



Mining and Energy Division

Review of Environmental Assessment

Rocglen Coal Extension Project

No: 10_0015

Submission

Construction Forestry Mining and Energy

Union (Mining and Energy Division)

Northern District Branch

April 2011

On 29 January 2010, Whitehaven Coal Mining Pty Ltd applied to the Minister, Department of Planning seeking approval to expand operations at the company's Rocglen coal mine in the Gunnedah Basin. This Project Application for the Rocglen Mine is sought under Part 3A of the EP&A Act.

The Director General made the Environmental Assessment publicly available on the 3 March 2011 at the DoP Information Centre Sydney, Gunnedah Shire Council, and Nature Conservation Council Newtown.

The Union is pleased to take the opportunity to comment on the Rocglen Mine proposal and related activities Environmental Assessment.

The Mining and Energy Division is a Division of the CFMEU under the Federal Workplace Relations Act 1996, with over 120,000 members, one of the largest in Australia. The Division covers several industries including the coal industry, coal ports, metalliferous mining industries, electrical power generation, oil and gas and the Nation's small coking industry.

The Northern District Branch of the CFMEU Mining and Energy Division, being the branch that on behalf of the organisation which is making the submission is the principal Union representing coal miners in the Northern District Coalfields of New South Wales. The Mangoola Mine with its site located approximately 25 km north of Gunnedah is wholly within the State's Northern District Coalfields.

The Union is familiar with the Rocglen site and engaged the services of an Environmental Consultant with extensive experience in local government and environmental assessments on coal mining related projects.

After reviewing all the material and taking advice, the Union supports on balance the Rocglen Coal Extension Project.

Project Overview

Following further drilling and definition of local geological features, as well as additional reviews of the mine plan, the proponent proposes to expand mining operations at the Rocglen Coal Mine in order to maximise resource recovery and allow for improved mine progression.

The main objectives of the Rocglen Coal Mine Extension Project are to:

Develop the on-going open cut operations focusing on:

- Maximising resource recovery and maintaining continuity of coal production from the existing Rocglen Coal Mine beyond the currently projected life of mine;
- Maximising the use of existing infrastructure;
- Securing on-going employment opportunities and socio-economic flow-on benefits; and
- Provide additional out-of-pit emplacement area to accommodate overburden material from the existing operations and proposed pit expansion.

It is intended that the Rocglen Extension Project will be fully integrated with the remaining operational life of the current approved Rocglen mine, which will enable the proponent to operate under a single Project Approval over the life of the Project.

The layout of the Project Site as proposed under the Rocglen Extension Project is as follows:

- Expansion of Open Cut Pit - expansion of the open cut pit design limit in order to access up to an additional 5Mt of coal not previously considered in the life of the mine plan. This will increase coal recovery at Rocglen by close to 30 per cent. The footprint of the open cut pit will increase by approximately 50 hectares to a total open cut mined area of approximately 164 hectares. Coal will continue to be extracted from the expanded pit at the approved production rate of 1.5 Mtpa and using the open cut mining methods approved at Rocglen.
- Extension to Life of Mine – it is anticipated that coal extraction activities will occur for approximately 11 years following the issue of Project Approval and the subsequent issue of a new or amended mining lease. This represents an increase to the projected life of mine, for coal extraction, of up to four years.

- Expansion of Northern Emplacement Area – expansion in the footprint and height of the out-of-pit Northern Emplacement Area in order to accommodate a maximum 12 Mbcm. The maximum height design of the expanded emplacement area will be 50 metres above pre-mining landform, which is the approximate height of the adjacent ridge to the west of the Project Site. Early re-profiling and revegetation of the external batter slopes of the emplacement area will be undertaken to minimise visual impacts and limit erosion and down stream sedimentation.
- Replacement of Soil Stockpile Areas – the soil stockpiling areas identified as the Northern and Southern Soil Stockpile Areas will be replaced by the proposed Eastern and Western Soil Stockpile Areas to cater for the expanded open cut pit and Northern Emplacement Area. The material to be relocated will be placed in either proposed new designated soil stockpile areas or placed directly onto areas available for rehabilitation.
- Revised Rehabilitation and Mine Closure – the proponent will continue to adopt a progressive approach to rehabilitation throughout the life of the mine. Of the total anticipated disturbance area of approximately 358 hectares, it is proposed to restore approximately 206 hectares as rehabilitated bushland (58%), 147 hectares as rehabilitated pasture (41%), with the remaining hectares comprising the retained highwall of the final void.
- Revised Biodiversity – a revised Biodiversity Offset Strategy has been prepared to compensate for the Project impacts on a ‘like for like’ basis. The Whitehaven Regional BioBank Site is in the final stages of registration by the DECCW as a BioBank under Part 7A of the Threatened Species Conservation Act 1995.
- Other Minor Project Related Works:
 - Altered surface water management to effectively cater for the expanded operations;
 - Relocation of the Mine Water Dam to cater for the expanded open cut pit;
 - Relocation of a section of Jaeger Lane to cater for the expanded Northern Emplacement Area;
 - Removal of building improvements within the “Glenroc” property which is owned by Whitehaven to cater for the expanded Northern Emplacement Area;

- Relocation of the meteorological station and high volume air sampler located within the “Glenroc” property to elsewhere within or adjacent to the Project Site to ensure adequate separation from the expanded Northern Emplacement Area and optimal operation; and
- Realignment of an existing overhead power line, owned by Country Energy, to ensure adequate separation distances from the expanded Northern Emplacement Area and Eastern Soil Stockpile Area.

Consultation

The proponent has undertaken consultation with local and state government agencies, local Aboriginal groups, the Rocglen Community Consultative Committee, surrounding residents and Country Energy in the preparation of their EA.

The Project Site is located in an area that is removed from any urban areas and has a relatively low density of surrounding residences; with the nearest non-Project related dwelling located in excess of 2.8 km from the Project Site.

The Rocglen Community Consultative Committee has been provided with briefings regarding the Project on 11 November 2009, 10 February 2010, 12 May 2010 and 10 November 2010. No reportable outcomes or issues emanated from these Community Consultative Committee briefings.

Community newsletters were distributed in March 2010 and July 2010 to surrounding privately-owned residences.

The newsletters were also distributed to the residences located within the surrounding properties owned by Whitehaven which were deemed project-related.

There were no reportable outcomes or issues emanating from the community newsletters, with the proponent not receiving any subsequent enquiries from these, or other residents.

Consultation with Aboriginal stakeholders was undertaken in accordance with the DECCWs 2004 Interim Community Consultation Requirements (ICCRs).

There were 12 Aboriginal stakeholder groups that registered an interest in consultation for the Project following the advertisement and notification process which commenced in January 2010 under Stage 1 of the ICCRs.

Letters in accordance with Stage 2 of the ICCRs were sent to the registered stakeholders advising of the survey and detailing the proposed survey methodology. Four of these groups participated in the field survey that was undertaken on the 2 March 2010.

Consultation was also undertaken with Country Energy in November 2009 seeking advice on the preferred route for the realignment of an existing overhead power line to make way for the expanded Northern Emplacement Area. Country Energy, via email and correspondence, has provided the preferred realignment along with advice related to easement requirements.

Air Quality

Consultants PAE Holmes undertook an air quality assessment for the Rocglen Extension Project.

Total dust emissions due to proposed mining operations were estimated by analysing the activities that had taken place at the site during three mine plan scenarios. While annual production remains constant throughout the life of the mine, the amount of overburden waste generated varies significantly from year to year, as does the surface area of exposed pit and emplacement areas. The three scenarios are:

- Year 1 of expanded operation – represent the period when the in-pit mining activities are closest to the northern residences;
- Year 5 of expanded operation – represent the year when the expanded Northern Emplacement Area will reach its peak exposed surface area, and there will still be haulage and placement at that location; and
- Year 10 of expanded operation – representing the year when activities are close to the southern residences and the overburden extraction rate is at its peak.

Annual Average Model Predictions

Air Quality Modelling Predictions Year 1

Property Identification		Annual PM ₁₀ Roeglen (plus background) (µg/m ³)	Annual TSP Roeglen (plus background) (µg/m ³)	Dust Deposition (g/m ² /month)	
Name	Ownership			Roeglen Only	Cumulative
Criteria		30	90	2	4
Non-mining background		21	53	NA	1.2
1 "Roseglaz"	Private	2(23)	2(55)	0.02	1.2
2 "Costa Vale"	Whitehaven	3(24)	4(57)	0.09	1.3
3 "Yarrawonga"	Whitehaven	8(29)	10(63)	0.67	1.9
5 "Yarral"	Whitehaven	4(25)	5(58)	0.09	1.3
6 "Belah"	Whitehaven	7(28)	7(60)	0.16	1.4
7 "Stratford"	Whitehaven	1(22)	2(55)	0.04	1.2
8 "Roseberry"	Private ¹	2(23)	2(55)	0.05	1.3
9 "Surrey"	Private	3(24)	3(56)	0.05	1.3
10 "Carlton"	Private	2(23)	2(55)	0.04	1.2
11 "Wundarra Stud"	Private	1(22)	1(54)	0.03	1.2
12 "Broga"	Private	1(22)	1(54)	0.01	1.2
13 "Braemar"	Private	1(22)	1(54)	0.01	1.2

1 - "Roseberry" is subject to a negotiated private agreement between the landholder and Whitehaven.

Air Quality Modelling Predictions Year 5

Property Identification		Annual PM ₁₀ Roeglen (plus background) (µg/m ³)	Annual TSP Roeglen (plus background) (µg/m ³)	Dust Deposition (g/m ² /month)	
Name	Ownership			Roeglen Only	Cumulative
Criteria		30	90	2	4
Non-mining background		21	53	NA	1.2
1 "Roseglaz"	Private	2(23)	2(55)	0.03	1.2
2 "Costa Vale"	Whitehaven	3(24)	3(56)	0.10	1.3
3 "Yarrawonga"	Whitehaven	7(28)	9(62)	0.89	1.9
5 "Yarral"	Whitehaven	4(25)	4(57)	0.10	1.9
6 "Belah"	Whitehaven	7(28)	7(60)	0.19	1.4
7 "Stratford"	Whitehaven	2(23)	2(55)	0.05	1.2
8 "Roseberry"	Private ¹	3(24)	3(56)	0.09	1.3
9 "Surrey"	Private	3(24)	3(56)	0.06	1.3
10 "Carlton"	Private	2(23)	2(55)	0.05	1.2
11 "Wundarra Stud"	Private	1(22)	1(54)	0.03	1.2
12 "Broga"	Private	1(22)	1(54)	0.01	1.2
13 "Braemar"	Private	1(22)	1(54)	0.02	1.2

1 - "Roseberry" is subject to a negotiated private agreement between the landholder and Whitehaven.

Air Quality Modelling Predictions Year 10

Property Identification		Annual PM ₁₀ Rocglen (plus background) (µg/m ³)	Annual TSP Rocglen (plus background) (µg/m ³)	Dust Deposition (g/m ² /month)	
Name	Ownership			Rocglen Only	Cumulative
Criteria		30	90	2	4
Non-mining background		21	53	N/A	1.2
1 "Rozengass"	Private	2(23)	2(55)	0.03	1.2
2 "Costa Vale"	Whitehaven	3(24)	3(56)	0.07	1.3
3 "Yarawonga"	Whitehaven	6(27)	7(60)	0.50	1.7
5 "Yareel"	Whitehaven	5(26)	5(58)	0.11	1.3
6 "Selah"	Whitehaven	5(25)	5(52)	0.20	1.4
7 "Stanford"	Whitehaven	2(23)	2(55)	0.07	1.3
8 "Roseberry"	Private	3(24)	4(57)	0.10	1.3
9 "Surrey"	Private	4(25)	4(57)	0.10	1.3
10 "Cudston"	Private	3(24)	3(56)	0.06	1.3
11 "Wandana Stud"	Private	1(22)	2(55)	0.03	1.2
12 "Broiga"	Private	1(22)	1(54)	0.02	1.2
13 "Braemar"	Private	1(22)	1(54)	0.02	1.2

1- "Roseberry" is subject to a registered private agreement between the landholder and Whitehaven.

The modelled predictions for the expanded operations indicate acceptable air quality impact at all privately-owned residences throughout the life of the mine.

- Predicated annual average PM₁₀ concentrations – predicted annual PM₁₀ concentrations from the Rocglen operations in Years 1,5 and 10 respectively, including the estimated background of 21µg/m³, should not exceed the DECCW's 30µg/m³ criterion at any of the nearest residences;
- Predicted annual average TSP concentrations – predicted annual average TSP concentrations from the Rocglen operations in Years 1,5 and 10 respectively, including the estimated background of 53 µg/m³, should not exceed the DECCW's 90 µg/m³ criterion at any of the nearest residences;
- Predicted annual average dust deposition for Rocglen only – predicted annual average dust deposition rates for Rocglen operations alone in Years 1,5 and 10 respectively, should not exceed the 2g/m²/month criterion at any of the nearest residences; and
- Predicted annual average cumulative dust deposition – predicted annual average dust deposition rates for Rocglen operations in Year 1,5 and 10 respectively, including the estimated background of 1.2 g/m²/month, should not exceed the 4 g/m²/month at any of the nearest residences.

In relation to predicted maximum 24-hour average PM₁₀ concentrations at nearby residences. The Yarrowonga and Belah residences are the only ones predicted to exceed the DECCWs criterion of 50 µg/m³.

Maximum Predicted 24-hour Average PM₁₀ Concentrations

Property Identification		Maximum Predicted 24-Hour Average PM ₁₀ Concentration (µg/m ³)		
Name	Ownership	Year 1	Year 5	Year 10
Criteria		50	50	50
1 "Roseglades"	Private	88	8	11
2 "Costa Vale"	Whitehaven	21	15	16
3 "Yarrowonga"	Whitehaven	64	30	33
5 "Yaree"	Whitehaven	27	19	42
6 "Belah"	Whitehaven	34	29	60
7 "Stratford"	Whitehaven	16	16	22
8 "Roseberry"	Private	23	26	29
9 "Surrey"	Private	19	20	28
10 "Culler"	Private	12	12	17
11 "Mandara Staff"	Private	10	11	14
12 "Gedga"	Private	7	9	14
13 "Braemar"	Private	7	7	9

1 - "Roseberry" is subject to a negotiated private agreement between the landholder and Whitehaven.

Analysis conducted on the Yarrowonga and Belah properties determined that the 50 µg/m³ criterion would be exceeded on 32 occasions and four occasions respectively. However, both of these properties are already owned by Whitehaven and as such the acquisition criterion is irrelevant.

While the dispersion modelling predicts acceptable air quality impacts at all privately-owned residences throughout the life of the mine, the proponent will continue to take reasonable and practicable measures to prevent or minimise the generation and dispersal of particulate matter.

The existing Air Quality Monitoring Program will be reviewed, and as necessary revised to reflect the expanded mine operation and evaluate compliance with the applicable air quality assessment criteria.

The proponent will install and operate a real-time PM₁₀ monitor. As recommended by consultants PAE Holmes, it is proposed to locate this monitor at the "Roseberry" residence, co-located within one of the existing HVAS. This will enable comparisons

between both monitors and also provide real-time information for the majority of privately owned residences, which are to the south of the mine.

The existing weather station and HVAS within the “Glenroc” property will be relocated to make way for the expanded Northern Emplacement Area and ensure appropriate operation. As recommended by PAE Holmes it is proposed to move these items to “Costa Vale” in conjunction with that to be measured at “Roseberry” as it will assist in determining likely sources of airborne dust on worst-case days and enable more effective management of mining activities.

Noise

Consultants Spectrum Acoustics undertook an assessment of operational noise levels and off-site road traffic noise levels associated with the Rocglen Extension Project.

Noise models were generated for each of the following operational scenarios considered to be the worst case in terms of noise generation and potential impacts.

- Year 1 of expanded operation – all overburden going to the expanded Northern Emplacement Area at approximately 330 metres AHD, 24 hours. Top soil placement on the northern face of Northern Emplacement Area and spreading by dozer, occurring daytime only.
- Year 5 of expanded operation – all overburden going to southern edge of the expanded Northern Emplacement Area at approximately 310 metres AHD, 24 hours. Topsoil placement on the top of both the Northern and Western Emplacement Areas and spreading by dozer, occurring daytime only.
- Year 10 of expanded operation – overburden being placed in the south-western extent of the pit where coal extraction has been completed and on the eastern face of Western Emplacement Area at approximately 320 metres AHD, 24 hours. Top soil placement on the southern face of the Western Emplacement Area and spreading by dozer, occurring daytime only.

For each of these scenarios, ROM coal haulage, processing and product haulage has been included within the modelling as occurring over the full 24 hours. However there is no change proposed to off-site product haulage, which will remain between 7.00am and 9.15pm Monday to Friday and between 7.00am and 5.15pm Saturdays.

Exceedance of the criterion have been predicted at 'Costa Vale' during Year 1, with the primary contributing noise sources being trucks depositing overburden on the expanded Northern Emplacement Area and, to a lesser extent, top soil spreading activities (daytime only). Noise mitigation to achieve compliance at 'Costa Vale' would require all trucks to be retro-fitted with attenuator packages. The proponent indicates that while this may be technically feasible, it would be impractical given the large cost involved and the fact that 'Costa Vale' is now owned by Whitehaven and as such is considered by Whitehaven to be project-related.

Minor criterion exceedances are again predicted at 'Costa Vale' during Year 5 under adverse conditions. No exceedances of the criterion are predicted at any receiver for the 10 year scenario.

In relation to potential sleep disturbance impacts, consultants Spectrum Acoustics advise that to assess the impact on potential sleep disturbance during night time hours, the maximum noise levels at the nearest or potentially worst impacted receiver for each component of the project are compared to background levels in the area. If the maximum noise levels exceed the background level by more than 15 dB, further consideration of potential disturbance to sleep is required including the nature and level of ambient noise in the area.

The most impacted receiver in the Year 1 scenario, apart from 'Costa Vale', is 'Retreat' to the north of the site. Maximum noise levels estimated from individual sources at 'Retreat' are more than 10 dB below the 45 dB(A) sleep disturbance 'screening' level and are also no greater than the total LAeq level from the entire mine.

Potential off-site road traffic impacts at the nearest receiver to the public road section of the coal haul route between Rocglen and the Whitehaven CHPP is 'Brooklyn', which is set back from Blue Vale Road approximately 70 metres and is located several kilometres south of the intersection with Shannon Harbour Road. Coal trucks from the Tarrawonga and Rocglen mines all pass this receiver.

The Project will not alter the total number of trucks passing 'Brooklyn' and therefore off-site traffic noise levels are expected to remain compliant with the applicable criterion.

While noise modelling predicts acceptable noise impacts at all privately owned residences throughout the life of the mine. The proponent details a commitment to continue taking reasonable and practicable measures to prevent or minimise noise generation and propagation.

The external batter slopes of the expanded Northern Emplacement Area will be reshaped and revegetated in Years 1 & 2 of the expanded operation to minimise the projection of noise from overburden transportation and emplacement activities towards privately owned residences located to the north and north-east later in the mine life.

Furthermore Whitehaven will undertake routine consultations with residents surrounding Rocglen and along the transport route, as well as with the Community Consultation Committee, to ensure any concerns relating to operational or traffic noise are addressed.

Blasting and Vibration

Consultants Spectrum Acoustics have also undertaken an assessment of ground vibration and air blast overpressure for the Rocglen Extension Project.

Historical blast monitoring results indicate no exceedances of either the applicable ground vibration or blast overpressure criteria at the nearest residences surrounding the Project site. On this basis, consultants Spectrum Acoustics conclude that no significant blasting impacts are expected as a result of the Rocglen Project Extension.

Whitehaven indicate that since coal production commenced at Rocglen in late 2008, there has only been one occasion when complaints were received about blasting. On 24 April 2009, the proponent received four separate complaints from residences in relation to vibration and loud bang at their residences.

As a result of the complaints and Orica's report, Whitehaven now ensures that meteorological conditions are analysed prior to blasting to avoid times when the potential for impact is heightened.

Surface Water

Consultants GSSE undertook a surface water assessment for the Rocglen Extension Project, requiring a site wide approach and the re-development of a suitable surface water management system for the expanded operation.

A detailed daily time step water balance indicates that the site has adequate water supply primarily through the rainfall runoff captured in sediment basins, which can be supplemented through the use of bore water when required. Overall the calculations indicate that the site will be relatively well balanced.

The model indicates that use of bore water is highly dependent on the water management practices adopted. Assuming controlled discharge is undertaken to draw down the dirty water dams, the typical bore water usage will be 40 to 50 mega litres per year and will be within the licensed entitlement of 120 ML/year.

The model indicates that the number of overflow discharges is also highly dependent on the water management practices adopted. Assuming controlled discharge is undertaken, likely average annual overflow discharges of one day is expected, which will occur under extreme rainfall events. In practice the mine pit would provide substantial additional on-site storage, which would reduce the potential for overflow discharge to occur.

A new Site Water Management Plan will be prepared in accordance with regulatory requirements and conditions of consent. Key changes to be integrated into the existing surface water management system are:

- Additional water management controls to deal with water from the increased disturbance footprint in the northern area of the site;
- Additional water management controls to address total suspended solids issues during wet weather discharge;
- Relocation of the Mine Water Dam; and

- More effective diversion of clean water from off-site catchments to the east.

To protect the quality of local surface water resources, the proponent will continue to employ mitigation measures for the Rocglen Extension Project.

In addition to the monitoring required under the site's EPL surface water monitoring is proposed for internal dams within the Project Site. The additional monitoring will allow the performance of the surface water management system to be assessed and enable implementation of additional controls if required. It will also allow for the monitoring of salt and alkalinity in dams collecting water from subsoils.

Whitehaven detail whilst the continuation of water quality monitoring is recommended for the site, the establishment of volumetric flow monitoring at the Driggle Draggie Creek monitoring point and the southern drainage channel monitoring is not warranted. These drainage lines are ephemeral and do not flow regularly enough to warrant the establishment and maintenance of flow gauging stations within those drainage lines.

Groundwater

Consultants Douglas Partners were commissioned by the proponent to address groundwater issues associated with the Rocglen Extension Project.

Drilling of coal exploration bores has noted that groundwater is mainly limited to the coal seams, which is considered to be the main aquifer zone within the Maules Creek Formation sequence.

Contoured groundwater levels across the area prior to the commencement of mining, based on the current monitoring wells, suggests that the groundwater table is a subdued reflection of topography, and that groundwater flows from elevated areas east of the mine westward towards the Namoi River.

Groundwater levels show that recharge of the groundwater system in the vicinity of Rocglen is poor. No significant groundwater levels will rise in response to rainfall events. This is apparent from hydrograph analysis.

Previous environmental assessments have reported no groundwater dependent ecosystems having been identified on or immediately surrounding the Project Site. Given groundwater dependent ecosystems are typically associated with groundwater discharge zones, which are not present on or surrounding the Project Site, it is unlikely that the Project would impact on any groundwater dependent ecosystems.

Numerical models were used to simulate flow rates and drawdown in order to assess likely impacts of the Rocglen mine to the end of mine life. The mining sequence was split into two periods:

- Northern Mining Phase – to simulate mining in the northern parts of the pits anticipated to be from 2008 to Year 5 of the expanded operation, which is expected to be around 2015; and
- Southern Mining Phase – to simulate mining in the southern parts of the pits anticipated to be from Year 5 to Year 10/11 of the expanded operation, which is expected to be around 2015 to 2020.

Modelling indicates high drawdown in close proximity to the mine site, up to approximately 30 metres, with relatively low impacts to the east of the faulting. The predicted impacts on the alluvium are also low, however are slightly higher in the alluvium immediately south of the pit in the case that a permeable fault was present to the west of the site. The extent of impacts on the groundwater head are expected to be less than previously predicted by RCA Australia (2007) for areas outside of the area of faulting.

Flow rates are generally expected to decrease as mining continues in the northern end of the pit, however are expected to increase as the mining progresses to the south, due to the increased area of the pit and because the flow is less restricted by faulting to the north. The variations in flow between the various years will be less distinct than those predicted as the modelling assumed three distinct stages of mining, however in reality the sequencing will be gradual.

The predicted impact on flows to the alluvium is minor as most flow comes from storage, however as the life of the mine increases the influence of storage reduces and the impact of flows to the alluvium increases slightly. Impacts on storage in the

alluvium occur in close proximity to the mine and the percentage contribution to the inflow to the mine from storage depends on the presence of permeable faulting to the west of the site.

The range of possible inflows to the pit, based on credible ranges, range from 1.057 to 3.381 m³/day. It is unlikely that the annual flow rates into the pit will exceed the existing groundwater interference licence of 700 ML/year. It is noted however that there is some uncertainty in the site conditions; in particular to the south west of the site, and flows greater than 700 ML/year may be possible if adverse conditions occur. Therefore a robust on-going monitoring program and updating of the predictive model are recommended as mining continues.

It is expected that once mining is complete, recharge of groundwater and rainfall infiltration into the final void will result in the formation of a water table within the backfill. It is likely that this will eventually lead to the formation of surface water in the southern part of the pit with the locally deeper final surface level. The inflow to the pit will be offset by evaporation from the area of surface water and therefore it is estimated that the final equilibrium water levels may take 20 to 50 years to occur and would also be subject to variations according to climatic conditions.

The existing groundwater management strategies, mitigation measures and monitoring activities employed at Rocglen will continue to be implemented for the Rocglen Extension Project. Additional actions recommended by consultants Douglas Partners to improve monitoring outcomes will also be implemented.

Flora and Fauna

Consultants RPS (2010) were engaged to undertake a flora and fauna assessment of the Rocglen Extension Project Site.

Previous flora survey undertaken by Geoff Cunningham Natural Resource Consultants mapped five vegetation communities within the Rocglen study area. These being:

- Narrow-leaf Ironbark – Pilliga Grey Box Community;
- Pilliga Grey Box – White Cypress Pine Community;

- Pilliga Grey Box – White Box – Yellow Box – White Cypress Pine Community;
- Brigalow Community;
- Cleared Lands – used for grazing and/or cultivation.

The previous fauna survey within the Rocglen study area undertaken by Countrywide Ecological Service (2007) found the following threatened species on-site:

- Grey Falcon (*Falco hypoleucos*);
- Gilbert's Whistler (*Pachycephala inornate*);
- Grey-crowned Babbler (*Pomatostomus temporalis*);
- Turquoise Parrot (*Neophema pulchella*);
- Hooded Robin (*Melanodryas cucullate*);
- Beccaris Mastiff-bat (*Mormopterus beccaril*); and
- Yellow-bellied Sheath-tail-bat (*Saccolaimus flaviventris*).

The assessment for these species found that there was no significant impact likely to occur as a result of the proposed mine.

It is expected that the Project will result in the removal of 5.9 hectares of the White Box Yellow Box Blakely's Red Gum Woodland Endangered Ecological Community (EEC) along Wean Road and Jaeger Lane, and 10.9 hectares of derived native grassland of the EEC from within the Project Site. Habitat critical to the survival of this EEC has not been gazetted within the TSC Act or Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act). Therefore the Project is not likely to impact on any habitat critical to this community.

The importance of the patch of White Box Yellow Box Blakely's Red Gum Woodland EEC to be removed is considered to be 'medium'. The Project is not expected to extensively modify abiotic factors such as ground or surface water levels. The revised Biodiversity Offset Strategy for the Project provides a 'maintain or improve' outcome for the removal of this vegetation community.

Suitable habitat for two cryptic threatened flora species, Finger Panic Grass (*Digitaria porrecta*) and Tricolour Diuris (*Diuris sheaffiana*) may occur in the local area. Surveys for Tricolour Diuris during the flowering period were not possible; however

the proposed removal of a small area of 'moderate' potential habitat relative to the availability of nearby similar habitat areas would be unlikely to significantly impact the species.

No threatened flora species were observed within the Project Site, and it is therefore considered that the Rocglen Extension Project will not have any significant effect on locally occurring threatened flora species.

Potential Fauna Impacts

While the removal of forest and woodland vegetation from the Project Site would displace a group of Grey-crowned Babblers and reduce the foraging area for one or more groups of Speckled Warblers, suitable areas of similar habitat occur within the adjacent 'Yarrowonga' property. Both the Grey-crowned Babblers and Speckled Warblers were recorded on 'Yarrowonga'.

The Varied Sittella and Diamond Firetail were recorded on 'Yarrowonga' and likely to also utilise the Project Site forest and woodland vegetation. Both species would be unlikely to be significantly affected by the Project due to the large amount of similar vegetation occurring on 'Yarrowonga' and in Vickery State Forest.

The Project would be unlikely to significantly affect any threatened, migratory or protected fauna species occurring within the Project Site.

Biodiversity Offset Strategy

Consultants ELA were engaged by the proponent to prepare a revised Biodiversity Offset Strategy that meets the offset requirements for an approval under the EP & A Act and the EPBC Act.

The proposed Biodiversity Offset Strategy compensates for the direct loss of 95.44 hectares of vegetation in various condition states and replacement offsets for impacts to 47.9 hectares of the 131.74 hectares of approved offsets on a 'like for like' basis with over 525 hectares of vegetation in the Whitehaven Regional BioBank Site. The Biodiversity Offset Strategy provides an offset (525 hectares) to impact (110.44 hectares comprising 95.44 hectares of impacts for mine extension and the equivalent

of 15 hectares of original impacts which now needs a replacement offset) ratio of 4.75:1.

According to the proponent improvements in conservation values at the Whitehaven Regional BioBank Site will lead to an 'improve and maintain' conservation outcome.

Aboriginal Heritage

An assessment of Aboriginal cultural heritage issues associated with the Rocglen Extension Project was undertaken by consultants RPS (2010). Consultation with Aboriginal stakeholders was in accordance with the NSW Dept of Environment, Climate Change and Water's 2004 ICCRs.

Field surveys identified three stone artefacts within the Project Site, comprising one isolated find and two artefact scatters. In addition, two scarred trees identified on the DECCW's Aboriginal Heritage Information Management System, are located on the eastern road reserve of Wean Road.

All efforts will be made by the proponent to minimise disturbance within the Project Site. The site already operates under an ACHMP prepared by Whitehaven, which employs a range of management strategies and mitigation measures.

If impact to the three stone artefacts identified within the Project Site is unavoidable, a surface salvage will be undertaken in accordance with Section 3 of the ACHMP. Artefacts salvaged will be transferred to relevant Aboriginal groups under a Care and Control Permit under Section 85A of the NP&W Act.

The proponent has restricted the proposed mine extension in this area and has committed to ensuring that no disturbance to the scarred trees or immediate surround will occur as a result of the Project.

European Heritage

An assessment of European heritage issues associated with the Rocglen Extension Project was undertaken by consultants RPS (2010).

The area has a history of pastoral use based on sheep and cattle grazing. There is potential for cultural remains from early or significant dwellings and farming structures such as sheds fences and stockyards.

The unoccupied residence of the "Glenroc" property is in the northern sector of the Project Site. The residence, associated outbuildings, fences and structures were inspected by RPS to determine if they were of heritage significance.

There are no known potential historic or archaeological elements in proximity of the Project Site.

The Rocglen Extension Project proposes the removal of the 'Glenroc' outbuildings within the northern extent of the Project Site in order to cater for expanded Northern Emplacement Area. It is also likely that the unoccupied 'Glenroc' residence further to the north, while outside of the proposed disturbance areas, will also be removed.

Consultants RPS concluded that the 'Glenroc' residence and associated outbuildings are not considered to have any historic significance. No other items of heritage significance were observed by consultants.

Visual Amenity

Consultants GSSE have undertaken a visual amenity assessment considering the post-mining outlooks from five residences in close proximity to the mine.

The Project Site is located in an area that is removed from any urban areas and has a relatively low density of surrounding residences. The 'Retreat' and 'Penryn' are the closest privately owned residences to the north at approximately 4 km from the expanded Northern Emplacement Area, and 'Surrey' to be the closest residence to the south at approximately 3.2km from the approved Western Emplacement Area.

The impact of the Rocglen Extension Project on the visual amenity of the local area is considered to be low and acceptable. While the existing topography and remnant vegetation generally contained within the road reserves around the Project Site offer natural screening, distant views of the expanded Northern Emplacement Area will be

seen from surrounding residences. There is no additional coal handling or significant infrastructure improvements proposed.

Early re-shaping and revegetation of the external batter slopes of the emplacement area will be undertaken in Years 1 and 2 of the expanded operation to, amongst other things, minimise visual impacts. While the expanded Northern Emplacement will extend above the tree line, the post-mining landform is expected to be consistent with the ridgeline contained within the Victory State Forest and, as such, when fully revegetated, it will not present a significant impact on the visual amenity of the area.

Traffic and Transport

All coal mined at Rocglen will continue to be transported approximately 30km by road to the Whitehaven CHPP, for selective washing, stockpiling and dispatch by rail to the Port of Newcastle.

The Project does not involve any change to the coal production rate, transport fleet, hours of coal haulage or coal haulage route used between Rocglen and the Whitehaven CHPP. On this basis, the Project does not pose any additional annual impacts upon the local road network or traffic volumes, nor does it pose any additional conflict with other road users.

Socio Economic Consideration

While the Project does not involve any change to the coal production rate or employment, it is anticipated that the Project will enable open cut mining for approximately 11 years. This represents an increase to the projected life of the mine, for coal extraction, of up to four years.

The proponent details a commitment to the principles of ESD and understands that social, economic and environmental objectives are interdependent. Whitehaven also acknowledges that a well designed and effectively managed operation will avoid significant and/or costly environmental impact or degradation. The suite of environmental management plans and monitoring programs have been designed to demonstrate environmental due diligence and to implement procedures that provide

on-going management and monitoring of the Rocglen operation in line with the overall objectives of ESD.

In Summation

An evaluation of the proposed Rocglen Project Extension has been undertaken by comparing environmental risks against the currently approved project, in conjunction with the Proponents commitment for controls, safeguards or mitigation measures.

Based on comparative analysis of the key elements detailed in the Rocglen Coal Mine Statement of Environmental Effects, it is considered the Project Extension does not pose any notable social impacts over and above those assessed and approved. It is considered the Project Extension builds on those attributes of the existing project approval.

The Union on balance supports the Rocglen Project Extension, application number 10_0015.

A handwritten signature in black ink, appearing to read 'Grahame Kelly', written in a cursive style.

Grahame Kelly
DISTRICT SECRETARY