

Introduction

This Statement of Environmental Effects has been prepared to accompany an application by Werris Creek Coal Pty Limited ("the Applicant") to modify the area of mining for the next 3 years of operations, the rail load-out facility and water storage facilities within the Werris Creek Coal Mine ("the mine").

Figure A illustrates the proposed modifications, which comprises the following component activities.

- Widening the advancing northern highwall of the open cut area. This would require intersection and mining of section of the underground workings of the former Werris Creek Colliery. These workings are currently inundated with water.
- Dewatering the underground workings. The groundwater would be stored in up to four dams to be proposed located to the southwest of the open cut area.
- Increasing the area and height of the out-of-pit overburden emplacement.
- Constructing an additional train loading bin and conveyer at the rail load-out facility.
- Constructing and rehabilitating a modified final landform which accounts for the increased volume of overburden to be removed and additional disturbance to native vegetation on the mine site.

As the Werris Creek Coal Mine would remain substantially the same development as that approved in 2005, the proposed modification is being assessed under Section 96(2) of the *Environmental Planning and Assessment Act 1979*.

It is noted that it is intended that the modification of the development consent applies to April 2012. During this 3 year period, a further northerly extension of the mine will be investigated.

The Proposed Modification

The proposed modification would require modification to, or addition of, the following activities on the mine site.

Modified Mining Operations

The modified open cut area has been determined by the lateral extents of the coal seams within the deposit, ie. the advancing northern highwall has been widened to enable recovery of all coal seams in their entirety. The open cut mine would continue to be developed using conventional haulback methods which would include:

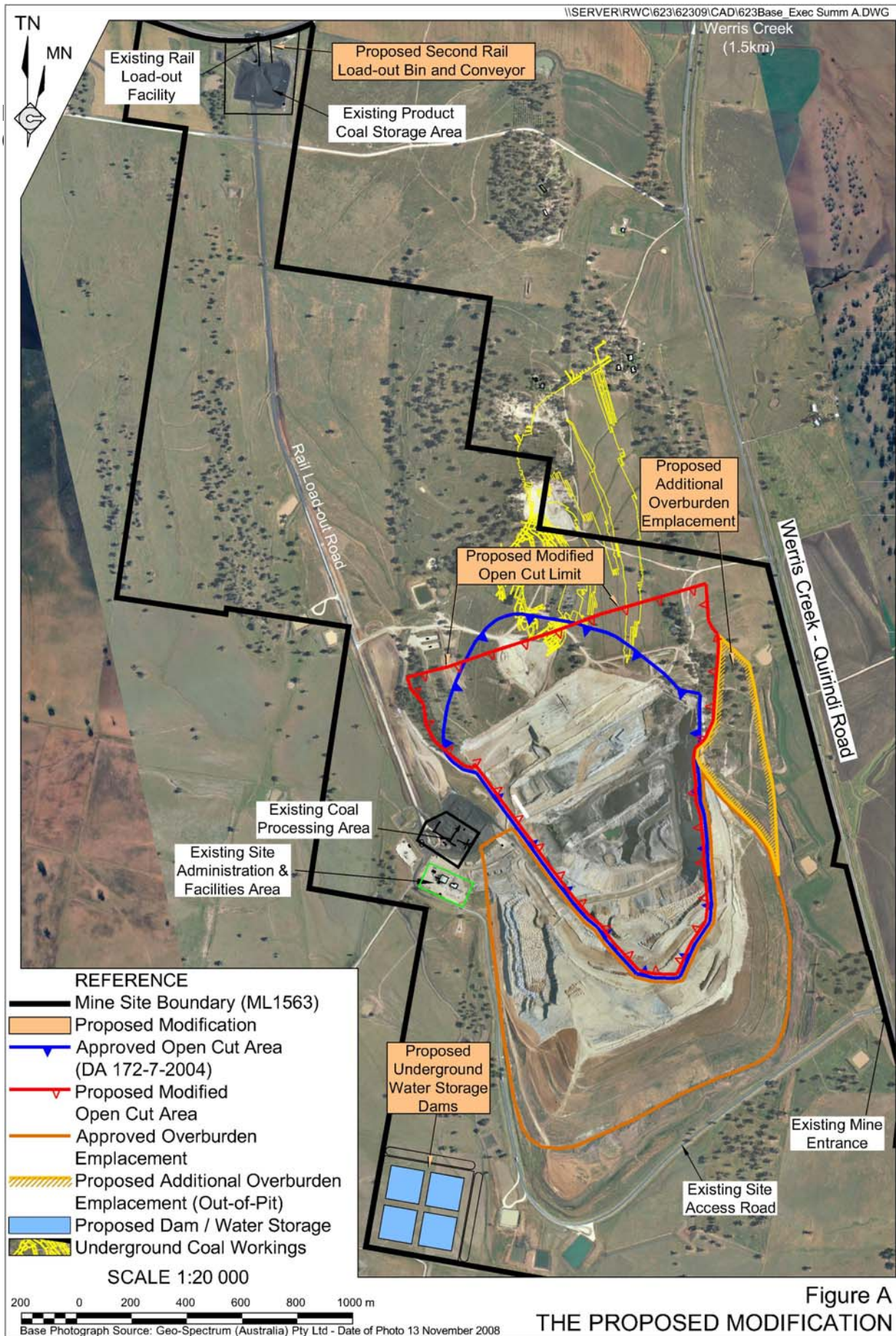
1. the construction of appropriate drainage to divert water around or capture water within the mining area;
2. clearing of vegetation and stripping and stockpiling of soil for future use in rehabilitation;
3. drilling and blasting of overburden above and interburden between the coal seams and transportation to either the in-pit or out-of-pit overburden emplacement; and
4. formation of a series of near horizontal benches from where the exposed coal would be removed for crushing, screening and despatch from the mine site.

As a consequence of the modification to the open cut area, there would be an increase in the volume of overburden and interburden that would be removed. As the increased volume of material exceeds the storage capabilities of the open cut void it is proposed to increase the total footprint (area) and height of the out-of-pit emplacement by approximately 11ha and up to 35m respectively.

The open cut area would continue to be developed in a northerly direction, with individual mining blocks developed in an east-west direction along a series of 100m wide mining strips. Annual production would continue to approximate 1.5Mtpa.

The maximum elevation of the overburden emplacement does not exceed the elevation of the highest point along the existing north-south oriented ridge within the mine site, and would have outer slopes not exceeding 10° which is comparable to the existing ridge. A series of contour banks, similar to those on the existing landform, would be created at approximately 10m vertical intervals on the outer slopes of the emplacement to assist in drainage control.





Underground Workings Dewatering and Water Management

Through a review of the available survey information for the underground workings of the former Werris Creek Colliery, it has been calculated that approximately 330 megalitres of brackish (EC of $<3\,000\mu\text{S}/\text{cm}$) and near neutral pH water must be removed prior to the open cut progressing to within 50m of these workings. Noting this slightly inferior water quality, and similar to the current approach to managing the water that accumulates in the open cut void, it is proposed to store the extracted water in a number of surface water dams (see **Figure A**). These dams would be constructed progressively and have a combined capacity of at least 370ML.

The maximum area that may be disturbed by these dams would be approximately 13ha. The internal wall of each dam would be constructed with the clayey subsoil and compacted to achieve a permeability not exceeding $1 \times 10^{-9}\text{m/s}$. Topsoil removed would be stockpiled on the outer wall of the dams for future use in the rehabilitation of the dams.

Rail Load-out Facility

Coal would continue to be loaded into train wagons via the rail load-out facility on the Werris Creek Siding of the Main Northern Railway Line. In order to increase the efficiency of coal loading, a second loading bin and conveyor would be constructed adjacent to the existing bin and conveyor. The second bin would be of approximately 350t capacity and equivalent height to the existing bin and would be used for loading specific coal products to specially designed trains for the mine's customers. The second loading bin would ensure the different coal products are not mixed prior to loading to the trains but would not require any additional rail movements or additional loading time on the Werris Creek Siding.

Final Landform and Rehabilitation

While the final landform would be of increased elevation, the main features would remain consistent with those currently approved for the Werris Creek Coal Mine.

That is, the final landform would extend from the retained section of a small north-south ridgeline through which the open cut would be partially developed, with a water storage created out of the retained final void. A small area of the final landform would be rehabilitated to provide Class III land for future agriculture on the site, however, the majority of the landform (115ha) would be revegetated with native woodland species and designated as a native vegetation conservation area. This area of native vegetation rehabilitation would be linked to areas of the mine site and surrounding properties included as part of a biodiversity offset strategy for the Werris Creek Coal Mine.

In order to further offset the additional disturbance associated with the proposed modification, an additional area of 32ha, including 20ha of an endangered ecological community, would be added to the Werris Creek Coal Mine biodiversity offset area.

Assessment of Impacts

Vegetation Clearing and Ecology

The modification to the open cut area and overburden emplacement would require disturbance to an additional 25ha of land on the mine site. This includes 8.8ha of an Endangered Ecological Community (EEC).

The impact of the proposed clearing is considered minor as it involves less than 0.5% of the regional distribution the affected EEC. Furthermore, the proposed long-term conservation of the 20ha of this community on the "Railway View" property provides an offset ratio of greater than 2:1, generally considered to satisfy the "no net loss" principle.

Disturbance to Class III Agricultural Land

The underground water storage area may result in the disturbance of up to 13ha of Class III agricultural land.

Given the Applicant proposes to rehabilitate the underground water storage dams to re-establish Class III capability land, the impact of the proposed disturbance would be minimal and temporary.



Water Resources

The proposed modification would require very minimal changes to the current surface water management system and would ensure that the dam capacity of the mine site remains within the “maximum harvestable right”.

As a consequence of the modified open cut area and the dewatering of the underground workings, the following minor changes to impacts on local groundwater resources are predicted to occur.

- The proposed modification may result in a very small ($<0.1\text{m}$) reduction in the groundwater level. When compared to the predicted drawdown of the approved mine it would be practically imperceptible and have negligible impact on the availability of water from bores surrounding the mine site.
- The volume of groundwater flowing within the alluvial aquifer of Quipolly Creek may be slightly reduced over the life of the amended mine (although it is noted that the recharge of water to this aquifer would ultimately increase following the cessation of mining).

The proposed modification would have a practically imperceptible impact on groundwater drawdown and availability.

Noise

Under most conditions, the 35dB(A) noise criteria could be achieved at all non-project related residences. Under certain conditions, exceedances of up to 5dB(A) may be received at the “Cintra” and Zeolite assessment locations, however, notably the noise levels would not exceed 40dB(A), which is within the target range included with existing negotiated agreements with the owners of these properties.

The proposed modification would have an imperceptible impact on local noise levels.

Air Quality

Air quality modelling undertaken for the proposed modification suggests that there may be some increases in dust and particulate matter received at the residences closest to the mine site.

Given the highly conservative nature of the air quality modelling, it is assessed that the impacts of the proposed modification on local air quality would be negligible with deposited dust and PM_{10} concentrations remaining similar to those currently recorded by monthly monitoring.

Visual Amenities

The overburden emplacement within the mine site may be more noticeable from vantage points to the south and east of the mine site. There would be no change to visual amenity from vantage points to the north or west of the mine site.

Given the Applicant’s continued commitment to minimising the extent of surface disturbance in advance of mining, to implementing progressive rehabilitation, reducing dust emissions, and maintaining the mine site in a clean and tidy state, it is assessed that the increase in height of the overburden emplacement would not result in any unacceptable change to the current visual amenity.

Conclusion

The proposed modification provides for more efficient mining, production, sale and despatch of a high quality coal product which would be significant in maintaining local employment and stimulus to the local economies of Werris Creek and Quirindi. The modified post-mining landform would integrate the re-establishment of some agricultural land with areas designated for the conservation and extension of native vegetation and fauna habitat. In each case, the residual impacts were assessed to be either imperceptible from the impacts attributable to the approved Werris Creek Coal Mine, compliant with relevant criteria or appropriately mitigated or offset.

