal operating levels for the plant. They are the upper limits above which action will be taken by the Environmental Protection Authority. The Environmental Protection Authority considers that noise below these levels is not unreasonable provided it does not include tonal components, impulses or other intrusive characteristics.

Recommendation 5

The Environmental Protection Authority recommends that dust at surrounding residences from the mining operation shall not exceed a short term level (measured over 15 minutes) of 1000 microgrammes per cubic metre ($\mu\text{g}/\text{m}^3$) to the satisfaction of the Environmental Protection Authority.

Recommendation 6

The Environmental Protection Authority recommends that, before commencement of the mine dewatering operation, the proponent shall prepare and subsequently implement a groundwater management plan, as part of the Environmental Management Programme, which describes measures to maintain the water supplies of any existing user of the groundwater resource which is being affected by the dewatering operation, to the satisfaction of the Environmental Protection Authority on advice of the Water Authority of WA.

Appendix 1

**Western Collieries Ltd
response to issues**

FAUNA:

CALM requests information on species of mammals (native and feral), birds and reptiles noted by the fauna field studies, and where and when the surveys were undertaken.

Rare Chuditch may be present in the coal basin, as evidenced by a recent road kill near the Muja power station. Chuditch have been accidentally caught in rabbit traps in the Collie area, and Southern Brown Bandicoot have been noted in surrounding State Forest. Evidence of Numbats and Woylies has been found to the east, within possible range of the coal basin.

CALM would be interested in working with WCL on reducing the problem of feral animals. Currently, CALM is carrying out a program of 1080 fox baiting, with pre-baiting surveys of native animals to enable later evaluation of the program's success. Recolonization by native mammals could be expedited by removal of predators, and WCL may wish to contribute by supplying additional native mammal traps.

FLORA:

Detailed vegetation maps are required to indicate the existing vegetation in the Premier area. The CER states that the vegetation is of the same floral composition as the remainder of the basin. However, surveys have not been made available to confirm this statement. Three vegetation complexes occur in the basin and two of these, the Cardiff and Muja complexes, do not occur elsewhere. Where possible, representative areas of these vegetation types should be retained.

There are no known occurrences of Declared Rare Flora (DRF) in the area. However, surveys may find DRF, and if so liaison with CALM will be required to prevent disturbance to, or to permit "taking" of, such flora.

REHABILITATION:

Rehabilitation with indigenous coal basin species would be preferred to "compatible" species. While use of such compatible species may speed up the rehabilitation process, long term success may be improved by planting indigenous species which have adapted to specific coal basin conditions. Rehabilitation using different species may result in a dual forest system, which would present management difficulties. If other species need to be used, they should be from the south-west.

A knowledge of the link between current soil type profiles and vegetation types is a necessary basis for future rehabilitation programs. This should be researched by Western Collieries. Completion criteria for the rehabilitation is also required.

DRAINAGE:

Research is needed into the likely effects of acidic water on the flora and fauna of the natural water system. Careful positioning of dumps and layering of interburden within dumps will be necessary to minimise acid leaching. Drainage management details are also required as drainage patterns can affect the extent of dieback infection.

GROUNDWATER:

Long-term abstraction has occurred in the basin. No scientific evidence is given for the statement that this has not affected the vegetation. Past operations were generally much smaller than the Premier mine proposal, and groundwater abstraction correspondingly less. In this CER, a possible drawdown of 5 metres is mentioned for shallow aquifers to the north-west of the mine area.

WCL, in co-operation with the new power station, should monitor the effects of groundwater abstraction on the nearby native vegetation as well as on that within the mine area. Drawdown effects are likely to extend in an irregular pattern from the points of abstraction.

BASIC RAW MATERIALS:

Sand, gravel and rock may occur in some areas to be disturbed by mining. In order to maximise the use of these resources, CALM requests that WCL allow controlled access to these basic raw materials by the Collie Shire where such access does not interfere with mining.

FOREST PRODUCE:

Adequate time will need to be allowed for CALM to maximise utilisation of forest produce in front of mine clearing. Notice of the initial clearing of the mine site, for example, should be at least 12 months in advance.

DIEBACK:

WCL have stated in the CER their intention to undertake mapping of dieback hazard, and to carry out acceptable hygiene controls.

Infected water is an important vector in the spread of dieback. Drainage patterns will need to be managed with this in mind.

INFRASTRUCTURE:

In order to minimize the area of State Forest degraded for non-mining purposes, utilities should as far as possible, be grouped in corridors. Grouping of such utilities as haul roads, bore lines, power lines and conveyors will also reduce CALM management costs. (If feasible, a portable conveyor would minimize clearing of unmined forest).

It should be noted that the coal stockpile for the new power station has not yet been finalised, so determination of the position of the northern end of the conveyor is premature. However, the intention to run the conveyor mainly along roads and on private property rather than through State forest is acceptable.

VOIDS:

Although the final void will not be in place for decades, consideration should be given to making it as safe as possible with surface dumps far enough away to pose no threat of slips. Backfilling should be done in such a way as to maximise the void's recreation potential and safety for recreation. For example, a gently sloping beach well beyond the lowest possible water level could be used.

RUBBISH:

It is noted that WCL will dispose of their own domestic waste garbage in backfill. Investigations need to be made in utilising this facility for disposal of rubbish from the Collie Townsite. This would lead to an extended life for current and future rubbish dumps, some of which may be on State forest.

DUMPS:

As noted in Table 7 of the CER, dumps should be designed to minimise erosion and contamination.

Form: Details of the composition of the interburden are necessary, so that material with high acid potential can be masked. This may reduce acid leaching and improve likelihood of successful rehabilitation.

Positioning:

While it is appreciated that dumps are positioned so as to minimise sterilization of coal, unnecessary encroachment on State forest should be minimised. Backfill into pits and use of private property for out-of-pit dumps are first preferences. The amended proposal for an out-of-pit dump beyond the north-west ~~west~~ ^{ext} corner of the mine site is not yet finalised.

A cross-sectional map of the mine area is required to indicated proposed changes to topography due to mining and dumping.

FIRE PROTECTION:

In order to reduce management difficulties and fire risk, positioning of infrastructure and disposal of waste forest produce should be discussed with CALM.

WATER RESOURCES

1. Western Collieries commitment to turbidity control via stabilised drains, contour banks, settling ponds and silt traps and licence requirements (page 59) was noted. It is expected that WCL will conform to the draft licence requirements expressed in WAWA's "Collie Coal Basin - Water Resources Management Strategy" of July, 1988. In the event that groundwater salinities exceed 550 mg/L or acidic waters mobilise heavy metals, WCL will need to implement a strategy to protect the waters of the Collie River East. This strategy may include discharge of mine waters to the power station, treatment to ensure conformity with licence requirements, deep well injection, or the least preferred option of export via a pipeline out of the catchment.
2. WCL will be obliged to implement control systems to deal with waste oils and lubricants from mechanical servicing facilities and wash-down bays. Such facilities may include dissolved air flotation units, chemical coagulation, or plate separators. Wastes recovered in this process shall be either recycled or exported off site.

3. Sewage wastes from employee amenities will require treatment to achieve biological stability and effective disinfection prior to disposal. Facilities exceeding the capacity of septic tanks will require the approval of the Health Department and WAWA.

GROUNDWATER

1. The report provides only a general description of the hydrogeology and of the likely impacts on groundwater of the proposals. Broad statements of fact are backed up by little or no data.
2. It appears likely that mine dewatering will have a significant effect on water tables in the surface aquifer however the CER does not adequately describe or explain the consequences of dewatering. WCL will presumably be obliged to make good the water supplies of any established groundwater users adversely affected by the project within the intent of WCL Company and Environmental Policy (Section 3.5).
3. Groundwater (4.8.2)
 - i) The description of the occurrence of perched water tables is unclear.
 - ii) The reasons for the decreasing heads with depth in the deeper aquifers are varied (including drawdowns due to pumping at the Shotts Borefield) and may have little to do with the elevation of recharge areas.
4. Waste Disposal (5.5)

Landfill should be sited sufficiently above the post-decommissioning-phase water table to satisfy Health Department requirements. The material between the landfill and the water table should provide adequate filtration and purification of any leachate produced.
5. Groundwater (5.6.2)
 - i) What is the basis of the estimated up to 50% reduction of production capacity at the Shotts Borefield?

- ii) Drawdowns of bore water levels (including the water table) in excess of 5m already have been recorded in the Shotts Sub-basin since the commissioning of the Shotts Borefield, as much as 4-5km from the borefield. More wide ranging effects could be expected following the proposed two-to-four-fold increase in abstraction in the area.
- iii) There is no water table map to show the location of groundwater divides.
- iv) How was the extent of dewatering effects delineated? More data are required.
- v) Sufficient monitoring is required to map the extent and magnitude of drawdowns. The monitoring network should be in place as early as possible in the pre-development stage and should be expanded and upgraded as necessary.

6. The Water Authority believes that the disposal of groundwater from dewatering prior to commencement of the new power station must be considered in detail. In particular it may be made available to SECWA or if SECWA cannot take the water and it is of suitable quality it may be discharged into the river.

7. Waste Dumps

The effects of the waste dumps on groundwater recharge quality and quantity are not discussed.

8. Final Void

The effects of the water filled final void on groundwater flow and quality in the basin are not discussed. Water in the void is expected to be of low pH. This presumably is indicative of the expected post-mining pH of groundwater in the areas.

Environmental Protection Authority

Issues and concerns raised in the letters.

NOISE, BLASTING, DUST

- 1) How will you prevent shock waves associated with blasting from causing structural damage to buildings? What contingency plan will you put into place, to deal with any such damage, if it should occur?
- 2) Has any study been done on coal dust emission, and its potential to contaminate the surrounding run-off water of the area? How will these emissions be controlled?
- 3) Will an increase in heavy traffic occur through or near the centre of Shotts? If so, what will be your course of action to reduce this?
- 4) Are you aware of the effects that relocation of roads and the general mining activities will have on the day to day lives of the local residents? What can you do to minimise the inconveniences that may arise?
- 5) How will you control noise levels emitted from the mine site, with reference to the sound of reverse signals on dump trucks, and the noise from the crusher?
A solution suggested in a submission is to create a buffer zone between the town-site and the mine. The buffer zone could be created by landscaping a hill out of overburden, between the two sites. Trees could also be planted to add to the noise reduction from the mine. What is the likelihood of this option being employed?

GROUNDWATER

- 6) To what extent will mining of the area have an effect on surrounding groundwater and river levels?
- 7) What strategy will you employ to keep salinity and pH levels of the groundwater at their natural level?
- 8) How will liquid wastes, such as oils and lubricants from mechanical servicing facilities and wash down bays, be collected and removed?
- 9) What is your programme in regards to the disposal of groundwater from dewatering, prior to the commencement of the new power station? If reduced levels occur in the groundwater, will an alternative source of good water be supplied to those groundwater users adversely effected by the project?

SURFACE WATERS

- 10) How will flood levels be managed if diverted floodwaters cause higher than normal levels to occur elsewhere and threaten existing dwellings?
- 11) Are you aware of the potential of flooding to properties on the opposite side of the Collie River, adjacent to the mine-site due to the modification of the river bank and flood plain caused by mining? If so, what action will you take to prevent this from happening?
- 12) Will a study be set up to see the effect that mining will have on the eastern branch of The Collie River?

13) Are you aware that the possible silting up of the Collie River may occur due to contaminated run-off from tailings and overburden, flowing into adjacent streams in the Collie River catchment? What measures will be put into place to prevent this?

OTHER ISSUES

14) Will there be a study on the effect of mining activity on the surrounding flora and fauna. In particular the species of flora *Boronia Nematophylla* found in the surrounding areas of the mine site? Does the company propose to undertake a flora and fauna survey of the areas to be impacted by the proposed mine?

15) Are you aware of the possibility of electromagnetic interference associated with mining, to electrical equipment in the surrounding area? What emission levels are anticipated?

16) How will you calculate an adequate level of compensation payable by your company to landowners who have had their land devalued because of mining occurring near their property?

PUBLIC SUBMISSIONS

MINING IN AREA

Mining is important to Collie and to Western Australia.
Mine is a necessary development.

GROUNDWATER

Shotts has already experienced a drop in the water table and the proposed mine will make it worse.
WCL should provide alternative supplies if needed.
Nearby residents already use groundwater (Bores, wells, soaks) for stock, gardens, domestic purposes.
Options for alternative supply - connection to pipeline, shared tank, large water tanks.
Groundwater analysis is inadequate, further detail required.
Bores and dams on east of mine area may be effected by dewatering.
Alternative supply should be guaranteed for those planning to build in Shotts in the future.
Bores/wells are being developed in Shotts - residents don't know whether to proceed or not.
Ground water status and monitoring results should be publicly available.
Backup supply in CER (page 43) consists of standpipe and supplies only non potable water.

COLLIE RIVER EAST BRANCH

Water can now spread over flat area (about 500 metres). Walls will be built to stop water entering mine and will force water to other areas downstream which will flood property and house during flood years.
Change to level or quality of river will effect the use of river for recreational purposes (eg swimming, fishing).
Quality of river has improved a lot over last few years.
Water from river is currently used for stock and domestic purposes.
CER does not show at what point excess water would be discharged into river.
Salinity and acidity of water should be considered.
Monitoring of water quality and quantity should be carried out.
Dewatering may lower river level.

DUST

Dust will come from coal crusher, dumps, haul roads and blasting.
Crusher and screenhouse too close to Shotts. Need to be moved east to screen dust.
Collie coal industry has poor record for dust control. There should be improvement over current practices.
Location and engineering design of plant should have been shown in CER.
If plant to have fill towers the specifics of dust control and monitoring should be shown in CER.
Dust from dumps, stockpiles and blasting will effect rainwater collected for from roofs for domestic purposes.
Buffer should be established to screen Shotts from dust.
Health effects of dust.
Children in the area who are asthma sufferers will be effected.
Dust will effect pasture, vegetable gardens and livestock.
Dust will enter homes.

NOISE

Area already quite peaceful.

Noise from existing mines further away can be heard.

Crusher and screenhouse too close to Shotts residents. Needs to be at least 2 km away to be acceptable.

Crusher should be moved east to screen noise.

Shotts is in a hollow which will increase noise effects.

Reversing signal is irritating - replacement device should be used.

Noise will be caused by trucks, crusher, screenhouse, other diesel equipment, conveyor belt and blasting.

Noise levels have not been estimated in CER.

What noise levels are estimated for nearby residents?

Noise will have a worse effect at night.

Buffer should be built between Shotts and mine to screen noise.

Noise should be monitored.

Those on night shift worried about day time noise levels.

Want WCL to stick to five day week operation.

Don't want overburden dumped, coal crusher or conveyor to operate at night.

Crusher could be moved south of Darkan Road and conveyor to go under road.

PROPERTY VALUE PROTECTION

Property being rented in Shotts is generating income for absent landowner. Don't want to lose income (won't be able to rent house without water).

House of such little value economically that would not be able to buy anywhere else if house sold for market value.

Don't want to pay extra money if there is a need to move.

Properties will be devalued by noise, dust, lack of water and blasting effects and the fact that a mine is so close.

Landowner has plans to build on a vacant block in Shotts in future.

Want to stay in Shotts if possible.

Don't want to be pushed into early settlements on homes.

If it become impossible to live in area what is needed is equivalent size of property; equivalent standard and size of home; power; water; landscaping; removal costs and compensation for inconvenience.

Other mines do not have houses so close to crushers, conveyor etc.

Property holders should be offered compensation of purchase of property.

Western Collieries should address financial losses that will happen because of property devaluation.

Property values should be guaranteed.

WCL should ensure that relocation costs are covered if people need to move.

Land swaps could be considered.

WCL should have all homes nearby valued prior to commencing.

DRAINAGE OFF DUMPS

Moving Shotts-South Road will put it in vicinity of first formed dumps and be effected by on drainage onto roads. Design should be to keep new and existing routes free of water.

Run off from dumps will cause silt build up in river.

REHABILITATION

Support for concept of recreation benefits of rehabilitation.

Collie Council should be represented on Collie Coal Mines Rehabilitation Committee.

What will be planted for rehabilitation?

When will rehabilitation occur?

BLASTING

Blasting from further away has already caused damage to property (homes, concrete water tanks etc).

Blasting will damage house and farm buildings from shock waves through air and ground.

Blasting causes noise disturbance.

Existing problems from blasting have meant certain building techniques need to be used.

Most blasting is OK but it doesn't take more than a few heavy blasts to cause damage.

Blasting should be kept to daylight hours.

Blasting should only go ahead in appropriate weather conditions.

All blasting should be recorded for monitoring purposes.

Blasting should be OK if its done properly.

Damage done by blasting should be rectified by WCL at their expense and in a prompt manner.

INTERFERENCE WITH COMMUNICATIONS

There is the potential for the mining operation to interfere with radios, televisions.

FUMES

Fumes from diesel equipment will be a problem.

BUILDING TECHNIQUES

Plans to build a brick house in the area are jeopardised.

Landowners prepared to use special building techniques to cope with blasting and noise.

Landowners want to be sure that techniques they are using will withstand impacts.

FLORA & FAUNA

Dewatering will effect vegetation by lowering water table.

Rare boronia exist 1.5 km east of Shotts.

Licensed wildflower picker works in area.

Programme for release of animals in area will be made difficult.

Escape routes for existing animals in area are limited.

Increased vehicular activity will be a risk to fauna.

No alternative site for controlled release available.

The date of survey of wildlife and flora shown in CER is queried.

Detailed studies have not been undertaken.

Can a new survey be undertaken.

Wildlife need access to feeding grounds and watering points.

Small native animals (eg. phoscogales) require mature tree hollows for nesting. Can nest boxes be provided in rehabilitation areas to make up for this?

There are significant numbers of brown bandicoots in area.

Reference made to hand pulling of weeds in CER - doubts that this will occur.

Bird life in area will be effected.

ROADS

Current access to property will be effected by planned road changes.

WCL should provide alternative convenient access to property.

The road realignment and main access mine will mean loss of privacy to Shotts, particularly if mine becomes a tourism feature.

Privacy could be helped by putting artificial tree planted hill between the road and Shotts.

SAFETY

Access to mining areas should be fenced.
Children in area need to be safe.

INFORMATION PROVISION

Residents should be kept informed of any proposed changes to plans shown in CER.
Copies of annual monitoring and operating reports should be sent to residents.
Two weeks not long enough to comment.
Only nine days were available from the time the document was available in Library to close of submissions.
WCL representative not available during some of public review period.

ARBITRATION

People have found it impossible to get compensation for damage to their properties from existing mines.
Legal avenues are expensive.
A system of arbitration should be instituted to resolve conflicts between local residents and mining companies.

PIPELINE

Would further pipelines be installed and what routes would they take?

LIFESTYLE

Current unique lifestyle is desirable.
Freedom and privacy now enjoyed are intangible factors.
Neighbourhood spirit in Shotts.
Area safe and stress free for children.
Farms in area have been in families for three generations.

SUBSIDENCE

Dewatering will raise risk of subsidence in areas of disused mines and underground streams.
Subsidence will effect safety for recreation pursuits.

BUFFER ZONE

Why is there no provision for a buffer zone to protect properties, especially in area of crushing plant?

INFRASTRUCTURE

What planning has there been regarding housing, medical facilities, education facilities to cater for expected workforce and population from multiplier effect?



CONSERVATION COUNCIL OF WESTERN AUSTRALIA INC.

79 Stirling Street, Perth 6000
Phone (09) 220 0652 Fax (09) 220 0653

26th July, 1991

Mr Barry Carbon
Chairman
Environmental Protection Authority
1 Mount St
Perth WA 6000

ATTN: Doug Betts

Dear Sir,

RE: Premier Mine Expansion - CER

The Conservation Council would like to submit a few brief comments on the above project.

The CER makes general statements about the Premier Mine as a whole and about the company's general rehabilitation program, however it fails to properly address the area in question. It does not adequately describe the target area and draws the conclusion that it is of poor quality and is highly disturbed, implying that the area is of little value.

The CER also claims that there are no rare and endangered faunal species in the area, a claim which appears to arise from the fact that the proponents think the area is poor quality rather than any specific research.

However, the Council understands that there have been sightings of the rare and endangered Red-Tailed Phascogale in the target area. We believe that the area provides a good habitat for species such as bandicoots. We are also aware that rehabilitated animals are released into the target area of which there are few remaining similar habitats left in the vicinity.

Other than vague statements about the company's overall rehabilitation program the CER does not adequately deal with rehabilitation of the target area. This should be more thoroughly described.

The Council is also concerned about the potential water drawdown by the mining operation. No impact of this is discussed other than any effect it might have on the power station supplies. What effect will this have on surrounding farms? Will monitoring of any impact on surrounding farms be carried out?

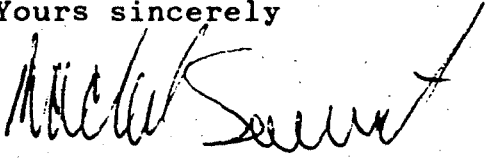
The presence of wetlands is not discussed. Water drawdown could seriously impact on wetlands in the surrounding area, this is not considered in the CER.

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| ENVIRONMENTAL PROTECTION AUTHORITY |
| 1 AUG 1991 |
| File No S/100/77/1/Instale D&E |

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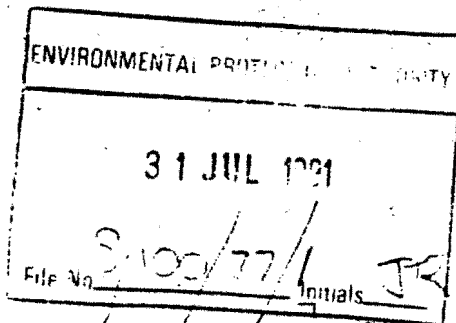
The Conservation Council recommends that a more thorough study of the area be carried out to establish habitat quality and the presence of any rare and endangered species. That further work is done on water drawdown and its impact on surrounding areas and that a more detailed rehabilitation plan is developed prior to commencement of this project.

Yours sincerely

A handwritten signature in cursive script, appearing to read 'Rachel Siewert', written in dark ink.

Rachel Siewert
Co-ordinator

Your Ref:
Our Ref: CM:CPE: 1212/91
Enquiries to: Mr C Mills
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DEPARTMENT
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The Chairman
Environmental Protection Authority
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Attn: Mr J Treloar

PROPOSED PREMIER COAL MINE
CONSULTATIVE ENVIRONMENTAL REVIEW

Thank you for the opportunity to comment on the proposal by Western Collieries Ltd (WCL) to develop a 2mT per annum coal mine at the Premier site in the Collie Coal Basin. The Department has reviewed the document and notes that the project is in a preliminary stage of planning and consequently there is a lack of detailed information. However the Department considers that the project could proceed in an environmentally acceptable manner. Most of the major environmental issues have been identified in the document and from public input at an open day held by WCL in Collie. These are seen as:

1. Mine development
2. Groundwater
3. Blasting Impacts

MINE DEVELOPMENT

Mine planning is at an early stage and many features such as detailed mine dimensions, depth of workings, methods of mining through areas of old underground workings, are not known. These will be developed and presented to Government in the formal proposal and environmental management programmes required under the Collie Coal (Western Collieries) Agreement Act 1979.

GROUNDWATER

The extent of dewatering required and its potential impact are uncertain at this stage. The impacts will be required to be made known more fully prior to the issue of a licence for ground water extraction and subsequent discharge (if any). Additionally, some aspects will be addressed through the proposals clause and the environmental management programme requirement.

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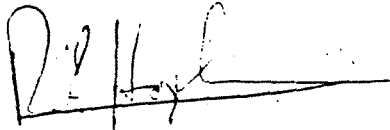
BLASTING IMPACTS

Some residents in the vicinity of the Chicken Creek Mine have expressed concern about the potentially damaging effects of blasting on structures near the proposed Premier Coal Mine. If blasting is used, it will be carefully controlled under the Coal Mines Regulation Act, administered by the Department of Mines. The Department is undertaking an extensive monitoring programme to further reduce the potential for structural damage from blasting in the Collie Basin. It can be readily demonstrated that it is possible to blast close to structures and cause no damage, eg Alcoa's operations at Jarrahdale.

This Department considers that there are adequate mechanisms in place to control and manage the environmental impact of the proposed development.

It is suggested that the Authority recommend that the proposal is environmentally acceptable, subject to the environmental controls under existing legislation.

The Department has no objections to this submission being used or published in the Authority's Report and Recommendations on the proposal.



D R Kelly
DIRECTOR GENERAL OF MINES

29 July 1991

MT680HTN290:1

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Western Collieries Ltd Response to Issues

General

From work undertaken to date, areas of special environmental significance have not been found. If located during mining then consultation with relevant agencies could be undertaken to determine the appropriate course of action.

CALM will be consulted as is the case now, on those aspects of development requiring CALM approval.

Fauna

Faunal surveys were initiated in the first Collie Basin Study in the mid 1960's. Further research was carried out in 1977 on the Shotts Basin region for SECWA and more specific work on the Premier site in 1984/1985 (See references CER) and 1988/1990.

The unpublished notes of W. H. Butler incorporate the above material (because of his involvement with all of the above programmes) with site field surveys in October 1988 and November 1990. In W. H. Butler's opinion the repetitive reproduction of existing lists was not considered necessary for this study as no new material was added.

Chuditch records exist for the Collie Basin but not in the proposed expansion area although the mobility of the species is acknowledged. Southern Brown Bandicoot is recorded along river flats and drainage lines immediately east of the area. No evidence on Numbat or Woylies has been located on site despite local advice of the potential, and subsequent searches.

During mining only a relatively small portion of native bush will be disturbed at any one time. Clearing in advance of operations will not be undertaken until necessary and consultation with CALM will be carried out. This will give native species opportunity to migrate out of the active mining area and repopulate the ongoing rehabilitation areas.

Good housekeeping will prevent encouragement of feral animals around infrastructure areas. If feral animals do become a problem due to WCL activities, control measures will be undertaken following APB and CALM advice. WCL would like to receive data of the 1080 fox baiting on the Premier site in order to determine its possible application to company programmes.

Flora

The vegetation complexes within the Premier zone are limited as stated in Section 4.6.1 of the CER.

Declared rare flora have been not identified to date, however full consultation with CALM will be undertaken if any are identified during ongoing field work ahead of mining.

CALM advice on existing detailed vegetation maps for the area would be appreciated as previous indications are that these are not available.

Rehabilitation

WCL will undertake rehabilitation in accordance with its existing successful government approved policy. Indigenous plant species will be used and full liaison with CALM will continue to help develop stable land forms vegetated with indigenous bush.

CALM's representative on the Collie Coal Mines Rehabilitation Committee is fully aware of the successful WCL programmes through active involvement.

The existing programmes have always acknowledged the link between soil types, soil profile and vegetation. This programme will continue. Research on revegetation and related issues is ongoing in accordance with WCL Collie Coal Mining Agreement Act 1979. Such research is reported annually by the Company.

Completion criteria for rehabilitation is currently the subject of consultation between concerned Government departments and Industry. WCL cannot pre-empt decisions that may be reached through these consultations.

Drainage

Existing and past research into the effects of acidic water on flora and fauna of natural water systems are in the literature and have been reported by WCL in annual reports.

The CER identifies the procedures to cover dumps and other areas with special concern for drainage detail.

Drainage management details are contained in Section 5.6.1 of CER. WCL acknowledges CALM expertise and relies on its advice to the company on dieback hygiene.

It is intended to pump all mine water initially to SECWA and later to the new power station so no mine discharge is likely.

Groundwater

Scientific studies by AGC Woodward Clyde reported bi-yearly describe the evidence supporting the statement that long term abstraction has no apparent effect on vegetation.

The five metre drawdown is an estimate of the effect on water level and was determined by GRC Dames and Moore and AGC Woodward Clyde to be more directly related to seasonal rainfall variation rather than dewatering. The effect of dewatering, if any, on native vegetation is difficult to monitor and WCL will continue review this aspect. No negative effect has been recorded or reported to date.

WCL will continue monitoring water levels and supplying this information to WAWA.

Basic Raw Materials

Current assessments indicate WCL will require all known gravel and sand deposits on the lease for construction related to the mining operation.

Forest Products

WCL will continue to apply for clearing permits six months in advance of clearing requirements for mine development under current CALM procedures.

Dieback

WCL will discuss with CALM the mapping of dieback areas and methods to handle this problem relying on CALM expertise in this matter.

Infrastructure

WCL will, in the interest of its own operation as well as for conservation reasons, minimise clearing of state forest recognising the need of safety and Mine regulation statutory requirements.

Void

Although the final void design will be undertaken to facilitate its safe use for recreation, the final void will not come into being until around the year 2030. Co-ordination with the relevant government departments will be undertaken with consultation with all concerned parties closer to that time.

Rubbish Disposal

The disposal of external rubbish on site will cause problems involving access, safety and health. The CER has been developed in respect of WCL activities in relation to coal mining and does not consider alternate uses which are properly the role of other decision makers.

Dumps

WCL's proven dump rehabilitation procedures will be undertaken (CER pages 18, 19 and "The Collie Coal Rehabilitation Committee" visits). CER Section 5.2 defines dump structure. There is no unnecessary encroachment of state forest, all activity will be confined to the lease area. No dump is designed for the NW corner, other than to merge rehabilitation profiles into existing land forms.

Fire Protection

The positioning of infrastructure including clearing of bush and the safe disposal of cleared material will be discussed with CALM well in advance of any such operation as is now the case. WCL is very aware of the danger of fire in existing bushland during the summer months and will continue to work with CALM to alleviate any fire risk.

Cross-section of lease existing topography and final form as designed is shown in Attachments 1 and 2.

WATER AUTHORITY OF WESTERN AUSTRALIA

Preamble

Water management in the basin is well understood from existing operations. It is considered that with good management of excavation, dump design and dewatering that there will be a minimal effect on the environment in respect to water. WCL has shown that with liaison with the relevant government bodies it can mine in the basin and control those issues which have been raised in the WAWA submission.

Water Resources

1. WCL will commit to the necessary controls to obtain WAWA licensing requirements. It is intended that all water be pumped to SECWA initially and then to the new power station. WCL agree that the basis for water extraction and use are covered by Collie Coal Basin - Water Resource Management Strategy, 11 July, 1988 (CCB-WRMS).
2. WCL will build suitable grease traps etc. for oils and lubricants at workshops as indicated in the CER page 16. This material will be removed from site for approved disposal.
3. All sewage will be treated to a satisfactory state of biological stability (CER page 16).

Groundwater

1. The detail of hydrology is located in GRC-Dames and Moore report, April 1990 re the Premier Development.
2. Information regarding the effect of dewatering on the near-surface aquifers suggests this appears to have little effect on the flora of the area. Rapid recharge occurs during winter months (page 54/55 AGC Woodward Clyde report 1988-1990).

Water extraction and its use will be in accordance with the Collie Coal Basin Water Resources Management Strategy July 1988.

Section 3.5 of the CER refers to rehabilitation only. Discussions with WAWA on water usage in the area will be required noting the CCB-WRMS criteria.

3.
 - i) Existence of Perched water tables is difficult to determine, however, it is not considered that they will have any major effect on operations. The Nakina sand formation tends to minimise the occurrence of these effects.
 - ii) WCL notes the information and concurs as consultants reports indicate similar information.
4. While it is difficult to determine the level of the post-decommissioning water table it is not intended to deposit any waste material in areas where the future water table could reach products detrimental to that water. WCL will continue to review its policies in the light of Government Regulations. Only inert wastes are discussed.
5. The 50% reduction in Shotts is an estimate using current knowledge and modelling techniques:
 - i) The GRC Dames and Moore and AGC Woodward Clyde reports have been used to estimate productive capacity of bores at Shotts.
 - ii) This information is given in the GRC Dames and Moore report
 - and iii) AGC Woodward Clyde reports.
 - iv)
 - v) Numerous piezometers will be placed to determine the success of dewatering for safe and practical mining. Piezometer placement will be an ongoing operation as the mine progresses as is the current practice.
6. All water will go initially to SECWA and later to the new power station.

7. It is likely waste dumps will contain minor elevated water tables. No negative effects on water quality are known. Advice on likely effect is sought from WAWA. Existing waste dump monitoring suggests very limited effect and since the same system will be used WCL does not consider this will be a significant issue.

8. Final void design will be undertaken and discussed with the relevant Government Agencies prior to implementation, however the final void is not expected to come into being until about the year 2030.

WCL notes the final paragraphs which indicates past experience is to acceptable levels of water quality control.

EPA ISSUES AND CONCERNS RAISED IN THE LETTERS

Noise, Blasting, Dust

1. Blasting will continue to be designed to limit noise levels and ground vibrations to safe levels and conform to Mines Department and EPA legislation. WCL will arrange for those living or owning property close to the mine to have a property condition survey prior to mining commencing. This will be conducted by an independent third party at WCL's expense.

Any proven damage that may occur due to WCL negligence will be rectified by WCL.

2. Existing operations do not suffer any known harmful impact from coal dust blowing from mine sites or crushing facilities.

WCL personnel periodically have health checks undertaken and no cases of coal dust induced medical conditions have occurred. Mines Department chest x-ray and lung checks show that underground miners have no coal related lung problems.

All mine surface run off water will be passed through settling ponds to trap suspended solids prior to discharge.

Collie coal dust readily oxidises and breaks down to nutrient in the surrounding environment.

3. Increased public traffic will occur along Coalfields Highway, however mine related traffic will not go through Shotts, except for employees who live in Shotts.
4. Relocation of the road should not bring the road any closer to Shotts than it is already. Road building and road formation work will be undertaken in normal "Main Roads Department" working hours.

Traffic should not inconvenience local residents over and above what is already present on the Coalfields Highway (ref page 49 CER). General mining activities will be similar to those currently occurring on the Collie basin. Since coal mining is the priority land use of the Collie coal basin, many of its residents are dependant on coal mining or its supporting activities and regard mining as an everyday activity.

It is not considered that the Premier mine will have an unusual effect on the Basin.

5. Noise will be controlled by careful use of equipment. The reversing horn problem is caused by Mines Department regulation and is a safety issue. Investigation will be carried out into alternative sounds or other methods.

The buffer zone is very small (less than 500m) and cannot be extended, however the area will have some shielding by the formation of dumps and the planting of native bush.

Workshops and infrastructure areas will be shielded from Shotts by either mine dumps or trees. Trees will be planted as early as possible.

As stated in the CER noise levels will be periodically monitored and additional noise inhibitors placed if necessary.

Groundwater

6. Local Groundwater levels will be reduced. This is necessary to allow safe and efficient mining. The river levels are not affected by dewatering (Dames and Moore report, and AGC Woodward Clyde report).
7. Groundwater salinity is not considered a problem. Saline transfer will only occur if highly saline aquifers are found in the deposit. None have been found to date in the WCL area.

The pH issue has been discussed in the CER.

8. All such oils will be collected in traps placed around workshop areas, periodically collected and removed from site for approved disposal.
9. Prior to commencement of the new power station groundwater will be pumped to SECWA by agreement. Subsequently the new power station will take all water. If water has to be discharged other than to the above, the issue will be discussed fully with WAWA (ref. Collie Coal Basin Water Resources Management Strategy July 1988).

The same Water Resources Management Strategy also details the use of groundwater in the basin as primarily for power generation.

Surface Water

10. WCL will not cause any diversion of flood water.
11. WCL does not believe planned mining will cause any modifications to river banks or flood plains. Further investigative work on this matter will be reviewed in due course.
12. WCL will not affect the Collie River East Branch during planned operations (ref. page 42 CER) nor the small flood basin.
13. WCL has proven rehabilitation techniques which minimise runoff from rehabilitation areas. All runoff will be directed through settlement ponds (CER pages 19-24).

Other Issues

14. J. KOCH (Floral Study Premier 1981) and W. H. Butler have undertaken studies in the area (CER page 69). Routine reviews of mining effects on surrounding areas will be continued.

15. WCL are not aware of any effects of electromagnetic emissions or associated health effects. Only emissions envisaged would be by VHF radio and should not affect local residents any more than those already in use. WCL will continue to comply with workplace and public safety requirements in this and all matters.

16. Information from the Government Social Impact Unit indicated that if land devaluation occurs then price quickly returns to normal market values within two years of the mine starting. All areas adjacent to Premier development are already close to existing mine developments.

PUBLIC SUBMISSION

The priority land use for the area has been designated as coal mining. Secondary use of the Collie Basin has been determined to be as a source of water. WCL agrees with the opening comments.

Groundwater

Because groundwater usage is a responsibility of WAWA, which records only one licensed user in the affected area, WCL will discuss with WAWA any problems associated with the proposed dewatering programme. Mine water will be pumped to SECWA via the existing Shotts pipeline system.

All groundwater results and monitoring information are and will be supplied to WAWA yearly (WCL report). All groundwater users in the area should recognise the requirement of the Collie Coal Basin Water Resource Management Strategy pertaining to users other than Power Station usage. Groundwater analysis is contained in CER page 44.

Collie River East Branch

The mine effect on flood water levels around the flats area to the east of the mine will be reviewed in due course, however WCL do not believe it will have any effect on flood water level as the area is not affected by current plans.

WCL do not intend to change either the levels of the river or its water quality. Existing improvements have occurred due to Griffin Coal Mining Co. discharge at the Chicken Creek Mine. WCL does not intend discharging water into the river, therefore neither the acidity or salinity will be affected. WCL already monitor water courses in surrounding areas of existing mines and likewise will monitor the Collie River East Branch and relevant major tributaries associated with this aspect of the company programme.

Dust

Dust sources from the crusher, dumps, haul roads and some blasting will be controlled by the use of water-suppression techniques.

It is not possible to move the crusher east due to the fact that this area will be mined. Possible repositioning of the crusher further away from Shotts is being reviewed. The crusher does not have an associated screenhouse.

WCL is not aware of any poor company record for dust control. WCL rehabilitate dumps to compatible bushland within one to four years, reducing the problem of dust generation.

The plant has not been finally designed since detailed engineering work has still to be undertaken closer to the time the mine will come on stream. The plant will not have a rill tower.

Distance between Shotts and mine infrastructure (less than 500m) makes buffer zone establishment difficult. A rehabilitated hill would help but the area already contains many mature trees that will assist as a buffer for noise. The destruction of these poses other environmental problems which the company wishes to avoid. WCL do not believe, with the measures it has undertaken, that dust will be a problem either for medical conditions, deposition on gardens or in houses.

Dust levels surrounding operations will be monitored. Collie coal dust in the environment oxidises very quickly and becomes nutrient.

Noise

Final crusher positioning is being reviewed in the light of possible noise effects on Shotts. It is very difficult to get it any further away due to coal sterilisation but it should be possible to provide some kind of noise shield. Any repositioning of the crusher will require changes to conveyor routes which may be less desirable to local residents.

The Shotts hollow should assist in noise reduction rather than increase noise. Noise levels are governed by EPA regulations. WCL is finalising detailed design and will produce noise models as a noise management tool. Monitoring of noise will be undertaken after discussion with EPA and the Mines Department. Noise generation on night shift and weekends will require the most management control. Night shift working will involve overburden removal and dumping and possibly coal excavation and this could also occur at weekends in the future.

Property Valuation/Change of Ownership

Any lack of water relating to the mine's development will need discussion with WAWA in light of the conditions in the draft Collie Coal Basin Water Management Strategy.

WCL will undertake to discuss with all affected land and property owners if arrangements can be mutually determined.

An independent valuation of the relevant properties will be undertaken at WCL's expense. The timing of this valuation process would be discussed on an individual basis but should be closer to the time of the mine's development.

It has to be noted that the township of Shotts is located on a mining lease which is one of the reasons why the value of land is so low. In addition some residents are outside the designated townsite which precludes equitable arrangements to some degree for all residents.

Drainage of Dumps

Dump design and management of runoff is described in the CER. WCL designed dumps ensure clean external runoff that will be channelled into natural water courses not onto roads.

The occurrence of silt in runoff will be small and will be controlled by runoff discharge through silt traps. The river will not be affected by silt buildup.

Rehabilitation

Approved bush seed mixtures will be used on rehabilitated areas so that these areas blend into the local bushland.

The Representation on the Collie Coal Mines Rehabilitation Committee is determined by the Government and is not an issue to be addressed by WCL.

WCL's policy is to return rehabilitation areas back to bush as quickly as possible and this usually occurs in one to four years. Dumps do not need to be completed before rehabilitation can commence.

Blasting

Blasting can be controlled to avoid damage to properties (ref. Mines Department). WCL will only conduct minimal blasting of coal and overburden. Blasting will be kept to daylight hours and will be kept within government regulations. Monitoring of blasts will be discussed with the Mines Department. WCL will undertake to survey houses prior to mining commencement in 1996 and will compensate for any damage due to WCL neglect.

Interference with Communication

WCL are not aware that any aspect of coal mining operations would affect radios and televisions. If they occur WCL would look at the source of such interference. If it is a WCL responsibility then it would be rectified if technically possible.

WCL cannot understand why the Premier expansion will create issues which historic and current mining have not created.

Fumes

In the light of past and existing operations fumes from diesel equipment is not seen to be a problem.

Building Techniques

This area needs to be addressed by the Shire Council regarding the types of dwelling most suitable. In doing so it should be noted that the area is a designated mining area and is subject to water restrictions.

Blasting is not expected to cause structural damage.

Flora and Fauna

Water table lowering, due to dewatering, is not demonstrated to have affect on vegetation (ref. AGC Woodward Clyde report).

W. H. Butler has made biological surveys of the area and John Koch (1981) carried out a floral survey. These indicate that the project area is significantly affected by other users. These studies are considered adequate for EPA CER purposes (see response to CALM).

Experience of existing mines is that local mobile fauna moves out of the immediate area during active mining and colonises rehabilitated areas.

It is not intended to restrict access into the bush areas near the mine other than for safety reasons, i.e. around habitation. Animals therefore have free access through bush around the site. This will assist in fauna release areas and for fauna feeding and drinking. Fauna release is subject to conditions which does not include release of previously unrecorded species.

WCL will not clear bushland unnecessarily. The timing of clearing and rehabilitation will allow retention of sufficient native bush to allow adequate nesting of small native animals.

Limited hand pulling of weeds does take place as required. As a matter of policy WCL do not spray to kill weeds in bush rehabilitation areas.

WCL has recognised the presence of Quenda in the area as part of the regional population, but the majority is based on the river flats area.

Since 85% of the Darling Botanical District is reserved for forest controlled by CALM (ref CER 4.6.1) WCL does not accept the lack of alternate fauna release sites. On the same principle WCL believes the progressive mining and rehabilitation programme plus the adjacent similar bushland will resolve the problems of displaced wildlife needs.

WCL experience on rehabilitation areas is that bird life increases as more feeding material is available. Major road vehicle activity does not account for many animal deaths. Local roads indicate a similar or higher mortality rate.

Roads

Acknowledging that current access to property may be changed due to road changes, WCL in consultation with M.R.D. and the Collie Shire as necessary will maintain access and minimise inconvenience as far as possible.

Shotts privacy should not be affected by road realignment and mine access. If a tourist lookout is placed then it will be away from Shotts. WCL cannot prevent the public entering Shotts.

Many trees will be retained, as well as others planted on rehabilitation areas and bare ground between Shotts and the mine. These will act as a buffer. It is not WCL's policy to clear the mature trees between Shotts and the mine unless it is absolutely necessary (see previous comments re buffers).

Safety

Immediate access from the Shotts area will need to be restricted with placement of a fence or the like. Coal mines are common in this area and aspects of this extension will follow the existing mine operation safety pattern which is locally accepted.

Information Provision

The CER is an indicative document; it is neither feasible or practical to produce ongoing changes of plans that may occur. The principle and concept as laid down in the CER will be adhered to, despite time period changes that may occur.

The public review period was extended. WCL was represented during all of the public viewing period. K. Pitts was present from 9.00am until 5.45pm except for 20 minutes lunch time during which M. Pegrum and P. Ashton were present.

Arbitration

This is not a CER subject, but WCL has undertaken compensation for demonstrable effects which are company responsibility. Legal issues are not the responsibility of WCL as far as their management and operation is concerned.

Pipeline

Further pipelines will go from the borefield to the existing SECWA pipeline and the new power station. The exact routes can only be determined when the detailed hydrological investigations have been undertaken and dewatering pump placement determined.

Lifestyle

WCL will not be mining any farm land that it does not own or have rights to. Other areas of lifestyle are difficult to assess in respect of the mine's effect. However we repeat that the Shotts area is a designated mining lease.

Subsidence

Regular inspection of the area will be undertaken to make sure dewatering is not having an adverse effect. Piezometers can be placed in areas to check groundwater levels. Any adverse effect due to subsidence will be initially safety fenced with subsequent remedial action as per WCL current programmes.

Buffer Zone

There is inadequate distance from the mine to the Shotts boundary to place any sizeable buffer zone. The placement of the crusher is being reconsidered. Since the prime land use of the Collie Basin is coal extraction and the Shotts area is a designated mining lease any coal sterilisation would be improper which effectively reduces the buffer zone size.

Infrastructure

South West Regional Planning takes into account infrastructure requirements of the Collie Shire including new mines and other industrial developments.

CONSERVATION COUNCIL

The CER was intended to give an overview of existing and proposed WCL policies and practices. The lease area and mining area are shown in the report. Mining limits are shown on maps on page 20-23 and page 39. The quality of the area has been stated because the surveys undertaken noted the alternate uses and the heavily logged status. The area has been designated primarily as a coal mine under land use criteria.

No rare or endangered faunal species have been identified from the research undertaken (CALM confirm this). If such are subsequently found then discussions will be undertaken with CALM to determine action required.

Recognising the use of the Premier area for fauna release WCL notes 85% of the adjacent Darling Botanical District is reserved for forestry reserve which offers a considerable range of similar habitat for such release programmes.

Mining will clear a relatively small portion of the existing habitat at any one time. Rehabilitation of the dumps and backfill will allow wild life to repopulate as has been the case elsewhere e.g. Western 5 open-cut. Ongoing rehabilitation will be undertaken quickly to achieve maximum regrowth of local bush.

WCL have a proven successful record in bushland rehabilitation, confirmed by Collie Coal Mines Rehabilitation Committee. Members of the Conservation Council have personally viewed WCL development and made positive comments.

Water removal is a necessary part of safe mining with removed water to be used for power station supply as per Government strategy.

The AGC Woodward Clyde report indicates that the surface aquifers are not adversely affected by groundwater drawdown. Monitoring of water levels with piezometers will be undertaken and that information will be given to WAWA.

A small ephemeral wetland exists on farmland at the northern end of the lease, which will necessarily be dewatered during mining. Rehabilitation to existing drainage pattern will allow the re-establishment of this if the land holder and Government regard such action as desirable at the time.

CALM have stated that no endangered species exist in the mine area and WCL concur with this finding from biological surveys carried out to date. WCL have detailed their proven rehabilitation procedures and design of dumps will be undertaken using those procedures. Variation to plans may be required over time to cover unknowns such as overburden swell factors. WCL do not believe that final land forms for such a long term project are feasible and therefore some change may be required from time to time in the detail of plans.

Water is a secondary use in the basin and WCL have acted with the full knowledge of WAWA, in accordance with the Collie Coal Basin Water Management Strategy, July 1988.

MINES DEPARTMENT

WCL concur with Mines Department statements.

Mine Development

WCL will undertake to present triennial rehabilitation reports and annual reports in accordance with WCL Coal Mining Agreement Act, in addition to the mandatory mine planning proposals.

Groundwater

Further work is underway in respect to groundwater extraction rates. This information will be given to WAWA as is the current practice. WCL agree with comments made.

Blasting

WCL will monitor the effect of blasting so that damage will not occur. All blasting will be carried out according to the Coal Mines Regulation Act with the advice from the Department of Mines & Energy especially relating to the proposed departmental reporting programme which is separate from the WCL proposal. Ongoing discussions and investigations will be carried out with the Mines Department to ensure this is occurring.

Appendix 2

List of submitters

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Appendix 3

**Western Collieries Ltd
environmental management commitments**

1. Groundwater

1.1 Production

WCL will prepare and subsequently implement a groundwater dewatering and monitoring programme.

WCL will monitor the groundwater abstraction, water quality and the regional drawdown effects from the mine dewatering on other existing licenced groundwater users.

WCL will liaise with the Water Authority of WA regarding regional effects.

WCL will implement remedial action, where necessary for safety reasons, of any areas of subsidence on the Premier mining lease due to the dewatering for the mining operation.

1.2 Monitoring

During the dewatering operation, WCL will monitor the bores to determine abstraction rates and the quality of the water.

During the mining operation, WCL will establish a piezometer bore monitoring programme, in conjunction with the monitoring of other regional bores, to determine the drawdown effect of the dewatering operation. Monitoring results will be submitted annually to the Water Authority of WA.

1.3 Discharge

WCL will provide all water produced by the dewatering operation to the power stations as a priority.

Prior to the discharge of any water to the natural surface drainage systems leading off the lease area, WCL will obtain the written approval of the Water Authority of WA.

If it is necessary to discharge water from the dewatering operation into the natural drainage systems, WCL will comply with discharge criteria set in the licence(s) issued under the Environmental Protection Act, 1986.

2. Surface water

WCL will implement measures, such as settling ponds, silt traps and biological filtration systems, to ensure that the natural drainage systems affected by the mining operation are not significantly adversely affected. Where possible, all drainage systems off rehabilitated areas would be diverted into recognised discharge points.

3. Forest Products

3.1 Large-scale clearing

WCL will apply for clearing permits from the Department of Conservation and Land Management at least 12 months in advance of large-scale (>10 ha) clearing of State Forest areas.

3.2 Small-scale clearing

WCL will apply for clearing permits from the Department of Conservation and Land Management at least 6 months in advance of small-scale (<10 ha) clearing.

4. Dieback

4.1 Mapping

WCL will cooperate with the Department of Conservation and Land Management regarding dieback mapping, access restrictions and hygiene controls in State Forest areas within the lease.

4.2 Management

WCL will implement dieback management measures within the lease area to minimise the spread of dieback disease pathogens, particularly into currently dieback free areas.

5. Blasting

5.1 Blasting damage

WCL will arrange for those living or owning property close to the mine to have a property condition survey prior to mining commencing. The survey will be conducted by an independent third party at WCL's expense.

5.2 Damage repair

Any damage proven to be due to WCL's negligence will be rectified by WCL within three months to the original surveyed or other acceptable standard.

6. Noise

6.1 Monitoring

WCL will conduct noise modelling studies for critical locations surrounding the mine site.

WCL will develop and implement a noise monitoring programme immediately prior to the commencement of mining.

7. Dust

7.1 Monitoring

WCL will develop and implement a dust monitoring programme for dust levels at critical locations (nearest inhabited residences) surrounding the mine site immediately prior to the commencement of mining

7.2 Mitigation measures

WCL will implement reasonable dust mitigation measures to achieve dust levels to the recommended goals of 4 g/m²/month for total particulates and 260 ug/m³ for a 24 hour maximum and 90 ug/m³ for the annual mean.

8. Property valuation

WCL will undertake an independent property valuation of the relevant properties in Shotts and other surrounding areas within 2km of the nearest proposed blasting in the pre-development stage before the commencement of mining.

9. Final void

WCL will design the final void to facilitate its use in accordance with guidelines approved by the relevant authorities at the time.

10. Mine related traffic

WCL will ensure that , except for WCL employees, no WCL mine related traffic will travel through Shotts.

11. Road/rail realignment

11.1 Alignment

WCL will ensure that the realignment of the road and the railway will not bring it any closer to the gazetted Shotts townsite.

11.2 Access

WCL will provide an access route to the existing standard to all properties affected by the road/rail realignment .

12. Interference with communications

WCL will rectify, if technically feasible, any interference to the communications systems of surrounding residents due to the mining operation.

13. Weed control

WCL will liaise with the Department of Conservation and Land Management and the Agriculture Protection Board regarding the control of weed species on the lease area. Control measures such as hand removal and selective herbicides would be used to control weed species which are affecting the success of the rehabilitation programme as deemed necessary.