Waratah Coal

Galilee Coal Project, Northern Export Facility

Initial Advice Statement

Waratah Coal

THE NEW ENERGY IN COAL

28 OCTOBER 2008

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1. INTRODUCTION

1.1 Project Overview

The proponent, Waratah Coal, intends to establish a new coal mine, railway and coal stockyards and supporting infrastructure to export high volatile, low sulphur, steaming coal to international markets. The coal will be sourced from Waratah Coal's mining tenements near Alpha in the Galilee Basin, Central Queensland and taken by rail to the Abbot Point State Development Area (APSDA) where stockyards will be established that tie in with either the common user infrastructure and Multi Purpose Cargo Wharf currently being planned by Government or a jetty berth design similar to what is currently in use at Abbot Point. The project also includes the possible establishment of a water supply pipeline between the coal mine and the Burdekin Dam and water retention infrastructure within the Belyando River catchment. These infrastructure requirements will be considered as part of the overall project assessment. **Figure 1** illustrates the project's development concept.

1.1.1 The Mine

Waratah Coal's EPCs and applications cover a total area of 15,250 km^2 (refer to **Figure 1**). The proposed mine is situated near "Kiora" approximately 13 km west and 35 km north of Alpha. To date, Waratah Coal has identified an inferred resource of 4.355 billion tonnes of coal within its North Alpha (EPC1053) and South Alpha (EPC1040) tenements. Coal quality tests confirm that these coal reserves average less than 0.5 % sulphur and possess an average calorific value of 26 MJ/kg.

The open cut mine is intended to have an initial export capacity of 25 million tonnes per annum (Mtpa), with the capability to expand substantially to 50 Mtpa and beyond. The mine will proceed through a staged development process that currently targets first coal in 2012. As the coal will require washing for the export market, an initial 32 Mtpa of Run of Mine (ROM) coal will be required to provide 25 Mtpa of export coal.

1.1.2 The Railway

It is proposed to use state-of-the-art, heavy haul, standard gauge, rail infrastructure with 20,000 tonne unit trains. The initial transport of 25 Mtpa of washed coal from Waratah's mining operations would result in the use of four train sets each comprised of six locomotives and 180 wagons, operating on a 24 hour cycle over a six day week and a 50 week year.

The rail infrastructure could also be dual gauge from the Bowen Basin to the stockyard location at the APSDA to facilitate access by narrow gauge trains carrying an additional 25 Mtpa of coal from third party users to reach the initial export capacity of 50 Mtpa.

To enable coal to be exported at the minimum logistical costs Waratah Coal studied the rail network options (as shown in **Table 1**) to the Port of Abbot Point with stockyards and infrastructure located within the APSDA. The rail links outlined in **Table 1** were considered in support of the decision to investigate the Port of Abbot Point as the preferred export port location. Different potential options regarding ownership of the railway line will be considered during the project pre-feasibility studies. Options may include a public – private partnership model.

Table 1: Rail link options to Abbot Point State Development Area

Option	Port	Description
1	Abbot Point	New standard gauge EPC 1040 to Abbot Point
1	Abbot Point	New narrow gauge EPC 1040 to Abbot Point
1	Abbot Point	New narrow gauge EPC 1040 to Newlands Mine. Use existing narrow gauge from Newlands Mine to Abbot Point
2	Abbot Point	New narrow gauge EPC 1040 to Blair Athol. Use existing narrow gauge from Blair Athol to Wotonga / Goonyella, Newlands to Abbot Point

1.1.3 Coal Loading Infrastructure

It is proposed that new coal stockyards and coal transfer infrastructure will be established within the APSDA. The coal transfer infrastructure will link in with the Government developed common use infrastructure from the APSDA to the new Multi Purpose Cargo Wharf.

Initially the stockyards and transfer infrastructure will be built with a capacity of 50 Mtpa of coal. The infrastructure will integrate with the APSDA and Port of Abbot Point common use infrastructure currently being considered by Government.

1.2 Project Proponent

The project will be developed and operated by Waratah Coal Incorporated (Waratah Coal). Waratah Coal is approximately 50% Australian owned public company which listed on the Toronto Stock Exchange's Venture Exchange in December 2006 and was incorporated in British Columbia, Canada on the 19 January 2006.

Waratah Coal's business strategy is to build shareholder value through acquisition, exploration and development of coal projects in Australasia. This strategy utilises Waratah's executive core skills and experience in project evaluation, structured acquisition, exploration, project development and operations.

Waratah Coal has a market capitalisation of A$54.55 million as at 22 October 2008.

The contact details for Waratah Coal Inc are as follows:

Waratah Coal Inc.

GPO Box 89

Brisbane Qld 4001.

1.3 Project Financing

Waratah Coal has to date raised sufficient equity finance to fund the project through to the completion of a formal pre-feasibility study. During the pre-feasibility various options will be progressed to provide the additional funding required for completion of a bankable feasibility study. Establishment of the financial requirements to achieve financial close in readiness for construction to commence will form part of the feasibility study. Scoping studies to date estimate a total project cost estimate of $5.3

billion. The mine financing would be typically 65% debt and 35% equity funded while the rail funding would typically by 80% debt and 20% equity funded.

1.4 Need for the Project

At present, the global physical demand and price outlook for thermal coal is robust and is sufficient to support the development of Waratah Coal's Galilee Basin coal resources. The key drivers for Waratah Coal include:

- High world prices for thermal coal;
- Sustained world wide demand for coal (for example, China is expected to double its installed, coal-fired, electricity generating capacity over the next 20 years);
- High quality coal product compared to alternative sources;
- Huge coal resource base which will enable a low operating cost, high production operation to be established in a manner similar to iron ore development in Western Australia;
- Structurally benign deposit suitable for high production, open cut mining and high production, longwall mining at depth;
- Low sovereign risk for investment in Australia; and
- Australian coal miners are at the forefront of expertise, innovation and mining technology.

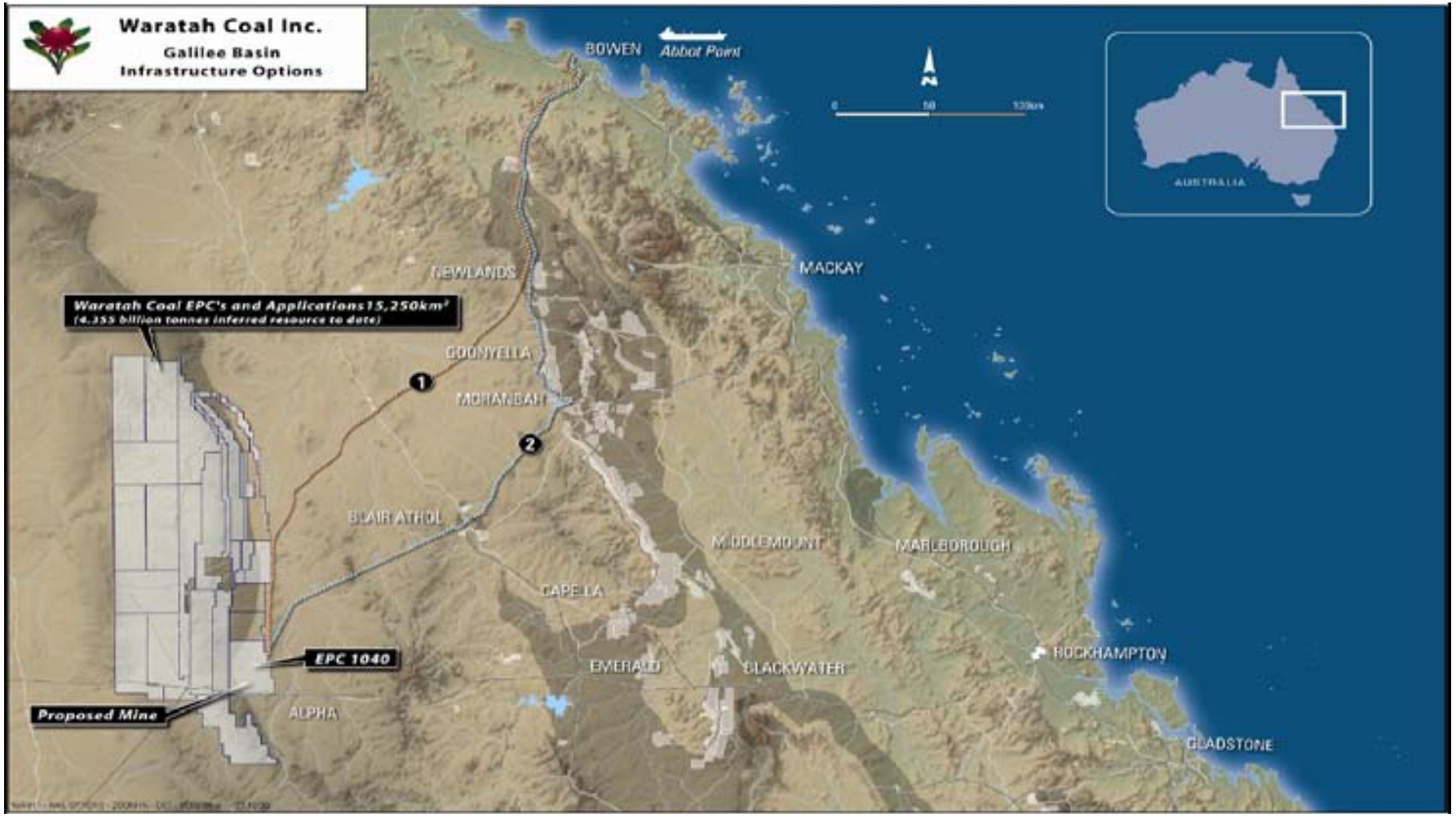
The Waratah Coal Project will be developed to take advantage of global demand for thermal coal. This demand is expected to grow at more than 3% per annum over the next 10 - 15 years. The Project can supply a coal product that meets current market requirements for thermal coal.

It is expected that the future world demand for thermal coal will be predominately driven by developing Pacific Rim markets. In this market, Australia is an important world supplier of coal for nations seeking secure energy supplies produced in a stable economic and political environment.

The Galilee Basin coal has ideal characteristics for use in Integrated Gasification Combined Cycle power stations and as a fuel for other low emission technologies.

It is Waratah Coal's intention to enter into supply agreements with one or more customers for the consumption of production from the proposed mine.

Figure 1. Project Concept Plan



1.5 Project Economic Benefits

It is estimated that the construction of the project will require an investment of approximately A$5.3 billion. The project will generate significant economic benefits on a regional, state and national scale as a result of:

- The employment of up to 2,200 people during construction and 760 permanent employees for the operation of the project;
- Government revenue collected through taxes and royalties;
- The generation of export income for the country;
- Expenditure in the local economy through the purchase and use of local resources, wherever practical, for the construction and operation of the project components;
- The local expenditure of employee's disposable incomes;
- Increased regional development;
- Potential use of fibre optic cables (via rail control and operation) to enhance the broadband capacity of the region along the rail line;
- The provision of new rail and port infrastructure in Central Queensland; and
- The provision of water infrastructure for use to agricultural businesses.

1.6 Document Purpose and Scope

The purpose of this Initial Advice Statement (IAS) is to provide information to:

- Assist the Coordinator-General to make a decision on a declaration of the project as a "Significant Project" under Section 26 of the Queensland *State Development and Public Works Organisation Act 1971* (SDPWOA) which would initiate the statutory impact assessment procedures of Part 4 of the Act;
- Enable stakeholders (including the general community) to determine the nature and level of their interest in the proposal; and
- Assist the Department of Infrastructure and Planning on behalf of the Coordinator-General to prepare draft Terms of Reference (TOR) for an Environmental Impact Statement (EIS) for the proposed project.

The IAS has been developed to provide a preliminary overview of the nature and extent of the potential social, economic and environmental impacts that may be associated with the construction and operation of the proposed project as far as they can be foreseen at the concept stage of project planning. The IAS also identifies the key statutory approvals that may be required for the project to proceed and identifies environmental studies that may be required to support the project.

2. PROJECT PROPOSAL

2.1 Project Site Selection

The pre-concept design phase of the project examined a number of alternative railway routes and potential port locations for the project. This followed a review of the capability of existing rail and port infrastructure to handle the project's design coal tonnage. This review confirmed the need for a coal terminal at APSDA to cater for Galilee Basin coal and logically to form part of the Multi Purpose Cargo Wharf to enable the timely and efficient export of the project's coal product.

2.1.1 Export Port and Rail Options

The export port options considered were Abbot Point, Dudgeon Point and a new port adjacent to Cape Upstart. Integrating the coal stockyards and transfer infrastructure onto the Multi Purpose Cargo Wharf infrastructure development proposed for the Port of Abbot Point is considered the preferred port option.

2.2 Project Components

Whilst the focus of this IAS is the development of the mine, railway and stockyards with supporting transfer infrastructure, the project will require the construction of a mine water supply system and a high-voltage power transmission line to supply project needs for water and power. It is anticipated the design and construction of this infrastructure will be undertaken in parallel with the development and this may involve other parties (SunWater, Ergon and Powerlink). Brief details of these supporting projects are presented in Section 2.6. It should be noted that separate development approvals will be required for this supporting infrastructure and that these approvals would usually be sought by the responsible agencies.

2.3 The Mine

The mining concept is currently being developed by the proponent. Initial indications are that the coal can be extracted and processed using existing proven technologies at an acceptable cost.

2.3.1 The Resource

2.3.1.1 Regional Setting

Geologically, the Galilee Basin covers an area of 247,000 km^2 in Central Queensland. The Galilee Basin contains extensive coal deposits, largely at depth except for the eastern outcrop margin, where the Waratah Coal project is situated. The five principal coal seams in the Alpha area contain sub-bituminous high volatile perhydrous coals suitable for use as thermal coal and potentially for liquefaction, gasification and other petrochemical applications.

The prospect generally has the potential to produce high outputs of good quality coals at shallow overburden depths. The structurally benign geological environment suggests the coal seams will also be suitable for underground longwall mining.

2.3.1.2 Exploration Tenures and Coal Reserves

The potential mining area at present encompasses nine coal exploration tenements within the Galilee Basin. Exploration efforts are currently focussed on coal resources contained within EPC1040 and EPC1053. Currently two exploration tenements are estimated to contain an inferred resource of 4.355 billion tonnes of extractable coal. Tenements within the potential mining area are outlined in **Table 2** (data as at 28/09/2008) and illustrated in **Figure 2**.

Table 2: Waratah Coal Exploration Tenements

Tenement Number	Name	Status	Inferred Resource (billion tonnes)	Tenement Number	Name	Status	Inferred Resource (billion tonnes)
EPC1040 EPC1079	South Alpha Alpha Extended	Granted	3.38 (combined)	EPCA1283	Springvale	Application	-
EPC1053	Alpha North	Granted	0.975	EPCA1284	Eastmere Creek	Application	-
EPC1039	Pocky Creek	Granted	-	EPCA1285	Alice River	Application	-
EPC1080	Laglan	Granted	-	EPCA1286	Jordan Creek	Application	-
EPCA1105	Dingo Creek	Application	-	EPCA1287	Lake Galilee	Application	-
EPCA1157	Jericho North	Application	-	EPCA1288	Clarke Creek	Application	-
EPCA1155	Jericho	Application	-	EPCA1289	Gorge Dam	Application	-
EPCA1281	Edie Creek	Application	-	EPCA1290	Diamond Creek	Application	-
EPCA1280	Lennox	Application		EPCA1156	Jericho South	Application	

The typical structure of coal seams in the potential mining area is illustrated in **Figure 3** and the typical coal quality is outlined in **Table 3**.

Four seams subcrop to the east and dip gently to the west and the shallow overburden provides for a sound opportunity for open cut mining.

Table 3: Typical Coal Quality – South Alpha Tenement (EPC1040)

Raw Coal		Washed Coal F1.60	
Moisture % (air dried (ad))	8 to 12	Yield %	75 – 95
Ash % (ad)	14 to 33	Ash % (ad)	8
Sulphur % (ad)	0.5	Volatile Matter % (ad)	34
Energy (MJ/kg (ad))	24	Sulphur % (ad)	<0.5
		Energy (Kcal/kg (ad))	6,350

2.3.2 Mining Concept

The preliminary mine concept is illustrated in **Figure 4**. An initial assessment of possible mining options has indicated that the coal deposits are suitable for both open cut mining and underground longwall mining.

The proponent is currently considering a number of potential mining method combinations involving dragline, truck and shovel, and shovel and conveyor options for the open cut phase of the proposed mine. Underground longwall mining will be undertaken at a future time to extract coal from the deeper seams.

It is expected that the mine will incorporate the following:

- Open cut pits;
- Topsoil stockpiles;
- Water management structures (including sediment dams, levee banks, etc);
- ROM and product stockpiles;
- Coal rail loadout facilities;
- Coal preparation plant;
- Tailings dams;
- Overburden dumps;
- Waste water treatment facilities;
- Refuelling and maintenance facilities;
- Access and haul roads;
- Power lines; and
- Mine office, communications, and associated amenities.

Figure 2: Exploration Tenements Map

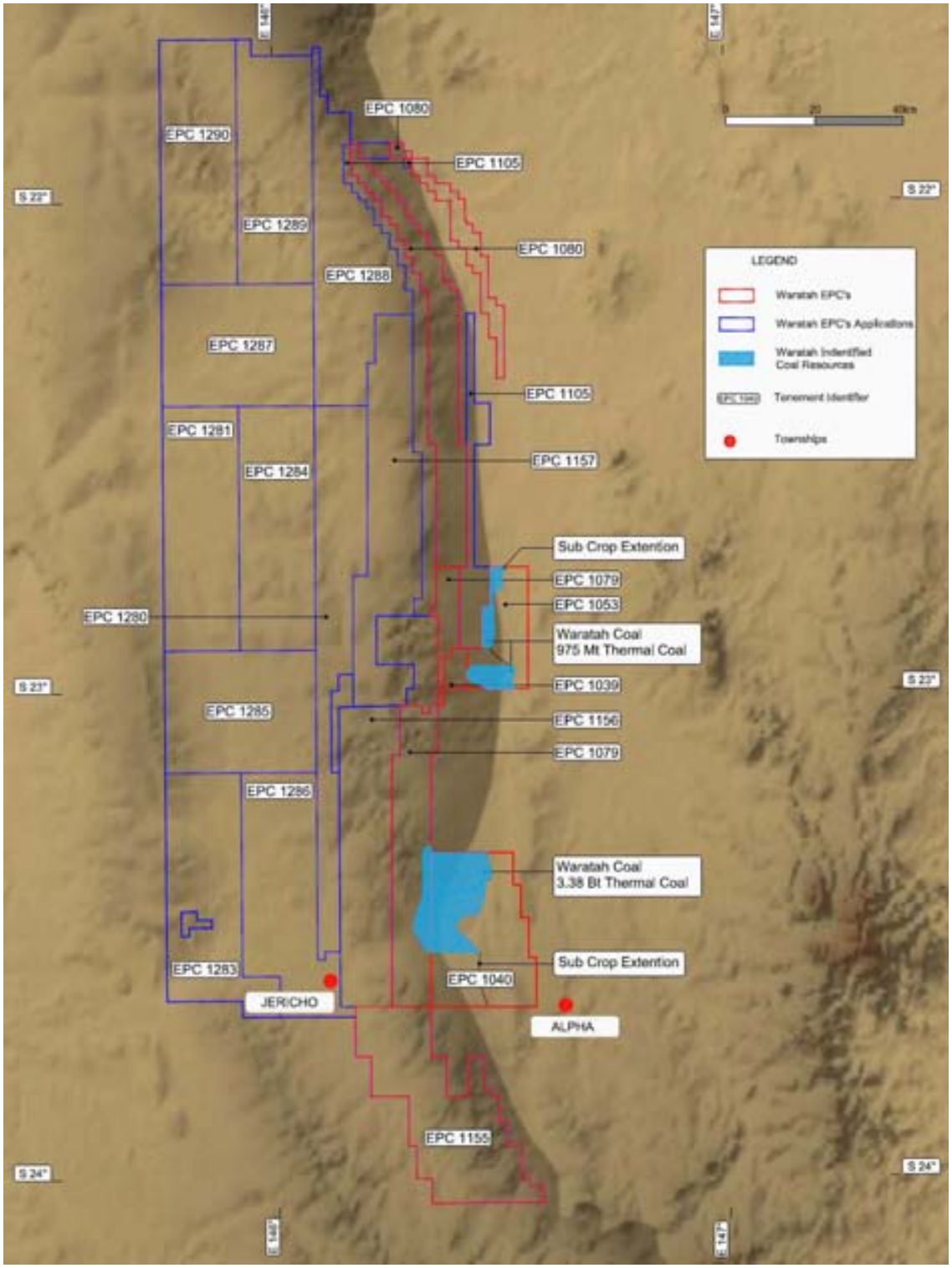


Figure 3: Typical Stratigraphic Section of the South Alpha Tenement (EPC1040)

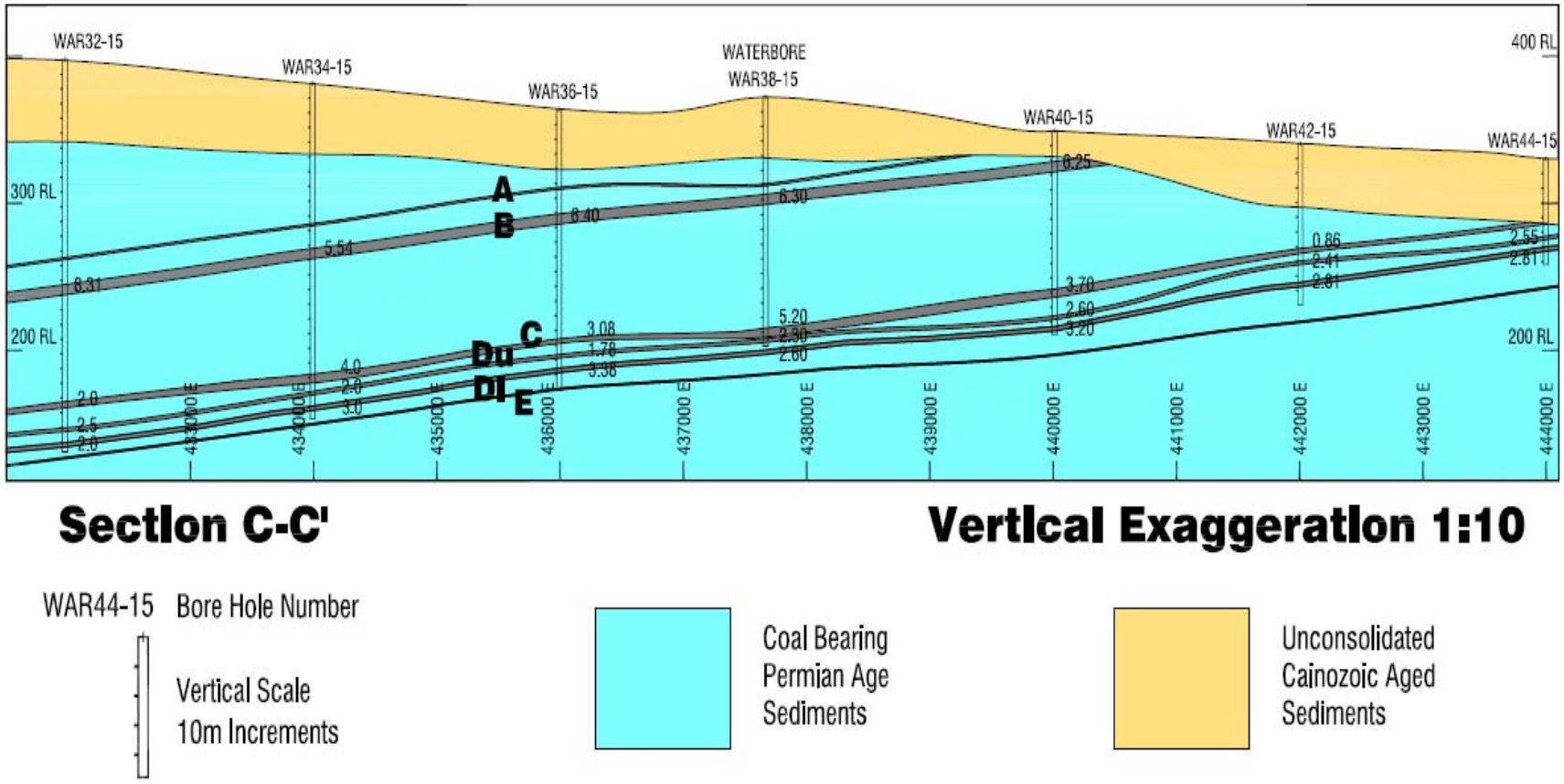
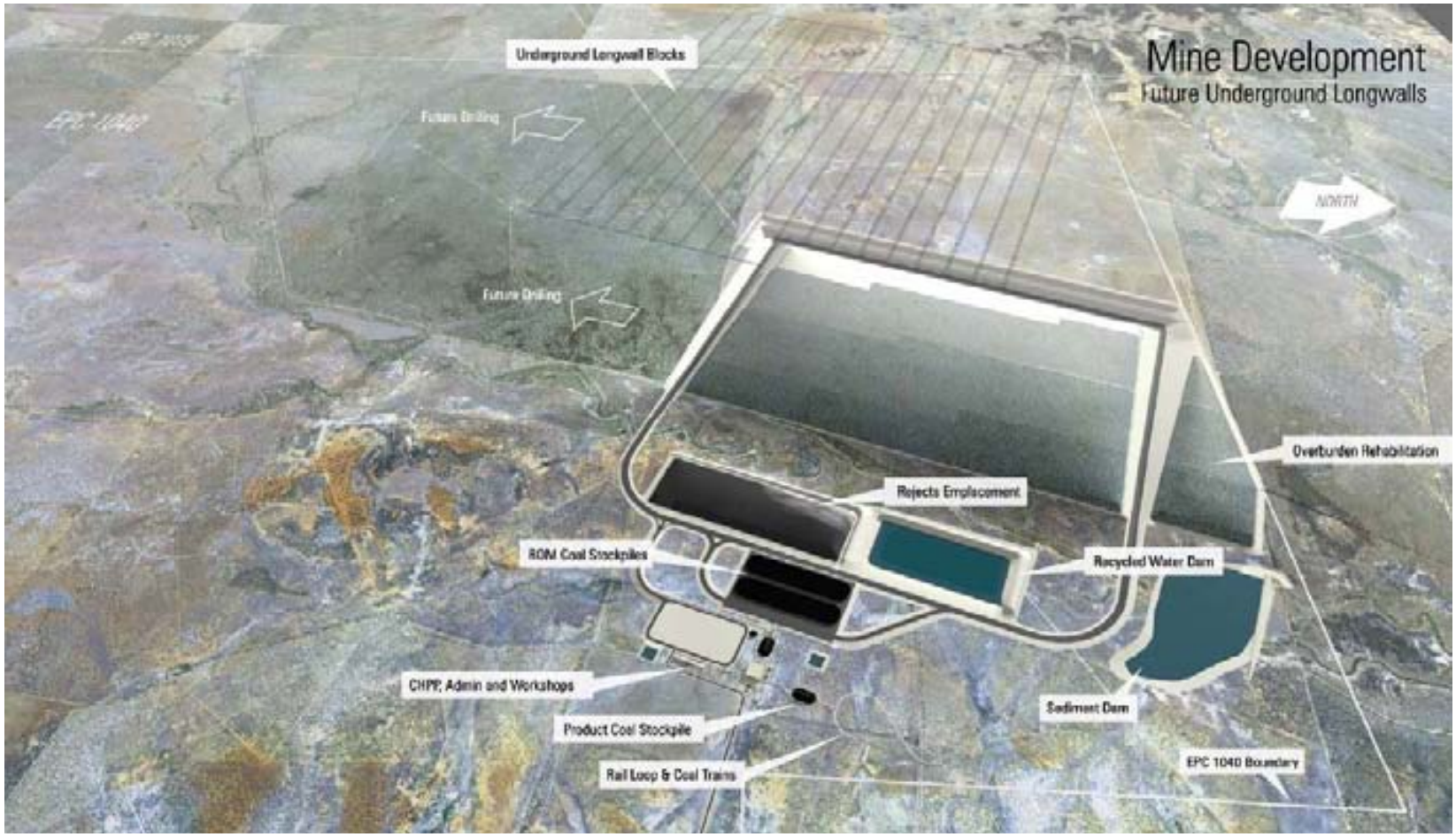


Figure 4. Mine Concept Plan



2.3.2.1 Water Supply

It is estimated that the proposed mine will require some 7,500 ML per annum of raw water. It is proposed to source this water from a variety of sources. Water will be obtained form local bores, mine dewatering, a structure on the Belyando River or from Lake Dalrymple on the Burdekin River. The transport of water to the site from Lake Dalrymple would require the construction of a new water supply pipeline (approximately 285 km in length).

2.3.2.2 Power Supply

The mine is expected to require up to 100 MW per annum. The potential mine area is traversed by the existing Lilyvale - Clermont-Barcaldine 132 kV powerline owned by Ergon. Power will be sourced from this transmission line or the proposed IsaLink HVDC line. The Isalink project has recently been declared a "significant project" under Section 26(1)(a) of the SDPWOA. This project involves the construction of 1100 km of transmission line of which a section of the line is proposed to cross the Galilee Basin and therefore provides opportunity for Waratah Coal to directly access the power supply.

2.3.2.3 Transportation

Several existing roads and major transport routes intersect the proposed mine area and the mine water supply pipeline corridor. These are identified in **Table 4**.

Table 4: Existing Major Infrastructure Located within the Mine Project Area

Infrastructure	Location (within site)	Infrastructure	Location (near site)
Principal Roads		Large Towns	
Capricorn Highway	South	Jericho	2 km SW
		Alpha	7 km SE
Minor Roads		Small Towns	
Tumbar Road	South	Albro	5 km E
Jericho – Degulla Road	South, East	Jericho	2 km W
Laglan – Lou Lou Park Road	North	Alpha	6.5 km E
Shuttleworth – Carmichael Road	North-west	Lou Lou Park	6.5 km W
Moray – Carmichael Road	North	Carmichael	7.5 km W
Existing Infrastructure		Shuttleworth	10 km W
Ergon Energy 132kV Lilyvale – Clermont - Barcaldine Powerline	South		
Queensland Rail Central Rail Line	South		

2.3.3 Workforce

It is expected that the construction of the mine will require between 480 and 600 workers onsite depending on the stage of works. It is expected that 100 workers will be required to commence construction. The workforce required to operate the mine will depend on the mining method which is ultimately selected following the completion of pre-feasibility studies. At this time is estimated that some 600 persons will be permanently employed.

The mine will operate on a fly in / fly out system for its workforce for both the construction and operational phases of the project. It is proposed to construct a temporary accommodation village near the mine site. This village will be fully self-contained. It will also be used to house railway construction workers working on the western segment of the proposed railway.

Several airport options for the fly in / fly out worker movement will be examined as part of the project pre-feasibility studies. These are the construction of a new facility at the mine site, upgrading of the existing Alpha airstrip and the use of the existing commercial airport at Emerald combined with the bussing of workers to the mine site.

2.3.4 Water Management Strategy

The mine will establish appropriate water management infrastructure to control the transport and storage of water around the site. The key water management goals will be to minimise downstream impacts from the proposed mining operation and to reuse and conserve water on the site.

It is expected that the following control strategies will be employed where appropriate:

- Runoff from undisturbed catchments both upstream of and within the proposed mining leases will be passed through the mining lease areas in defined drainage corridors;
- Runoff from catchments disturbed by mining activities will be directed through sediment basins, where necessary, to reduce sediment load and then allowed to flow off-site;
- Runoff from the industrial area will be directed through sediment basins with base flows being utilised for dust suppression;
- Water from the Coal Handling and Process Plant will be recycled in a closed loop system; and
- Mine water will be managed in a series of dedicated storage facilities.

A wastewater treatment facility will be established to treat wastewater generated from the mine infrastructure area such as sewage and washdown water. The facility will be designed in accordance with local and statutory requirements.

2.3.5 Tailings Management

Reject and tailings management will be required as the ROM coal will require washing on-site. Plant water consumption and water availability are the major considerations in the selection of the most appropriate method of tailings disposal. The method of reject and tailings disposal will be ascertained in conjunction with the water resource study conducted as part of the EIS assessment.

2.3.6 Site Rehabilitation

It is intended that all mining disturbance will be rehabilitated as soon as possible after mining. Spoil dump areas will be rehabilitated when they are no longer required for disposal purposes or they reach a size where it becomes economic to undertake rehabilitation. It is expected that areas of unstable spoil will need to be stabilised through the selective placement of competent spoil and rock to prevent unacceptable rates of erosion.

The post mining land use aim is to return disturbed areas to bushland which may support limited grazing in the longer term. Landform stability is intended to be achieved through the establishment of a diverse vegetative cover that is self-sustaining.

It is proposed that all final voids will remain open and become water storages collecting runoff from the void catchment areas. The potential for void overflow will be examined as part of the EIS process and if necessary measures will be developed to manage such overflows.

2.4 The Railway

2.4.1 Preferred Rail Corridor

A preferred rail route corridor will, where possible, utilise existing road and rail easements. It is intended that the location of the railway line within this corridor will be progressively refined during future design stages of the project. **Figure 1** shows the proposed rail options. The railway alignment is predominantly located on freehold land used for beef production and pasture crops. Areas of leasehold land and State forestry reserve are present along the alignment, especially along Route 2. The eastern portion of the alignment transects the APSDA.

A potential exists for third party users from both the Bowen Basin and the Galilee Basin to utilise the proposed rail network.

2.4.2 Railway and Train Characteristics

The concept train will be diesel-electric. The preliminary design characteristics for the proposed railway are outlined in **Table 5**. These parameters are indicative only and will be refined during the detailed design phase of the Project.

Maintenance tracks, 5 m in width, will be constructed within the railway easement along the length of the railway.

2.4.2.1 Electricity and Communications

The need for electricity will be limited to providing power for construction camps, signals and telemetry. The use of fibre optics to support rail communications will be considered as part of the infrastructure assessment. It is not proposed to electrify the line at this time; however, the electrification of the line will be a key aspect of the feasibility studies.

Table 5: Preliminary Railway Design Parameters

Description	Parameter
Corridor width (nominal)	80 m - new corridor from mine to South of Newlands and then mostly parallel to the Northern Missing Link and Newlands line to Abbot Point with some likely deviations to reduce grades. Alternatively, new corridor from mine to Blair Athol and then mostly parallel to the Blair Athol - Wotonga - North Goonyella Line, Northern Missing Link and Newlands line to Abbot Point with some likely deviations to reduce grades.
Design speed	80 km/hr loaded, 100 km/hr unloaded
Track	Standard Gauge single track with passing loops at 75 km average spacing initially
Nett tonnage per train	21,240 t (Standard Gauge)
Train length	3,200 m
Passing loop length	3,500 m
Flood immunity	1 in 100 years
Maximum grades	1 in 100 against loaded train, 1 in 80 against unloaded train
Rail bridge design loading	M400
Signalling	Trains to be equipped with state of the art signalling technology with supervision of the drivers actions by the safety system.

2.4.3 Workforce and Accommodation

2.4.3.1 Construction Workforce

It is expected that the construction of the rail link will require between 800 – 1,000 workers at any one time, depending on the stage of works. The peak demand of 1,000 persons will coincide with the heavy construction period prior to commissioning in 2012.

It is expected that the construction workforce will be housed in temporary camp accommodation at strategic locations along the route. The precise locations of construction camps, site offices, storage areas and compounds have not been determined at this time.

The construction camps will be designed to be self-sufficient and will be comprised of demountable single units. The railway construction camps are likely to contain the following facilities:

- Weed wash down bay;
- Septic sewerage system;
- Dining/cooking hall;
- Laundry facilities;
- Fuel, chemicals and waste storage;

- First aid station and designated vehicle;
- Vehicle and machinery parking areas;
- Maintenance workshop; and
- Recreational facilities.

2.4.3.2 Operational Workforce

The railway will employ approximately 60 permanent operational staff and will operate 24 hours a day, seven days per week. Additional personnel will be required for scheduled maintenance periods and there will be numerous contractors to assist and maintain the ongoing demands of the plant. The operational workforce may be accommodated in existing dwellings at appropriate locations.

2.4.4 Line Construction

2.4.4.1 Access Roads

Prior to construction, access roads will be identified for use during construction. Existing major roads will be used to provide access to the rail corridor; however, some additional access paths may need to be negotiated with landowners to obtain access into sites if the construction contractor requires them. Where private farm roads are proposed to be used, their use will be negotiated with the landowner.

2.4.4.2 Construction Approach

The earthworks and quantities for the project will be designed to cater for future 25 kV electrification of the rail line.

Earthworks will be undertaken using scrapers for the short hauls, with excavators and dump trucks used for long distance earthmoving. The majority of the general fill will be obtained from the cutting excavations and the alignment will be graded to produce a balanced cut to fill.

As the project is within the pre-concept design phase, detailed information is not available regarding the type of equipment, volume or source of construction materials or storage locations. Investigations will be undertaken to determine potential sources of rock and gravel.

The project will require large quantities of ballast material and capping material. It is expected that ballast will be sourced from commercial quarries in the region. Capping material will be sourced from either cuttings within the preferred rail corridor or from borrow pits located close to the rail corridor. Haulage routes are yet to be determined. Discussions with the relevant Regional Councils and the Queensland Department of Main Roads (DMR) Northern Region will be undertaken to confirm haulage routes.

The volume of water required for construction activities and available sources have yet to be determined. Sufficient water will be sourced and stored for use for dust control, weed wash down bays, general construction activities, rehabilitation and for the construction camp facilities.

2.4.5 Rail Operations

The initial shipment of 25 Mtpa of washed coal would require the use of four train sets (six locomotives and 180 wagons) operating on a 24 hour cycle, over a six day week and a 50 week year. The expansion in volume to 50 Mtpa is expected to take place over three years.

The future expansion of the rail to 100 Mtpa is expected to occur over a ten to twenty year period.

A rail maintenance and provisioning facility will be constructed on a site to be determined adjacent to the railway to service the locomotives and rolling stock. It is expected that this facility will comprise a provisioning facility for refuelling and servicing locomotives, a rollingstock inspection and maintenance depot, as well as facilities for track and signalling workers.

2.4.6 Affected Infrastructure

Major infrastructure crossed by the preferred railway alignment is outlined in **Table 6**. It is proposed to negotiate infrastructure crossing arrangements with the relevant owners of the infrastructure listed in **Table 6**.

Table 6: Existing Infrastructure Affected by the Proposed Railway Route

Infrastructure	KP*	Owner^
Roads		
Clermont – Alpha Road	13.2 and 72.5	DMR
Lagoon – Pioneer Road	91.8	IRC
Clermont – Laglan Road	119.6	IRC
Gregory Development Road	145.0	DMR
Suttor Development Road	265.7 and 307.5	DMR
Pipelines		
North Qld Gas Pipeline	281.7	Enertrade
Mines		
Newlands Mine	310.5 – 313.0	Xstrata

*KP = Kilometre Point; ^DMR = QLD Department of Main Roads, IRC = Isaac Regional Council.

2.5 Stockyard and Transfer Infrastructure

2.5.1 Location

The stockyard and transfer infrastructure is to be located within the APSDA, located adjacent to the existing Port of Abbot Point. Vehicle access to the APSDA is currently available via the Bruce Highway and the Abbot Point Road.

2.5.2 Infrastructure Characteristics

The operation of the stockyard and transfer infrastructure will require associated services such as all-weather road access, raw and potable water supply, electricity supply and communications. The nature of these needs will be determined during the feasibility study phase of the project.

The proposed stockyards and infrastructure will contain the following components:

- Coal receival stations;
- In-loading conveyors;
- Coal stockpile stackers;
- Coal stockyard;
- Coal stockpile reclaimers;
- Out-loading conveyors;
- Surge bins; and
- Rail loop.

Coal will be transported to the coal terminal in bottom dumping rail wagons, which will discharge the coal into a dump station situated on the rail loop. Coal from the rail dump station will be transported to coal stockpiles by a conveyor system and a stacker / reclaimer. The coal stockyard will initially be 2,500 m in length and 160 m in width and capable of being expanded in response to increased demand. Coal will be reclaimed from the stockpiles, placed on conveyors and transported to the Multi Purpose Cargo Wharf for loading onto the export ships.

2.5.3 Construction Workforce

It is expected that the construction of the stockyard and associated infrastructure will require some 200 workers onsite over an eighteen month construction period. This figure will vary depending on the staging of works and will be confirmed at the completion of pre-feasibility design studies.

It is Waratah Coal's preference to use the local workforce, and if needed, supplemented by a fly in / fly out workforce utilising existing temporary facilities at Abbot Point. Discussions regarding the potential opportunities relating to the workforce will be undertaken with Government during the course of the feasibility studies.

2.5.4 Operational Workforce

Approximately 100 permanent operational staff, operating 24 hours a day will be required for the stockyard and associated infrastructure. Additional personnel will be required onsite during maintenance periods and there will be numerous contractors to assist and maintain the ongoing demands of the facility.

2.6 External Infrastructure Requirements

The successful development of the proposed project will be contingent upon the development of the following infrastructure.

2.6.1 Mine Water Supply Pipeline

The proposed mine requires the reliable supply of 7,500 ML per annum. It is proposed that this amount of water be sourced from a variety of options including Lake Dalrymple on the Burdekin River, 85 km southwest of Townsville or water retention infrastructure on the Belyando River. The Burdekin River Dam holds 1,860,000 ML at full capacity. The lake is the water storage that supplies water to

the Burdekin Irrigation Area downstream and has sufficient spare capacity to act as a reliable, long-term, water supply source for the mine. The Belyando catchment has the potential annual yield of approximately 460 GL annually.

2.6.2 Stockyard and Transfer Infrastructure Transmission Line

It is expected that the stockyard and transfer infrastructure will require an authorised demand of approximately 50 MW. It is proposed to source this power from the High Voltage Grid via a new transmission line that links the stockyard and transfer infrastructure with the nearest power source. Studies will be undertaken during the prefeasibility assessment to confirm the ideal connection point. These studies will involve extensive consultation with various power supply agencies and will be undertaken in the context of the Government proposed common user infrastructure and Multi Purpose Wharf facility.

2.6.3 Stockyard Water Supply

The stockyards will require water for dust suppression and general washdown of equipment, and potable water for workforce use. It is expected that some 800 ML per annum will be required to service these needs. This volume will be confirmed in the feasibility stage of the project. The EIS will consider a range of options for harvesting water for the stockyard; however, the likely scenario will be a pipeline tapping into the existing Port of Abbot Point infrastructure.

2.6.4 Stockyard Access Road

The existing vehicle access to the proposed stockyard is via the Bruce Highway or the Abbot Point Road.

2.7 Project Timetable

It is expected that the project development work will be completed and the first coal will be shipped from the new port in 2013. The proposed schedule milestones are presented in **Table 7**.

Table 7: Key Project Milestones

Key Milestones	Target Dates
Commencement of SDPWOA EIS process*	Q4 2008
Completion of pre-feasibility studies	Q4 2009
Completion of EIS and development approval processes	Q2 2011
Financial Close	1H 2011
Commencement of onsite construction works	2H 2011
First coal shipment	2H 2013

* Subject to Coordinator-General's decision.

3. ENVIRONMENTAL AND PLANNING APPROVAL REQUIREMENTS

Due consideration of the likely environmental impacts of the proposed development under various Commonwealth, State and Local legislation, guidelines and policies is a project requirement. This section identifies key legislation and identifies other documents and guidelines relevant to the environmental management and compliance of the Project.

3.1.1 Commonwealth Government

3.1.1.1 Environment Protection and Biodiversity Conservation Act 1999

At the Commonwealth level, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is applicable to those developments / actions that are likely to impact on a matter of National Environmental Significance (NES). Matters of NES likely to be affected by the project include threatened species and ecological communities, and migratory species protected under international agreements.

A referral will be submitted to the Federal Environment Minister to seek a determination on the existence of controlled actions under the Act and the level of environmental assessment required.

3.1.1.2 Native Title Act 1993

The *Native Title Act 1993* (NTA) provides recognition and protection of native title, establishes ways in which future dealings affecting native title may proceed and acts as a mechanism for determining claims to native title.

Several native title claims have been submitted on land required for the project. Traditional owners that are potentially relevant to the project are indicated in **Table 8**. No active native title claims exist over the stockyard facility.

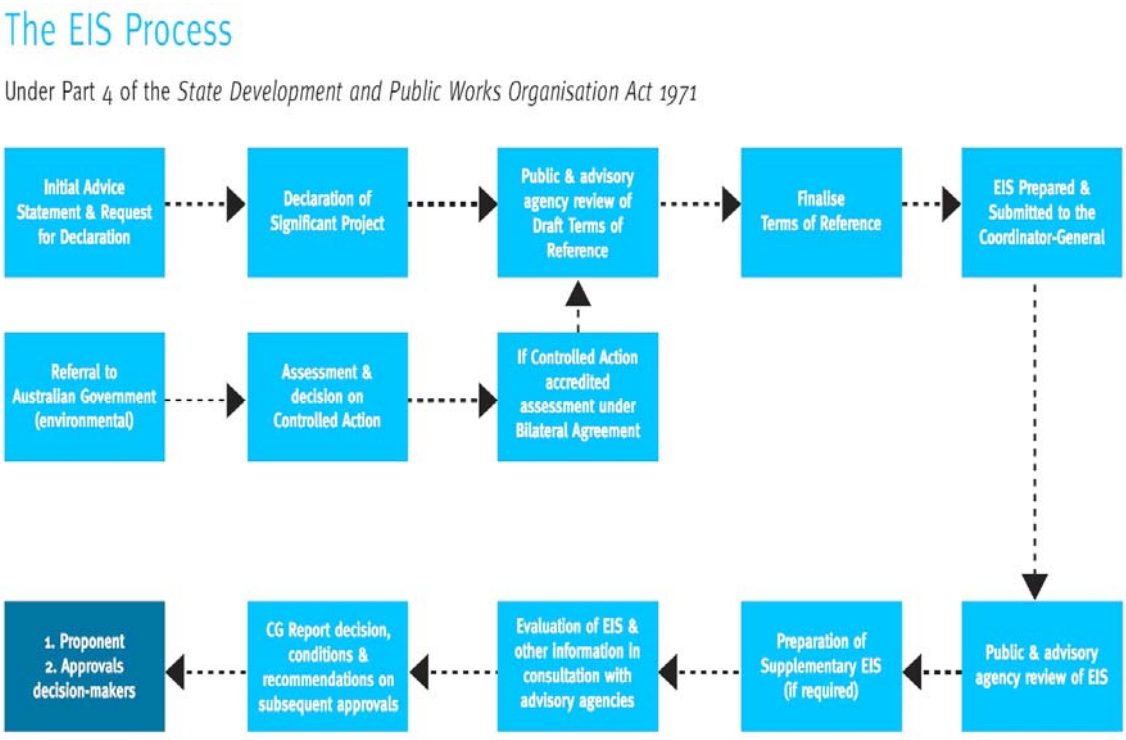
Table 8: Native Title Claims Submitted on Land within the Project Area

Claim	Status	Mine	Water Supply Pipeline	Railway Options
Wangan and Jagalingu People	Active	Y	Y	Y
Jangga People	Active		Y	
Birri People	Active			Y
Wirri People Core Country Claim	Active			Y
Baradam Bama, Kabalbara and Yetimarla People 4	Active			Y
Gia People	Active			Y

3.1.2 State Government

3.1.2.1 State Development and Public Works Organisation Act 1971

Waratah Coal is seeking to have the project declared a "**significant project**" under the SDPWOA and to follow the EIS process defined by this Act.



3.1.2.2 Integrated Planning Act 1997

Approvals for development will be sought under the *Integrated Planning Act 1997* (IPA) for various project components. It is expected that these approvals will involve a material change of use of premises, reconfiguring a lot and the carrying out of building, operational, plumbing or drainage work.

3.1.2.3 Environmental Protection Act 1994

Approvals will be sought for Environmentally Relevant Activities (ERAs) under this Act. It is expected that the project will require Environmental Authorities for the following environmentally relevant activities (ERAs):

- ERA 21 (c) – construction of a pipeline;
- ERA 21 (e) – operation of a pipeline;
- ERA 72 – operating any railway for refuelling and maintaining and repairing rolling stock; and
- ERA 74 – Stockpiling, loading or unloading of goods in bulk - commercially loading, unloading or stockpiling materials or goods, in association with an activity mentioned in item 71, using a crane, conveyor, pump or other similar way at a rate of more than 100 t/day.

The project will also require a project Environmental Authority (Mining lease) for a level 1 mining project as specified under section 154 of the EP Act.

3.1.2.4 Coastal Protection and Management Act 1995

An approval for tidal works may be required under this Act. Tidal works associated with the proposed port facilities may include construction within tidal areas and / or the disposal of dredge material within tidal areas.

3.1.2.5 Fisheries Act 1994

A permit will be sought for activities which result in the removal, destruction or damage to marine plants under Section 51 (1) of this Act.

3.1.2.6 Vegetation Management Act 1999

The proposed development will involve the clearing of native vegetation listed under this Act and will require a clearing permit approved by the Department of Natural Resources and Water.

3.1.2.7 Nature Conservation Act 1992

The proposed development will affect lands included in a National Park and habitats containing endangered, vulnerable and rare species listed under this Act. The project will also result in the removal of, or interference with, protected animals, plants or areas and is expected to require relevant licences and permits under this Act.

3.1.2.8 Aboriginal Cultural Heritage Act 2003

This Act outlines the duty of care a proponent has when carrying out an activity that will or has the potential to harm Aboriginal cultural heritage. The project intends to undertake the preparation of Cultural Heritage Management Plans with the traditional owners affected by the project.

3.1.2.9 Other Queensland Legislation

It is expected that the project will be subject to the requirements of other Acts, policies and regulations including:

- *Land Act 1994*;
- *Marine Parks Act 2004*;
- *Mineral Resources Act 1989;*
- *Queensland Heritage Act 1992*;
- *Transport Infrastructure Act 1994*;
- *Transport Operations (Marine Pollution) Act 1995*;
- *Water Act 2000*;
- *Land Protection (Pest and Stock Route Management) Act 2002*; and
- *State Planning Policy 2/02: Planning and Managing Development Involving Acid Sulfate Soils.*

3.1.3 Local Government

3.1.3.1 Local Government Act 1993

It is expected that various Local Authority approvals under Local Laws will be required. The Councils to be affected by the project are identified in **Table 9**.

Table 9: Local Authority Areas Affected by the Proposed Project

Local Authority	Project Component			
	Mine	Railway	Stockyards	Water Pipeline
Barcaldine Regional Council	✓	✓		✓
Isaac Regional Council		✓		✓
Whitsunday Regional Council		✓	✓	

3.2 Proposed Environmental Studies

It is proposed that a range of environmental studies will be required to support the application process including the following:

- Acid sulfate soils investigation;
- Air quality modelling and assessment;
- Greenhouse gas assessment;
- Environmental noise assessment;
- Ecological assessments;
- Soil and groundwater contamination assessment;
- Water quality monitoring and assessment;
- Traffic and transportation study;
- Socio-economic assessment;
- Hazard and risk assessment; and
- Cultural heritage assessments.

4. EXISTING ENVIRONMENT AND POTENTIAL IMPACTS

4.1 Biogeographical Setting

The project elements will affect lands located in the Brigalow Belt North, Desert Uplands and the Einasleigh Uplands Bioregions.

4.1.1.1 Brigalow Belt North Bioregion

The proposed mine water supply pipeline alignment, the eastern portion of the Waratah Coal tenements and the majority of the railway alignment are located within this bioregion. It is characterised by a mixture of undulating to rugged ranges, coastal areas and alluvial plains. The project will likely transect two major river systems - the Belyando and the Suttor Rivers.

The bioregion has a semi-arid to tropical climate with dry winters and wetter summers. Average annual rainfall ranges from 400 mm in the south-west to 1200 mm on the eastern coast and generally decreases from north to south and with distance inland. Temperatures in the bioregion range from 22 – 38^{0}C in summer to 8 – 22^{0}C in winter. It contains a matrix of rangelands, savannas, brigalow, grasslands and eucalypt woodland intermixed with improved pasture and cropping lands.

4.1.1.2 Desert Uplands Bioregion

The western part of the potential coal mining area is located in the Desert Uplands bioregion. The bioregion straddles the low hills of the Great Dividing Range and is dominated by sandstone ranges and sand plains. It lies on the eastern margins of the Great Artesian Basin (GAB) and encompasses two major internal drainage basins, Lake Galilee and Lake Buchanan.

The climate of the bioregion is semi-arid with variable summer-dominant rainfalls that decline from east to west. Average annual rainfall in the region ranges from 400 mm to 800 mm and mean temperatures range from 23 – 35.8^{0}C in summer to 7.7 – 22.5^{0}C in winter. Vegetation ranges from brigalow in the east to gidgee and blackwood and open grasslands in the west.

4.1.1.3 Einasleigh Uplands Bioregion

The northern part of the proposed mine water supply pipeline alignment transects the southern most extent of the Einasleigh Uplands bioregion. It is characterised by a series of rugged hills and ranges, dissected plateaus, and alluvial and sand plains. The streams to the east of the Great Dividing Range flow to the Burdekin River.

The bioregion has a hot to warm climate with dry winters and wetter summers associated with the passage of tropical cyclones across the coast. Mean temperatures range from 20.1 – 36.5^{0}C in summer and 11 – 25.4^{0}C in winter and the average annual rainfall is between 400 mm and 1000 mm. Vegetation is dominated by eucalypt woodlands with patches of open forest present in the wetter east.

4.2 Terrain

4.2.1 Description

4.2.1.1 Topography

The topography of the proposed mining area is gently undulating and is traversed by some minor creek systems.

The preferred railway route starts at a point approximately 38 km NNW of the town of Alpha and extends in a north-easterly direction to Abbot Point on the central Queensland Coast. The route generally traverses gently undulating to flat land and crosses a number of major drainage systems including the Belyando, Suttor and Don rivers. The route crosses the Leichardt Range near Newlands and the Clarke Range at Collinsville.

The high features of the APSDA are comprised mostly of Palaeozoic Era intrusives. Mt Roundback and Mt Little are the prominent features with elevation of 728 m and 412 m respectively. The low areas of the APSDA make up the Caley Valley Wetland. Run-off from the elevated features drains via numerous creeks and channels across low lying, reasonably flat land into the wetlands of the estuaries at the mount of Euri Creek and Don River. Aside from the wetland, the APSDA generally is on elevated land (above 5 m AHD) that has slopes less than 10%.

4.2.1.2 Geology

Geologically, the Galilee Basin covers an area of 247,000 km^2 in Central Queensland and is entirely intracratonic, filled with Late Carboniferous to Middle Triassic sediments. These rocks are dominantly fluvial in origin with minor glacial material developed at the base of the succession. The Galilee Basin contains extensive coal deposits, largely at depth, except for the eastern margin where the proposed coal mine is situated.

The proposed railway line for the most part traverses Permian sediments comprising quartz sandstones, conglomerates and siltstones. The floodplains comprise land that has been covered by alluvial (fluviatile) deposits during the Tertiary – Quaternary periods. These deposits are characterised by silt, clay, sand and gravels.

Quaternary deposits and mud flats consisting of fine to medium grained unconsolidated sand are present within the low lying portions of the APSDA. Both units are interspersed with the alluvial deposits which form the main land unit of the broader area. Older deposits are found in the higher areas of the APSDA and these consist of various intrusives such as diorite, quartz diorite and granite.

The soils of the coal tenements typically consist of loams interspersed with pockets of cracking clays, sandy duplex and gilgai clay soils.

The soils traversed by the railway corridor consist of the following types:

- sandy or loamy red earths with some yellow earths;
- grey or light grey deep clays with loamy duplex soils;
- deep grey clays (Belyando river floodplain);
- shallow red loamy duplex soils with occasional areas of coarse gritty sands;
- loamy duplex soils;

- deep dark clays;
- shallow to moderately deep dark grey or dark brown cracking clays;
- sandy to loamy duplex soils with moderately deep A horizons;
- sandy to loamy duplex soils;
- red and brown friable earths;
- shallow stony-surfaced dark clays, with sandy or loamy often gritty duplex soils on the weathered granite surface;
- deep cracking clays showing slight Gilgai formation;
- leached gravelly loams;
- leached gleys; and
- siliceous sands.

The main surface soil types present within the APSDA consist of deep homogenous fine to medium grained sands. The Don River catchment is predominantly underlain by granites and partly covered with areas of alluvial sand, silt, clay and gravel. The soils associated with the northern portion of the APSDA are described as non-cracking clays and massive earths, becoming red and yellow duplex to the south (WBM Oceanics Australia, 2006). Areas south east of the Caley Valley Wetlands to Merinda are dominated by alluvial deposits and include saline soils in association with mangroves and intertidal flats; where as areas to the south west of the Caley Valley Wetlands area are mainly estuarine, with the dune barriers in this locale consisting of Quaternary coastal deposits (Environment Australia, 2001). Rockland, hills and mountains are identified around Mt Little and Mt Roundback. The flood plain areas west of Mt Little contain prairie soils (Aldrick, 1988).

4.2.2 Potential Impacts and Mitigation Measures

4.2.2.1 Topography and Geology

Geological and geochemical studies will be carried out over the proposed mine site to determine the need for blasting, to determine the acid forming potential of overburden and coal rejects, and to evaluate the salinity, sodicity and Acid Rock Drainage of the site. These investigations will also identify any toxic elements concerns for revegetation or to water resources and any potential implications to the disposal of overburden and coal rejects or proposed mining activities. Residual storage areas will be sited on areas of favourable geology.

4.2.2.2 Soils

A soil survey of the proposed project areas will be undertaken as part of the EIS to confirm soil characteristics. More intensive soil surveys will also be conducted during mining operations to plan topsoil stripping and storage operations.

Vegetation clearing will be minimised where practicable, and construction planning will take into account weather conditions to minimise soil disturbance and erosion. Root stock will be retained in cleared areas to maintain soil stability and vehicle movement will be restricted where practicable to existing roads, tracks and cleared areas to minimise disturbance to adjoining areas. Unsealed access tracks and hardstand areas will be graded and sediment control devices (e.g. contour banks)

installed to minimise erosion and sediment loading to local waterways. Sediment control devices will be implemented and maintained and erosion prone areas will be monitored to identify issues of soil disturbance and erosion and enable appropriate mitigation measures to be undertaken.

Topsoil and subsoil in the mine will be stripped separately and stockpiled in reverse order on overburden dumps. Soil stockpiles will be shaped to a gentle gradient and covered with material or replanted with native pastures to minimise erosion and retain the biological activity in the soil. Topsoil and subsoil will be replaced in reverse order and ripped to reduce compaction. Replanting of these areas will be undertaken using native pasture grasses to improve soil stability and reduce erosion. Native shrubs and trees will be planted in areas where ongoing maintenance or operation works are not proposed and once the pasture grasses have become established.

Issues relating to land management of farming properties acquired for the project will be addressed and strategies developed prior to construction to ensure the ongoing productivity of this land and reduce erosion and weed dispersal. Management of these properties will be incorporated into the rehabilitation and decommissioning programs.

The rehabilitation process will be developed as part of the EIS process and will be designed to return land to a stable, self-sustaining and maintenance-free state. Rehabilitation works may include but are not limited to, revegetation with native species, replacement of topsoil and removal of waste materials generated by project activities.

4.3 Land Use, Tenure and Native Title

4.3.1 Description

The majority of the proposed mine site and the water supply pipeline corridor are located on cleared farmlands of leasehold tenure specialising in beef production. The railway alignment is predominantly located on freehold land used for beef production and pasture crops. Parcels of leasehold land and State forestry reserve are present along the preferred railway corridor, especially along Route 2. The stockyard and transfer infrastructure are situated within the APSDA under the control of the Department of Infrastructure and Planning.

A search of the National Native Title Tribunal database identified a number of native title claimant groups with an interest in the localities that will be affected by the project and these are outlined in **Table 8**.

4.3.2 Potential Impacts and Mitigation Measures

4.3.2.1 Land Tenure

The proposed mine will be situated on a mining lease created for the purpose and will be situated on lands purchased for the project. The railway and water supply pipeline will be aligned to avoid sensitive environmental areas and the sterilisation of resources as far as is practicable and will require an easement to be granted over the lands traversed. The final alignment of the railway and water supply pipeline will be negotiated with landowners and other affected parties during the EIS phase of project.

A native title assessment of lands required for the Project will be undertaken in accordance with the NTA and where native title is found to exist, appropriate land use and access agreements will be negotiated with the relevant traditional owners of the lands in question.

4.4 Air Quality

4.4.1 Description

The proposed project is generally located in areas that are predominantly rural in character and typically support grazing and some agricultural activities. Air emissions from these activities will generally consist of dust from cultivation and harvesting activities, exhaust emissions from farm machinery, and greenhouse gases from cattle raising. Part of the preferred railway traverses lands used for coal mining activities. Emissions from these activities include dust, and exhaust gases from site equipment and processing activities.

The proposed stockyard is located within the recently declared APSDA. This area will develop into a new industrial precinct for large scale industries. The APSDA adjoins the existing Port of Abbot Point; a major coal export port. Emissions within the area are typically associated with the coal handling operations at the port; however, this is expected to change as new uses develop within the APSDA.

The nearest Environmental Protection Agency (EPA) air quality monitoring station to the project is located at West Mackay. Data from this site is not considered representative of the project area.

4.4.2 Potential Impacts and Mitigation Measures

There is no existing air-shed, air quality, model available for the entire project area. An examination of existing and predicted air quality will be undertaken as part of the EIS process. Air quality data associated with the proposed Port of Abbot Point expansion studies will also be assessed during the EIS studies. The information obtained will be used to assess the potential impact of the project on air quality during operation and determine appropriate air emission limits to be used in the detailed design of the project.

Dust generation will be the main impact associated with construction activities. Watering trucks will be used to suppress dust on the construction sites to minimise this impact.

Air emissions including greenhouse gas emissions may be generated from equipment and vehicles during construction activities and from mine and stockyard operations. Management procedures for the use and maintenance of all equipment and vehicles used on construction sites will be developed and implemented to mitigate this impact. Regular monitoring and inspection of vehicles and equipment will be undertaken to ensure they are in sound working order.

The EIS will consider direct greenhouse gas emissions associated with the construction and operation of the project infrastructure and will also consider indirect emissions associated with coal consumption. Measures to reduce greenhouse gas emissions will be identified and integrated into the operational procedures as part of the EIS process.

Given the size of the project area and isolated nature of potential emission generation, the impacts on air quality associated with construction activities are expected to be low.

4.5 Noise and Vibration

4.5.1 Description

The existing noise environment is typical of rural areas. Noise emissions likely to impact upon these areas include coal / overburden haulage, plant equipment and vehicles, blasting from mining activities

and light vehicle traffic movement. Monitoring sites will be established near these noise receptors as part of the EIS process to identify noise and vibration issues.

The townships of Cairo and Wyena are located near to the preferred railway alignment. Noise sensitive receptors along the existing rail corridor and within the wider study area include Byerwen, Havilah, Collinsvale and Merinda. Noise emissions likely to impact upon these areas include plant equipment and vehicles and light vehicle traffic movement during construction and noise associated with train movement during operation. Monitoring sites will be established near these noise receptors as part of the EIS process to identify noise and vibration issues.

The nearest township to the proposed stockyards and transfer infrastructure is Merinda located 9.2 km south-east of the site. Noise emissions associated with the project area are likely to include plant equipment and vehicles and light vehicle traffic movement during construction and operation; however, they are unlikely to significantly affect the township of Merinda due to the separation distance.

4.5.2 Potential Impacts and Mitigation Measures

Noise emissions have the potential to impact upon neighbouring properties, communities and local wildlife through disruption. At this stage, there is little existing noise emission data; however, noise levels will be monitored prior to commencement of the project to quantify typical noise levels. Noise monitoring stations will be established throughout the project area concentrating near noise sensitive receptors.

Noise emissions will be managed in accordance with the guidelines outlined by EPA (2004). Emissions will be monitored during the construction process and during operation of the mine and stockyard facilities. Mitigation measures to reduce noise emissions will be identified during the EIS process. A complaint resolution process will also be implemented for all potential impacts from the proposed project.

4.6 Terrestrial Ecology

4.6.1 Description

The ecological values of the project's zone of influence have been identified through a desktop review of existing baseline information. Database searches were used to identify threatened vegetation communities, flora and fauna species, and other protected areas (including wetlands) within a 10 km radius of the proposed rail route and stockyard location.

4.6.1.1 Ecological Communities and Regional Ecosystems

Table 10 summarises the ecological communities and REs identified within the project area.

Table 10: Threatened Ecological Communities and Regional Ecosystems within the Project Area

Ecological Community / Regional Ecosystem	Mine			Mine Water Supply Pipeline	Railway Option 1	Railway Option 2	Stockyard Facility
	Total	EPC1040	EPC1053				
Threatened Communities Listed under the EPBC Act							
Brigalow (subdominant and co-dominant)	4	3	1	2	4	3	0
Great Artesian Basin Dependent Native Community	3	0	0	0	0	0	0
Semi-Evergreen Vine Thicket	0	0	0	0	0	0	1
Bluegrass Dominant Grassland	0	0	0	0	3	0	0
TOTAL	7	3	1	2	7	3	1
Regional Ecosystems Listed under the VMA							
Endangered	7	0	2	3	6	4	
Of Concern	12	0	3	6	10	7	2
Not of Concern	82	2	2	31	23	20	2
TOTAL	101	2	7	40	39	31	4
At Threshold Regional Ecosystems							
	7	0	1	4	7	5	2
Endangered (EPA Biodiversity Status) Regional Ecosystems							
	14	1	2	3	6	4	0

4.6.1.2 Caley Valley Wetlands

The Caley Valley Wetland is of national importance (QLD001) and is located adjacent to the proposed stockyards. It has an area of 5,150 ha, extending west to east from Mount Curlewis to Euri Creek and north to south from Bald Hill to Caley Valley Homestead. It comprises a complex continuous wetland aggregation of subtidal and intertidal marine and estuarine wetlands. The wetland also has elements of lacustrine (wetland systems associated with lakes) and palustrine wetland systems (non-tidal wetland systems) (Cowardin, 1979). The Caley Valley Wetland is an example of a wetland occurring on a tropical prograding coast (i.e. a coastal region in which water has withdrawn from parts of the land surface due to a fall in sea level relative to the land (Coastal Zone Australia, 2005). The wetland contains permanent water, a range of wetland habitats, rich food resources and sheltered fauna roosting and brooding sites, thus making it significant for waterbirds (Blackman *et al.*, 1999).

4.6.1.3 Other Protected Areas

The mine water supply pipeline will transect the Scartwater Aggregation, a Directory of Important (DOI) wetland on the floodplain of the Suttor River, and the Epping Forest National Park (Scientific) which is the only known home range of the Commonwealth and State Endangered Northern Hairy-nosed Wombat (*Lasiorhinus krefftii*).

The proposed stockyard facility may encroach on the Abbot Point – Caley Valley Wetlands, which is listed under the Directory of Important Wetlands. No wetlands of international significance (i.e. Ramsar-listed) are present within the project area.

The proposed rail options do not transect any wetlands of international significance (i.e. Ramsar-listed), nature refuges, national parks or conservation parks. Route 2 will; however, transect the Blair Athol State Forest between KPs 113 – 135 and the stockyard facility is located adjacent to the Abbot Point – Caley Valley wetlands which are recognised for their significance under the Directory of Important Wetlands.

Shipping activities will take place in the Great Barrier Reef World Heritage Area and Great Barrier Reef Marine Park; however, these will be assessed as part of the studies considering the future expansion potential of the Port of Abbot Point.

4.6.1.4 Threatened Flora and Fauna Species

Threatened flora and fauna species listed under the EPBC Act and / or *Nature Conservation Act 1992* (NCA) known from the wider study area have been identified from database searches (Table 11).

Table 11: Threatened Flora and Fauna Species Likely to Occur within the Project Area

Ecological Community / Regional Ecosystem	Mine	Mine Water Supply Pipeline	Railway Option 1	Railway Option 2	Stockyard Facility
Flora					
Listed under the EPBC Act and NCA	3	2	12	12	12
Listed under the EPBC Act only	1	1	3	3	3
Listed under the NCA only	11	9	1	1	1
TOTAL Database Search	15	12	17	17	17
TOTAL Likely to Occur in Project Area*	12	10	9	9	6
Fauna					
Listed under the EPBC Act and NCA	9	10	7	7	7
Listed under the EPBC Act only	2	3	5	5	5
Listed under the NCA only	14	12	25	25	25
TOTAL Database Search	16	25	37	37	37
TOTAL Likely to Occur in Project Area*	13	20	16	16	8

*Likelihood of occurrence based on habitat preference.

4.6.1.5 Flora and Fauna Species of Other Conservation Significance

Flora and fauna species of other conservation significance include all species listed as Migratory or Marine under the EPBC Act and marine plants protected under the *Fisheries Act 1994*. The number of Migratory and Marine species likely to occur within the project area is summarised in Table 12.

Marine plants including mangroves, saltbushes and seagrasses have been identified from database searches for the railway and port facility areas. Marine plants are likely to occur along watercourses, the coastline and in swamp areas transected by the eastern portion of the railway and the entire port facility.

Table 12: Migratory and / or Marine Species Likely to Occur within the Project Area

Threatened Species	Mine	Mine Water Supply Pipeline	Railway Option 1	Railway Option 2	Stockyard Facility
Listed as Migratory and Marine	20	21	2	2	2
Listed as Migratory only	25	25	53	53	53
Listed as Marine only	33	34	18	18	18
TOTAL Database Search	78	80	73	73	73
TOTAL Likely to Occur in Project Area*	68	77	10	10	16

*Likelihood of occurrence based on habitat preference.

4.6.1.6 Declared Weed and Animal Pest Species

The project area contains some Queensland declared plant and animal species, including species listed as Weeds of National Significance under the National Weed Strategy. **Table 13** details the potential number of declared plant and animal species that will potentially be encountered during the project.

Table 13: Declared Plant and Animal Pest Species

	Mine Site and Mine Water Supply Pipeline	Railway Option 1	Railway Option 2	Stockyard Facility
Declared Weeds	7	2	2	2
Weeds of National Significance	3	0	0	0
Declared Animal Pests	5	0	0	0

4.6.2 Potential Impacts and Mitigation Measures

Potential impacts on ecological communities and regional ecosystems, protected areas, and threatened flora and fauna species will be associated with the clearing of vegetation for mining, for the railway and pipeline corridors, and for the transfer infrastructure within the APSDA.

Detailed flora and fauna studies will be undertaken as part of the EIS process to confirm communities and species likely to be impacted by the project.

Vegetation clearing will be undertaken in accordance with best practice to minimise the potential impact. Rehabilitation programs will be developed and implemented to revegetate and regenerate native vegetation as necessary.

Protected areas will be avoided where practicable through realignment of proposed pipeline and railway corridors. In view of this ability to relocate infrastructure, impacts on protected areas are expected to be minimal.

The clearing of vegetation has the potential to impact upon flora and fauna species through direct loss or injury to species during construction activities and indirectly through the loss or degradation of habitat areas, fragmentation of habitat areas and loss of connectivity.

Construction activities may impact upon fauna species through increased disturbance from construction noise, vehicle movements and dust production.

4.7 Water Resources

4.7.1 Description

4.7.1.1 Surface Water

The mine is located within the Belyando / Suttor River catchment. This catchment encompasses an area of 73 335 km^2 and is bounded to the west by the Great Dividing Range and to the east by the Denham and Drummond Ranges. The Belyando River flows in a northerly direction to join the Suttor River in its lower reaches. The mine water supply pipeline will take water from Lake Dalrymple. This lake is considered by DEWHA to be a water resource of national significance. It is used for recreational purposes including fishing and water skiing, as well as providing water for urban centres, mines, industry and agriculture.

The proposed rail options transect five major catchments, five major rivers and numerous major creeks. The catchments include the Belyando River (west), Burdekin and Isaac Rivers (central) and Bowen and Don Rivers (central east). The APSDA is wholly located within the Don River catchment which is characterised by a number of major creeks with a general flow direction south to north discharging into the sea. Whilst no major rivers or creeks are present on the stockyard site, the proposed stockyard site is located nearby to the Caley Wetlands.

4.7.1.2 Groundwater

The potential mining area is situated in the GAB (to the west) and Tasman Basin (to the east). The mine water supply pipeline lies entirely within the Tasman Basin. Groundwater of the GAB within the vicinity of the proposed project area flows westward to the south-west of the Basin. Recharge by infiltration of rainfall into the outcropping sandstone aquifers also occurs mainly along this eastern margin of the GAB.

Water quality of the main aquifers of the GAB is generally good with Total Dissolved Solids ranging from 500 – 1 500 mg/L although sodium levels and pH can be high making the water unsuitable for irrigation.

The railway and water supply pipeline lies wholly within the Tasman Basin; however, little information is available on the extent and quality of groundwater resources within the area. The extent and distribution of groundwater resources will be identified and discussed in further detail as part of the

EIS process. Studies will be undertaken during the EIS process to examine the extent and nature of groundwater resources within the port facility.

4.7.2 Potential Impacts and Mitigation Measures

4.7.2.1 Surface Water

Studies on surface water hydrology and water quality will be undertaken as part of the EIS process. Project activities will be designed to maximise the recycling of water, and water harvesting from the project area. These studies will consider *inter alia* the impact of flooding and storm surge on the various project components, in addition to potential for the mine and railway to exacerbate flooding in waterways as a result of project infrastructure including waterway crossings and stream diversions.

Mining activities will be designed to ensure downstream requirements (environmental and community) are met during the construction and operation processes in drought conditions. Water quality and flow regimes of watercourses downstream of the project area will be monitored to assess the impact of mine activities on these watercourses. Disturbance to watercourses will be minimised and project infrastructure will be designed to minimise changes to topography and drainage. Watercourse crossings and stream diversions will be designed to maintain flows and limit water contamination. Mitigation measures to maintain acceptable water quality levels and reduce algal blooms in dam water will be identified during the EIS process.

Hazardous substances, wastewater and other waste materials used and generated by the mine project will be handled, stored and disposed of in accordance with EPA guidelines. Procedures for the management of these materials will be further discussed as part of the EIS.

Potential impacts associated with the construction of the railway and pipeline alignments on surface water resources are expected to be similar to those identified for the mine project area. Activities will be designed to reduce erosion and sediment loading to waterways, minimise water contamination and disturbance of channels. Dumping of wastes on site during maintenance activities will be strictly prohibited.

Construction activities associated with the proposed stockyards and transfer infrastructure are expected to generate similar impacts on surface water resources to the mine construction. The soils within the APSDA may have the potential to generate acid when exposed to air. Measures will be put in place to manage any acid sulfate disturbed by construction activities within the APSDA. Onsite treatment facilities for wastewater generated by the project will be designed and constructed in accordance with the EPA requirements. The water quality of treated effluent will be monitored regularly to maintain compliance with EPA guidelines.

4.7.2.2 Groundwater

Incorrect handling and disposal of waste materials during the construction and operation phases have the potential to contaminate groundwater resources through seepage particularly in areas where groundwater comes to the surface i.e. the western portion of the mine project area. Groundwater resources may also be impacted upon during mining activities as drilling and excavation works are likely to intersect aquifers. Water may also be extracted by the mining process to be used for such purposes as coal washing and dust suppression.

4.8 Cultural Heritage

4.8.1 Description

4.8.1.1 Indigenous Heritage Values

Indigenous language and tribal groups who may have an interest in the proposed project area are listed in **Table 8**. Heritage studies will be undertaken as part of the EIS process to identify indigenous heritage values relating to the project area.

4.8.1.2 European Heritage Values

No European heritage sites are identified on heritage registers within the project area. The region has a diverse and rich history of mining and agriculture and it is possible that significant sites may be present. Detailed heritage studies will be undertaken as part of the EIS to identify potential heritage sites and areas.

4.8.2 Potential Impacts and Mitigation Measures

Construction activities, and operational mining activities, have the potential to disturb or damage significant heritage sites or artefacts. Project infrastructure will be designed and located to minimise the potential impact on identified culturally significant areas. Cultural Heritage Management Plans will be developed with the relevant indigenous stakeholders to ensure the ongoing protection of any Aboriginal heritage sites of significance.

4.9 Waste

4.9.1 Description

Construction and operation activities associated within the project are expected to generate waste materials. Potential waste materials are outlined in **Table 14**.

Table 14: Potential Waste Generated by Project Activities

Construction Phase	Operation Phase
• General domestic garbage from onsite construction workers • Paper, cardboard and timber from packaging • Scrap steel • Greywater and sewage from onsite amenities • Waste hydrocarbons and oily rags from equipment maintenance and refuelling	• Minor waste hydrocarbons and oily rags • General garbage, including putrescibles from the onsite staff facilities (kitchen, offices) • Greywater and sewage from onsite amenities • Paper, cardboard and timber from occasional packaging for spare parts etc

4.9.2 Potential Impacts and Mitigation Measures

Waste materials have the potential to contaminate soil, habitat and water resources and have the potential to harm or injure neighbouring communities and fauna and flora species. The management of wastes generated by the project will be addressed in the project Environmental Management Plan (EMP), which will be developed during the EIS process. The EMP will identify controls, which target

the reduction of generated wastes and ensure that onsite wastes do not enter the environment and minimise subsequent impacts.

4.10 Traffic and Transport

4.10.1 Description

The major roads likely to be utilised to transport materials to the various project areas are the Kilcummin – Diamond Downs Road, the Gregory Development Road, the Suttor Development Road, Collinsville – Elphinstone Road, Bowen Development Road, the Bruce Highway and Abbot Point road. In addition, a number of lesser Local Authority roads will be utilised to gain site access during the construction phase of the project in particular. It is expected that the Central Queensland rail network will also be used to transport construction materials where appropriate.

The ability of the existing infrastructure in the region to meet project transport needs will be examined as part of future project design activities. This will include an assessment of the capacity of existing air transport infrastructure to support fly in / fly out operations.

4.10.2 Potential Impacts and Mitigation Measures

Transport and traffic issues associated with the construction phase of the project will include the transport of heavy and oversize loads, construction plant and equipment, construction materials and camp accommodation, together with workforce movements.

At this stage of the project design, no estimates are available for the likely number and type of transport trips required for the project. Procedures for the movement and transport of vehicles and personnel during the construction and operation of the mine will be prepared to ensure that these traffic movements do not cause unnecessary damage to local or regional roads. Traffic movement on regional and local roads will be minimised where practicable and restricted in areas of high sensitivity where practical. Where the project is likely to affect the operation of a major road, rail or transmission infrastructure the relevant authority will be contacted to discuss the potential impact of the proposed project activities on these areas to minimise disturbance or disruption to services and traffic.

4.11 Socio-economic Aspects

4.11.1 Description

The project is situated in relatively sparsely populated country areas some distance from established townships. The ability of the existing urban areas to provide services and accommodation for the project are limited.

4.11.2 Potential Impacts and Mitigation Measures

The socio-economic impacts of the project during the operational phase are expected to be manageable due to the fly in / fly out operation of the mine and the relatively small permanent workforce associated with the railway and the port. The impacts during construction may be more significant, particularly if local resources are scarce and labour needs to be brought in from other regions. These impacts, including any effects on housing, employment and public services will be assessed during the EIS process.

Interference to land holder activities as a result of the proposed project should be minimal as each affected landholder will be consulted regarding the project to discuss their specific requirements. Waratah Coal commits to working closely with potentially affected landholders to mitigate potential impacts to local land use. Construction activities will not result in the displacement of residents and any displacement to existing forms of land use within these areas is expected to be minor and temporary.

5. ENVIRONMENTAL AND RISK MANAGEMENT SYSTEMS

The approach to be implemented by Waratah Coal is espoused in its environmental and occupational health safety and welfare policy statements. An EMP will be developed for the project during the EIS process, which addresses the relevant environmental risks associated with the construction, operation and decommissioning phases of the project and monitoring requirements. The construction contractors will be engaged on the basis that compliance with the project EMP, development approvals and environmental permits will be a contractual requirement. Waratah Coal will maintain compliance with the EMP and relevant approval conditions through a program of risk-based tools, including onsite audits, documentation reviews and key performance metrics.

5.1 Operation and Maintenance Contract

Waratah Coal proposes to establish an Environmental Management System (EMS) that incorporates the following objectives:

- Safety performance: Ensure that the highest standards of occupational health, safety and risk management are employed at the project sites;
- Environmental performance: Ensure that the highest standards of environmental responsibility are employed at the project sites. Compliance with legislation will be considered the minimum standard and full acceptance by the community in which Waratah Coal operates will be actively pursued;
- Aligned business objectives: Ensure that both Waratah Coal's and its contractors' business objectives are aligned to achieve Waratah Coal's business objectives; and
- Meet reliability and availability goals: Through the utilisation of competent personnel and best practice maintenance, Waratah Coal will achieve the target reliability and availability for the various project components.

At an early stage, Waratah Coal will ensure that the project's contractors will become involved in:

- Hazard identification and Hazard and Operability processes;
- Risk assessment and identification of risk reduction measures;
- Development of an integrated management system and facility operating procedures;
- Developing health, safety and environmental management systems and procedures; and
- Establishing community liaison processes.

By commencing the above tasks in partnership with the project's contractors and in advance of the commencement of operations at the project sites, Waratah Coal intends to proactively seek to identify, manage and mitigate environmental, health and safety, technical and other pertinent risks.

6. STAKEHOLDER ENGAGEMENT

Waratah Coal is committed to a public consultation program as part of the project approvals process and intends to formulate a consultation program, which provides opportunities for active community involvement and education through an inclusive program.

The public consultation process would identify broad issues of concern to local community and interest groups at all stages including project planning, construction, commissioning, operations and final decommissioning.

The key objectives of the developed consultation program will be to:

- Inform the different interest groups about the project proposal;
- Seek an understanding of interest group concerns about the proposal;
- Explain the environmental impact assessment process and indicate how public input might influence the final recommendations for the project;
- Provide an understanding of the regulatory approval process;
- Seek local information and input into the project; and
- Provide the community with a sense of ownership in the project.

The public consultation program would include public meetings, interest group meetings, production of regular summary information and updates and other consultation mechanisms for encouraging and facilitating active public consultation. A list of affected persons and interested stakeholders would be developed.

Ultimately, the consultation would establish:

- The project's ongoing program for communicating and consulting with the public and stakeholder groups during the course of the project; and
- Appropriate project responses to the issues and suggestions of stakeholders and members of the public, including potential project design modifications aimed at mitigating or managing environmental impact issues.

To date, Waratah Coal has undertaken preliminary consultation with select government agencies, including the Prime Minister's Officer, the Queensland Premier's Department, the Department of Infrastructure and Planning and with select property owners in the vicinity of the mine site.

7. REFERENCES

Aldrick, J. M. 1988. *Soils of the Elliot River – Bowen Area, North Queensland.* Queensland Government: Department of primary Industries.

Blackman, J. G., Perry, T. W., Ford, G. I., Craven, S.A., Gardiner, S. J. and De Lai, R.J. 1999. *Characteristics of Important Wetlands in Queensland*. Resource Assessment Unit (Biodiversity), Planning Services Branch, Queensland. Environmental protection Agency, Brisbane.

Coastal Zone Australia Ltd, 2005. *OzEstuaries: Information About Australia's Estuaries and Coasts*. http://www.ozestuaries.org.

Cowardin, L. M., Carter, V., Golet, F. C. and LaRoe, E. T. 1979. *Classification of wetlands and deepwater habitats of the United States.* U.S. Department of Interior, Fish, Wildlife Service, Washington D.C.

Environment Australia. 2001. *A Directory of Important Wetlands in Australia, Third Edition*. Environment Australia, Canberra.

Environmental Protection Agency, 2004. *Guideline: Noise: Planning for Noise Control*, EPA, Brisbane.

WBM Oceanics Australia, 2006. *Abbot Point Terminal Stage 3 Expansion.* March 2006.

8. Abbreviations

APSDA	Abbot Point State Development Area
CASA	Civil Aviation Safety Authority
DEWHA	Department of Environment, Water, Heritage and the Arts
DMR	Department of Main Roads
DOI	Directory of Important Wetlands
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environmental Protection Agency
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ERA	Environmentally Relevant Activity
GAB	Great Artesian Basin
HVDC	High Voltage Direct Current
IAS	Intitial Advice Assessment
IPA	*Integrated Planning Act 1997*
KP	Kilometre Point
KV	Kilovolts
LAT	Lowest Astronomical Tide
MW	Megawatts
NCA	*Nature Conservation Act 1992*
NES	National Environmental Significance
NTA	*Native Title Act 1993*
QR	Queensland Rail
ROM	Run of Mine
Sea Dumping Act	*Environment Protection (Sea Dumping) Act 1981*
SDPWOA	*State Development and Public Works Organisation Act 1971*
TOR	Terms of Reference

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