

Executive Summary

INTRODUCTION

This *Environmental Assessment* has been prepared by Olsen Environmental Consulting Pty. Ltd. to accompany an application for project approval by Namoi Mining Pty Ltd (NMPL) (“the Proponent”). NMPL proposes to develop and operate an open cut coal mine, able to produce up to 1 million tonnes of coal per annum (Mtpa). Mining would be centred on the “Sunnyside” property and is therefore referred to as the Sunnyside Coal Project (“the Project”).

The area that encompasses the proposed open cut mine, overburden emplacements and surface infrastructure associated with the Project is referred to as the “Project Site” and is located approximately 15km west of Gunnedah and 2km north of the Oxley Highway in central northern New South Wales (see **Figure A**). The Project Site covers an area of approximately 231ha within Exploration Licence (EL) 5183 and Consolidated Coal Lease (CCL) 701. The entire area of the Project Site occurs within the “Sunnyside” property owned by NMPL.

The Project also includes the transportation of coal between the Project Site and the Whitehaven Coal Handling and Preparation Plant (CHPP) and Rail Loading Facility, 5km west of Gunnedah. This would include the construction of a new purpose built road between the Project Site and the Oxley Highway, parallel to and northeast of the existing Coocooboonah Lane, upgrading of intersections and road shoulder surfaces to an established coal transportation route along Blackjack Road, and the use of this established route to the Whitehaven CHPP and Rail Loading Facility.

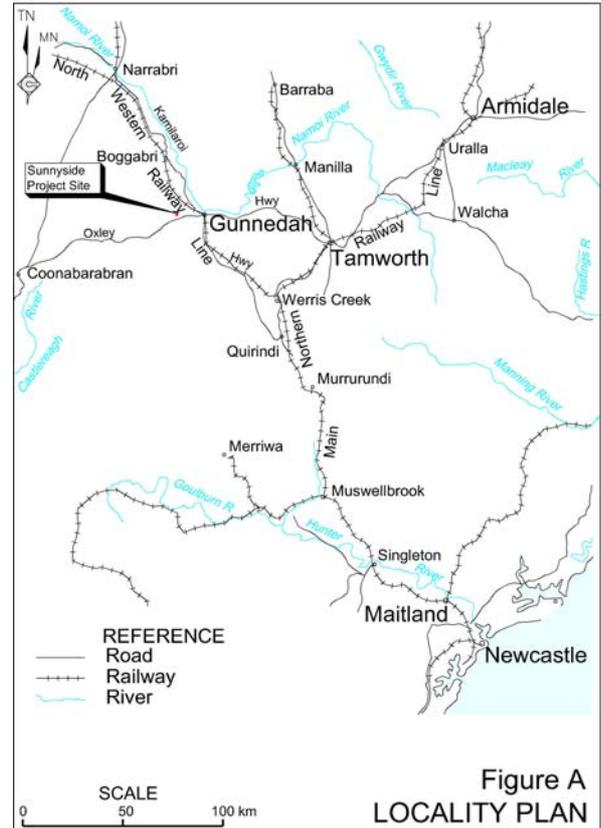


Figure A
LOCALITY PLAN

The Project is classified as a Major Project in accordance with State Environmental Planning Policy (Major Projects) (2005) and consequently, the Minister for Planning is the approval authority. As a Major Project, it would be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* and an *Environmental Assessment* report is required to be submitted to support the application for project approval.

This Executive Summary presents an overview of the Project and the predicted impacts associated with the Project.

THE PROPONENT

The Proponent for the Sunnyside Coal Project is Namoi Mining Pty Ltd (NMPL), a subsidiary company of Whitehaven Coal Limited (WCL), formed to explore and develop the coal resources in the Gunnedah Basin. Whitehaven Coal Mining Pty Ltd (WCM) currently owns and operates the Whitehaven Coal Mine and Whitehaven CHPP and Rail Loading Facility. WCM is also operating, in a joint venture with other companies, the Werris Creek Coal Mine and the Tarrawonga Coal Mine. WCL has recently received project approval for the Narrabri Coal Project, an underground mine with a maximum production level of 2.5Mtpa. WCM is also currently seeking project approval to develop the Belmont Coal Project.

The Sunnyside Project would maintain production and expand export markets for medium ash, low sulphur and high energy thermal coal from within the Gunnedah Basin.

PLANNING CONTEXT

The Sunnyside Coal Project would be developed and operated in accordance with a number of State and regional planning instruments, namely:

- State Environmental Planning Policies (SEPPs) 11, 33 and 44; and
- Orana Regional Environmental Plan (REP) No. 1.

The Project is a permissible land use on the Project Site as defined in the Gunnedah Local Environmental Plan (LEP) 1998.

MINE PLANNING CONSIDERATIONS

The Hoskissons Seam subcrops on the northeastern side of the open cut area. The seam dips to the southwest, away from the

subcrop and beneath the rising topography associated with remnant sandstone hills. This stratigraphy determines the overburden / interburden to coal stripping ratio of 5 bank cubic metres (bcm) of overburden / interburden per in-situ tonne of coal. There are no economic reserves of Melville Seam coal in the open cut area. The limits of the proposed open cut area have been determined after consideration of economic, geological and environmental aspects.

PROJECT DESCRIPTION

Figure B presents the proposed layout of the Project Site. The Project, if approved, would involve the following activities.

Coal Mining by Open Cut Methods

The open cut mine would be developed using haulback mining methods. This would involve the sequential removal of vegetation, soil, overburden and coal and progressive backfilling and rehabilitation of mined-out areas. Bulldozers and open bowl scrapers would be used to strip the topsoil and subsoil over the areas of the Project Site to be disturbed. This soil would be either transferred directly to completed sections of the open cut requiring rehabilitation, or stockpiled for future use during rehabilitation. Overburden above the coal seam would generally be blasted and loaded into trucks for transfer and placement within either an out-of-pit emplacement, or in-pit within a completed section of the open cut.

In order to remove the coal, benches would be developed along the length of coal seam by blasting and removal of overburden. As sufficient coal is exposed, it would be ripped, excavated and transported to the Run-of-Mine (ROM) pad within the coal processing area.

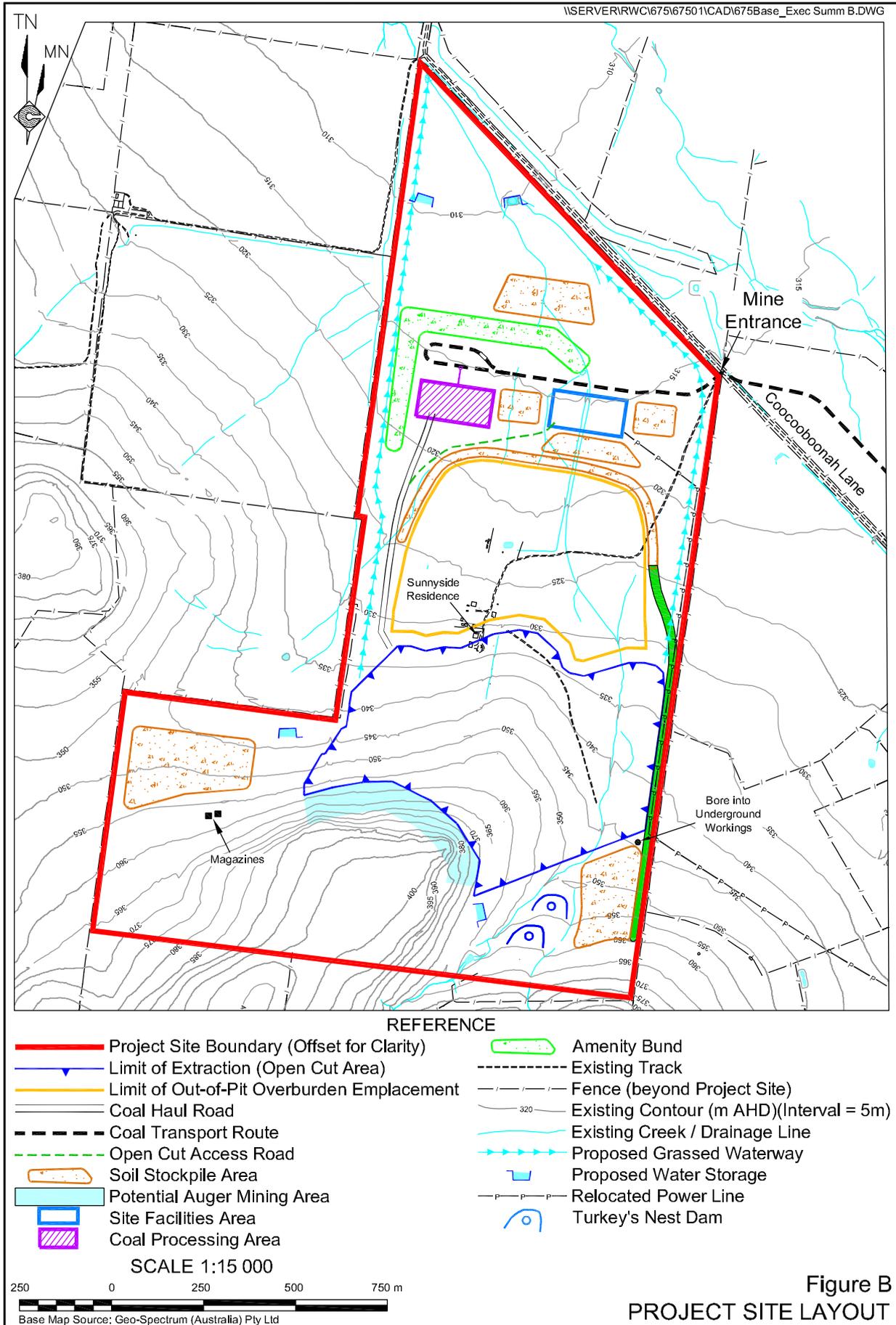


Figure B
PROJECT SITE LAYOUT

Open Cut Mining by Auger Mining

Auger mining techniques enable coal to be mined without the need for overburden removal. The auger mining method would involve the drilling of a series of gently dipping, 1.5m diameter holes for a distance of between 60m and 200m into the Hoskissons Seam. Each hole, drilled at right angles to the final highwall, would be separated by a web or septum pillar that would support the overlying strata.

Coal Processing

The mined coal would be transferred by haul truck to the coal processing area to be located immediately north of the out-of-pit emplacement (see **Figure B**). ROM coal would be either loaded directly into the coal loading hopper or placed in one of several ROM coal stockpiles (representing different quality coal). A primary crusher would reduce the size of the coal and a conveyor would transfer the crushed (and screened) coal to a product coal bin, from where trucks would be loaded for the despatch of the coal to the Whitehaven CHPP.

Annual ROM coal production would increase from an initial level of approximately 0.75Mtpa up to a maximum annual rate of 1Mtpa.

Rehabilitation

The out-of-pit and in-pit overburden emplacements would be progressively shaped to create sustainable landforms suitable for grazing. The stripped and/or stockpiled soil resources would be placed over the shaped landform and the area seeded either with pasture species or native woodland vegetation dependent on the nominated final land use. Approximately 18.8ha of the final landform would be designated for long-term nature conservation through the enhancement of existing vegetation corridors or proposed

new corridors. The remaining areas disturbed by mining and related activities would be returned to agricultural land.

Transportation

The crushed and screened coal would be transported to the Whitehaven CHPP and Rail Loading Facility by truck.

The transportation of coal would generate between 88 and 125 one-way truck trips per day, depending on the combination of B-Doubles and semi-trailers used.

The Proposed Coal Transport Route

The proposed coal transport route is shown on **Figure C**.

Trucks using the coal transport route would leave the “Sunnyside” property and travel along the realigned Coocooboonah Lane. This re-alignment would be constructed on the “Plain View” property under agreement with the landowner and would also be used by the public. The re-aligned section rejoins the existing lane about 450m from the junction with the Oxley Highway. The trucks would then travel to the Whitehaven CHPP and Rail Loading Facility on existing public roads which are approved for B-Double configuration truck access.

Hours of Operation and Project Life

The hours of operation for the Project would vary depending on the activity (see **Table 1**).

Based on a maximum production rate of 1Mtpa, the life of the proposed Sunnyside Coal Mine would be between 5 and 7 years.

Employment

During the construction phase of approximately 4 months, an estimated workforce of up to 20 full-time equivalent persons would be employed.

Table 1
Proposed Hours - Sunnyside Coal Mine

Activity	Normal Hours	Contingency
Site Establishment Activities		
Water Management structures	0700 -1800 (M-F)	1800 - 2000* (M-F)
	0700 -1600 (S)	1600 -1800 (S)
Soil / Vegetation Stripping	0700 -1800 (M-F)	1800 - 2000* (M-F)
	0700 -1600 (S)	1600 -1800 (S)
ROM crushing, stockpile & coal haulage Facility	0700 -1800 (M-F)	1800 - 2000 (M-F)
	0700 -1600 (S)	1600 -1800 (S)
Road construction	0700 -1800 (M-F)	1800 - 2000* (M-F)
	0700 -1600 (S)	
Mining and Processing Operations		
Soil stripping and stockpiling operations	0700 -1800 (M-F)	1800 - 2000* (M-F)
	0700 -1800 (S)	
Overburden scraper operations	0700 -1800 (M-F)	1800 - 2000* (M-F)
	0700 -1800 (S)	
Blast-hole drilling	0700 - 2000 (M-F)	-
	0700 -1800 (S)	
Blasting	1000 - 1700 (M-F)	-
	1000 -1400 (S)	
Overburden / Inter-burden removal & placement	0700 - 2200 (M-F)	-
	0700 - 1600 (S)	
Internal haulage of raw coal to ROM Crushing / Stockpiling Facility	0700 - 2200 (M-F)	-
	0700 - 1600 (S)	
On-site Coal Processing	0700 - 2200 (M-F)	-
	0700 -1800 (S)	
Equipment Maintenance	24 hours (M-F)	Sunday if required
	24 hours (S)	
Rehabilitation	0700 - 1800 (M-F)	-
	0700 - 1600 (S)	
Coal Transportation		
Coal Transport to Whitehaven Rail Loading Facility	0700 - 1800 (M-F)	1800 - 2000* (M-F)
	0700 - 1600 (S)	
Note: * Daylight hours only, if seasonal conditions permit M-F = Monday to Friday S = Saturday		

The operation of the proposed mine would require 24 full-time and 7 part-time employees. An additional 2 people would be required at the Whitehaven CHPP and Rail Loading Facility and 10 truck drivers would be employed by a contractor to transport the coal between the Project Site and the Whitehaven CHPP and Rail Loading Facility. It remains WCM's practice to source as many employees

locally as possible and to provide training and re-training opportunities for local persons.

For assessment purposes, NMPL has assumed (based upon its experience to date) that the bulk of the workforce for the Sunnyside Mine, with the exception of approximately five employees who would be recruited from the Gunnedah district. Hence, approximately five families are predicted to migrate into the Gunnedah district.

Waste Management

The principal wastes that would be generated by the development can be categorised as production and non-production wastes. Production wastes are primarily overburden, which would be placed in the out-of-pit and in-pit overburden emplacements. Non-production wastes would include general domestic-type wastes from the on-site buildings and routine maintenance consumables, fencing materials, oils and grease and sewage.

Domestic-type wastes would be collected and disposed of by a licensed waste disposal contractor, with recyclable materials separated, where possible. A septic envirocycle sewage system to be approved by Gunnedah Shire Council would be installed. Effluent would be irrigated onto a designated area on "Sunnyside". The facilities would be serviced by a licensed waste collection and disposal contractor.

Rehabilitation and Final Land Use

NMPL would adopt a progressive approach to the rehabilitation of disturbed areas within the Project Site to ensure that, where practicable, completed mining or overburden emplacement areas are quickly shaped, soil applied and vegetated to provide a stable landform. Revegetation

would be undertaken to enhance existing or provide new areas of Koala habitat. **Figure D** details the final landform and revegetated areas.

Rehabilitation would include the following activities.

- Overburden placement and shaping.
- Subsoil and topsoil replacement.
- Drainage installation.
- Revegetation.

Rehabilitation success would be monitored with remedial work on revegetated areas and/or water management structures undertaken as required. Noxious weeds would be controlled through targeted campaigns on an as-needed basis.

ENVIRONMENTAL SAFEGUARDS AND IMPACTS

The components and features of the existing environment on and around the Project Site have been studied in detail and the Project designed to avoid or minimise the impacts on the environment. A brief overview of the main components of the surrounding environment, the proposed safeguards and the assessed level of impact are set out below.

Groundwater

For the purposes of this document, groundwater is recognised to occur in four geological units or groups of units.

- Coocooboonah Creek alluvium.
- Overburden above the Hoskissons Seam.
- Hoskissons Seam
- Strata below the Hoskissons Seam including the Melville Seam.

No excavation would occur in the Coocooboonah Creek alluvium. The overburden above the Hoskissons Seam does not contain any aquifers. The Hoskissons Seam and deeper strata act as low yielding aquifers and contain moderately saline water. The main area of groundwater drawdown would occur within the “Sunnyside” property.

There would be a drawdown of less than 1m within two bores on the adjoining “Lilydale” property. This level of predicted drawdown is considered to have minimal impact.

NMPL would monitor groundwater levels to validate drawdown predictions. Agreements would be negotiated with affected bore owners to mitigate the impacts. Groundwater quality and quantity aspects would be monitored.

The Project is not expected to create acid mine drainage.

Mining at Sunnyside would not affect Namoi River flows or related groundwater resources.

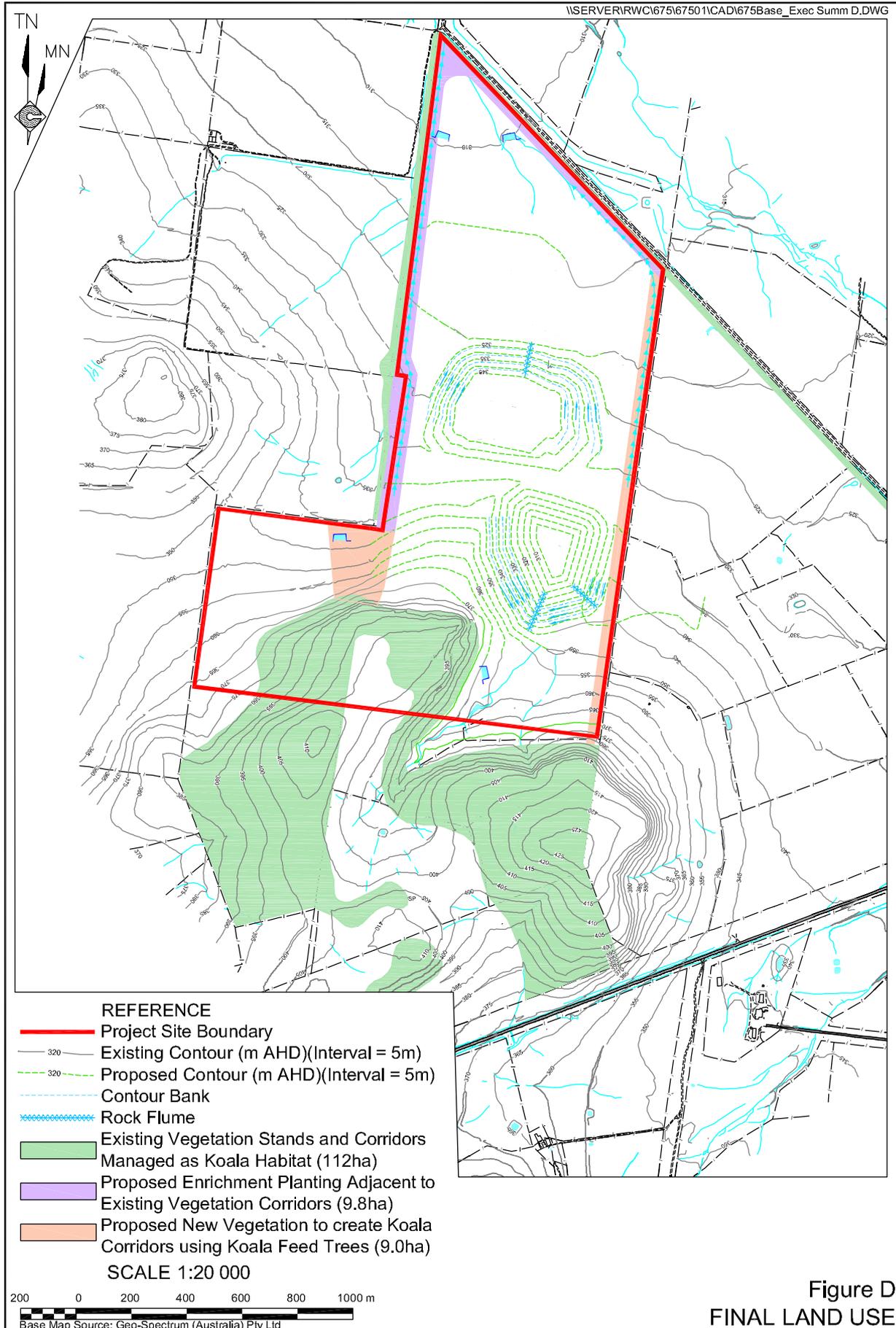
Stream flows in the local streams, Coocooboonah Creek and Rock Well Creek would not be affected by the Project.

Noise

The Project Site is typical of a rural environment with background noise contributions from farming activities, insect noise, livestock, wind through vegetation and vehicles on local roads.

NMPL would develop and implement a Noise Management Plan to minimise potential noise impacts, particularly during the site establishment and construction phase.

Traffic noise criteria are predicted to be met at all locations.



NMPL would monitor noise levels at a number of the surrounding residences.

Fauna

All species listed under the *Threatened Species Conservation (TSC) Act 1995* and the Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* were assessed for their likely or actual presence around the Project Site. Those species not likely to occur in the area were eliminated from the assessment and the remainder were assessed for likely impact as a result of the Project. Eight species were assessed and it was concluded that the Sunnyside Coal Project is not likely to have a significant effect on any threatened fauna species, populations or communities listed under the TSC Act. It was also concluded that the Project is not likely to have a significant impact on any matter of national environmental significance listed under the EPBC Act.

Most of the Project Site is covered by a mixture of exotic grassland and improved pasture with low habitat value. Remnant woodland is present on the southern section of the “Sunnyside” property and within the Coocooboonah Lane road reserve. These remnants are valuable areas of local habitat and contain core Koala habitat which supports a viable population. A Koala Management Plan has been developed and rehabilitation would include proposals to enhance and expand the core Koala habitat.

Operational safeguards to be implemented by NMPL to minimise impacts on fauna would include:

- protection of the woodlands on the southern sector of “Sunnyside”;
- Coocooboonah Lane remnant woodland would be protected;

- the remnant woodland along the western boundary of “Sunnyside” would be protected;
- revegetation would incorporate Koala feed trees and would provide new and enhance existing fauna corridors on the “Sunnyside” property; and
- a Koala Management Plan and a Vegetation Management Plan would be implemented for the Sunnyside Mine.

Surface Water

The Project Site is located within the Coocooboonah Creek catchment, a tributary of the Namoi River. Within and surrounding the Project Site, agricultural practices (eg. contour banks) have modified local drainage although the overall runoff patterns have been retained.

The Soil Conservation Service has prepared a Surface Water Management Plan, which includes the capture and use of sediment-laden (“dirty”) water and diversion of all but the maximum harvestable right of “clean” water away from proposed activities to maximise the quantity and quality of water available to downstream landholders and the local environment. NMPL would undertake a monitoring program to regularly assess the quality of water captured within the Project Site.

Predicted groundwater inflows to the open cut pit would provide a significant component of mine production water requirements. Additional water would be drawn from the surface water system to meet mining requirements. Any excess groundwater inflow to the open cut pit would be pumped to two turkey’s nest dams with any excess water discharged into the Gunnedah Mine N^o 5 Entry underground workings.

Air Quality

The Air Quality Assessment concluded that provided the following operational air quality control safeguards are adhered to, any increase to PM_{2.5}, PM₁₀, and deposited dust would meet DECC and other government agency environmental and health criteria.

- All internal haul roads watered at a rate of 2L/m²/application.
- Construction of an amenity bund surrounding the coal processing area.
- Revegetation of the amenity bund.

Greenhouse gas emissions, including end user emissions, would be equivalent to 0.009% of the 2000 International emission level and therefore represent a negligible increase globally.

A Sunnyside Project dust monitoring program has commenced.

Traffic

Depending on the configuration of truck used to transport the coal, the Sunnyside Mine, operating at 1Mtpa would add an additional 88 to 125 truck one-way trips per day along the coal transport route. This level of traffic would increase commercial vehicle movements on the Oxley Highway by 35% to 50% whereas the trucks would substantially increase overall traffic movements and the proportion of heavy vehicles on the remaining roads along the coal transport route.

The hours of coal transportation would be between 7.00am to 6.00pm Monday to Friday and between 7.00am and 4.00pm on Saturdays. If required, and only during daylight hours if seasonal conditions permit, the Monday to Friday trucking hours may be extended to allow trucking from 7.00am to 8.00pm.

NMPL has designed all roads and intersections to appropriate RTA standards with all designs to be submitted to Gunnedah Shire Council for approval prior to construction. Additional to these design features, a number of operational controls would be adopted including the following.

- A covered load policy.
- Driver Code of Conduct.
- Liaison between Gunnedah Shire Council and NMPL to better identify School Bus Stops along the coal transport route.
- Maintenance of all vehicles in good working order.
- Upgrades to the road surface and intersections.

Even though the proposed traffic increase would be noticeable on the local roads, it would not have a major impact on local traffic, roads and road users. This assessment is based upon the adoption of the design features and operational safeguards and NMPL's intended agreement with Gunnedah Shire Council for proportional contribution to the maintenance of the local public roads.

Aboriginal Heritage

A total of four Aboriginal heritage sites were identified on or adjacent to the Project Site (an axe grinding groove, two isolated artefacts and an artefact scatter). None of the sites would be directly affected, although measures would be taken to avoid impacting an axe grinding groove which is located approximately 150m south of the proposed open cut pit. No salvaging or disturbance of Aboriginal archaeological sites would occur as a result of the Sunnyside Project.

Representatives from the Red Chief LALC and the Bigundi Biame Gunnedarr Traditional People would be invited to be present to monitor all turf stripping operations.

Flora

Nine vegetation communities were identified on and adjacent to the Project Site. There is a remnant of the White Box, Yellow Box, Blakely's Red Gum Woodland endangered ecological community adjacent to the Project Site, but this would not be affected by the Project. There is also a remnant of the Native Vegetation on Cracking Clay Soils of the Liverpool Plains endangered ecological community. This occurs at the Oxley Highway end of the Coocooboonah Lane re-alignment. The community would only be affected in a minor way by the development and would be rehabilitated at the conclusion of the Project.

No threatened flora species were identified within the Project Site or along the proposed coal transport route. Similarly, no areas of critical habitat were identified on or adjacent to the Project Site or proposed coal transport route.

The area to be disturbed is predominantly exotic grassland. Rehabilitation would provide an opportunity to enhance existing and provide new Koala habitat areas and movement corridors. NMPL's revegetation proposals are shown on **Figure D**.

Soil and Land Capability

Three separate soil types were identified on the Project Site and along the realigned section of Coocooboonah Lane. All the soils were non-saline, had low dispersion indexes and were moderately erodible. The soils are generally suitable for plant growth.

All topsoil to a depth of 15cm and up to 50cm of subsoil would be stripped and re-used for Project Site rehabilitation. Those subsoils not amenable to rehabilitation

would be buried in either the in-pit or out-of-pit emplacement.

The land capabilities of the areas to be disturbed within the Project Site are predominantly Class II and Class III with a small area of Class VII land along the escarpment and adjacent to the proposed open cut pit. The agricultural land suitability is predominantly Class 2. The land associated with the escarpment is Class 5 land.

Rehabilitation would result in the bulk of the land capability Class II land retained after mining with approximately 50% of the Class III returned. There would be 24.5ha of Class VI land on the out-of-pit emplacement and 18.4ha of Class VIII land established on the depression remaining after the final void is re-shaped.

The rehabilitated out-of-pit emplacement and re-shaped final void depression would have a post mining agricultural land suitability of Class 5.

Approximately 18.8ha of the "Sunnyside" property would be used for establishing new or enhancing existing Koala habitat and would not be returned to agricultural uses.

Visibility

The Project Site is visible from a number of local roads and properties within the Coocooboonah Creek Catchment. To mitigate the possible visual impacts of the planned Project, an amenity bund up to 15m high would be constructed around the coal processing area and would help to provide a visual screen to the coal processing activities. NMPL's commitment to minimise the extent of surface disturbance in advance of mining and to implement progressive rehabilitation, in conjunction with the visual shielding offered by the amenity bund and the out-of-pit emplacement, would ensure that the visual impact of the Project is acceptable.

Socio-economic Setting

The socio-economic setting in Gunnedah and the surrounding Local Government Area is typical of many rural areas in New South Wales. Unemployment is above the State average, there is a dependence on agriculture as the major industry of employment and there is a trend for those in the younger working class bracket (19 to 39 years) to leave in search of greater employment and / or educational opportunities. The Project would provide a number of benefits to Gunnedah.

Social Benefits

- Greater employment opportunities would reduce the exodus of 19 to 39 year olds.
- Although the population increase attributable to the Sunnyside Project is likely to be small, it would provide a larger base in Gunnedah for retention and expansion of existing services and facilities.
- Reduced unemployment, a more normal age structure distribution and increased economic activity would provide an economic and social boost for Gunnedah.

Economic Benefits

- Provision of 24 full-time and seven part-time jobs for a 5 to 7 year period. There would be indirect jobs created as a result of the mine's operation.
- Increased and diversified economic activity would stimulate other ancillary and service businesses.
- The small increase in the population would create a modest demand for residential development, subsequently increasing the likelihood of the viability of all sectors, particularly the commercial sector.

- Flow-on benefits to the State economy through royalty payments, transport charges, and other direct and indirect payments to the State.
- The Commonwealth would receive benefit through federal taxes and duties and a positive contribution to export earnings during the life of the Project.

The potential economic benefits have been recognised by local community stakeholders as mitigating any short term minor adverse impacts.

PROJECT JUSTIFICATION

The proposed Sunnyside Coal Mine and associated activities have been assessed in terms of a wide range of biophysical, social and economic issues.

These impacts can be justified in terms of the positive economic and social benefits to Gunnedah, New South Wales and Australia, the market opportunities for export quality coal.

The design and operational regime for the proposed mine would ensure any adverse impacts are acceptable.

CONCLUSION

The proposed Sunnyside Coal Mine has, to the extent feasible, been designed to address all issues raised by the local community and all levels of government as well as the principles of ecologically sustainable development. The Project provides for mining, production, sale and despatch of an export quality thermal coal product which would be significant in generating employment opportunities and boosting the local economy of Gunnedah.

The post-mining landform would integrate the re-establishment of agricultural land with significant areas designated for the enhancement and establishment of Koala habitat and movement corridors.

In light of the conclusions included in the *Environmental Assessment*, it is assessed that the proposed Sunnyside Coal Mine would be constructed and operated in a manner that would satisfy all relevant statutory goals and criteria, environmental objectives and reasonable community expectations.

The *Environmental Assessment*, supported by a range of specialist consultant studies has established that if the Sunnyside Coal Mine proceeds, it would:

- continue to satisfy the demand for export quality coal;
- satisfy sustainable development principles;
- establish enhanced and expanded areas of Koala habitat;
- have a minimal and manageable impact on the biophysical environment;
- address the perceived social impacts,
- contribute to the continued economic activity of Gunnedah; and
- provide for post-mining economic activity on the Project Site.

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