Waratah Coal

Galilee Coal Project, Central Queensland

Initial Advice Statement

14 APRIL 2008

Waratah Coal

THE NEW ENERGY IN COAL

CONTENTS

TABLES

FIGURES

1. INTRODUCTION

1.1 Project Overview

The proponent, Waratah Coal, intends to establish a new coal mine, railway and port 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. The project also includes the possible establishment of a water supply pipeline between the coal mine and the Burdekin Dam and the provision of a high voltage electricity transmission line between the closest high voltage distributor and the port. 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

The coal tenements are situated near "Kiora" approximately 13 km west and 35 km north of Alpha. The exploration tenements cover an area of 4,887 km^2. To date, Waratah Coal has identified an inferred resource of 3.12 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

The transport of the coal from the mine to international markets requires the resolution of three key logistical issues. These are:

- Higher transport costs than competitors due to distances between the mine and existing Queensland coal ports;
- Congestion on the existing Queensland Rail (QR) operated narrow gauge rail infrastructure; and
- Congestion at the existing coal ports.

In recognition of these issues and to enable coal to be exported at the minimum logistical cost, Waratah Coal proposes to construct a new approximately 495 km private railway and coal export port with an initial capacity of 50 Mtpa.

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 will be dual gauge from the Bowen Basin to the port location to facilitate access by narrow gauge trains carrying an additional 25 Mtpa of coal from third party users to reach the initial port capacity of 50 Mtpa.

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.

1.2 The Port

A new coal export terminal will be established at a location situated between Cape Manifold and Five Rocks Beach on the Central Queensland Coast. This location is halfway between the two existing coal export ports of Gladstone and Hay Point / Dalrymple Bay. The proposed port site is located within the Shoalwater Bay Training Area (SWBTA).

The new port will accommodate ships which range in size from 35,000 DWT to 350,000 DWT and hence will support Handymax, Panamax, Capeside and Chinamax bulk carriers.

Initially the port will be built with a capacity of 50 Mtpa of coal. The export berths will accommodate two 350,000 DWT vessels at a time or any combination of ships which equate to this capacity. The port will be designed to enable future capacity expansion in 25 Mtpa modules above the nominated initial capacity.

1.3 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$220 million as at 3 April 2008.

The contact details for Waratah Coal Inc are as follows:

Waratah Coal Inc.

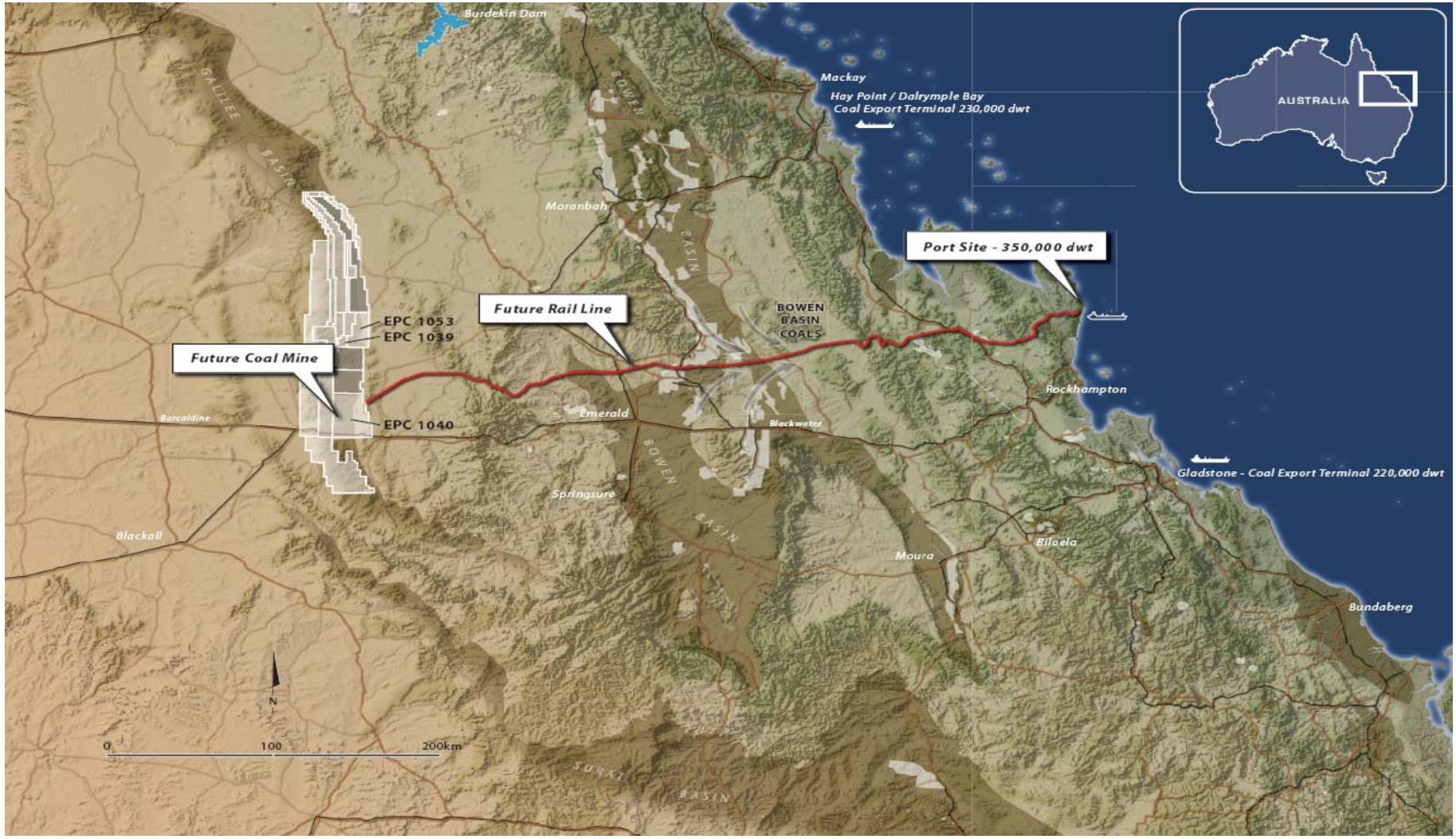
GPO Box 89

Brisbane Qld 4001.

1.4 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 the total project costs as Mine $1.8B, Rail $2.0B and Port $1.5B with a total cost estimate of $5.3B. The mine financing would be typically 65% debt and 35% equity funded while the rail and port funding would typically by 80% debt and 20% equity funded.

Figure 1. Project Concept Plan



1.5 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.

1.6 Project Economic Benefits

It is estimated that the construction of the project will require an investment of;

- Mine - A$1.8 billion;
- Railway – A$2.0 billion; and
- Port - A$1.5 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; and
- The provision of new rail and port infrastructure in Central Queensland.

1.7 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 to construct new rail and port infrastructure to enable the timely and efficient export of the project's coal product.

2.1.1 Port and Rail Options

The port options considered were Abbot Point, Dalrymple Bay, a new port adjacent to the SWBTA and Gladstone. Based on these port options the rail links outlined in Table 1 below were considered.

Table 1: Alternative Port and Rail Route Options

Port	Rail Route	Rail Distance (km)	Line Status
Abbot Point	EPC to Abbot Point	479	New – 285 km Existing – 194 km
	EPC to Abbot Point via Goonyella	520	New – 155 km Existing – 365 km
Dalrymple Bay	EPC to Dalrymple Bay	422	New – 155 km Existing – 267 km
Port Clinton	EPC to New Port adjacent to SWBTA (north of Mackenzie River)	495	New – 495 km
	EPC to New Port adjacent to SWBTA via Blackwater	596	New – 125 km Existing – 471 km
Gladstone	EPC to Gladstone via Blackwater	575	New – 48 km Existing – 527 km

2.2 Project Components

Whilst the focus of this IAS is the development of the mine, railway and the port, 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.

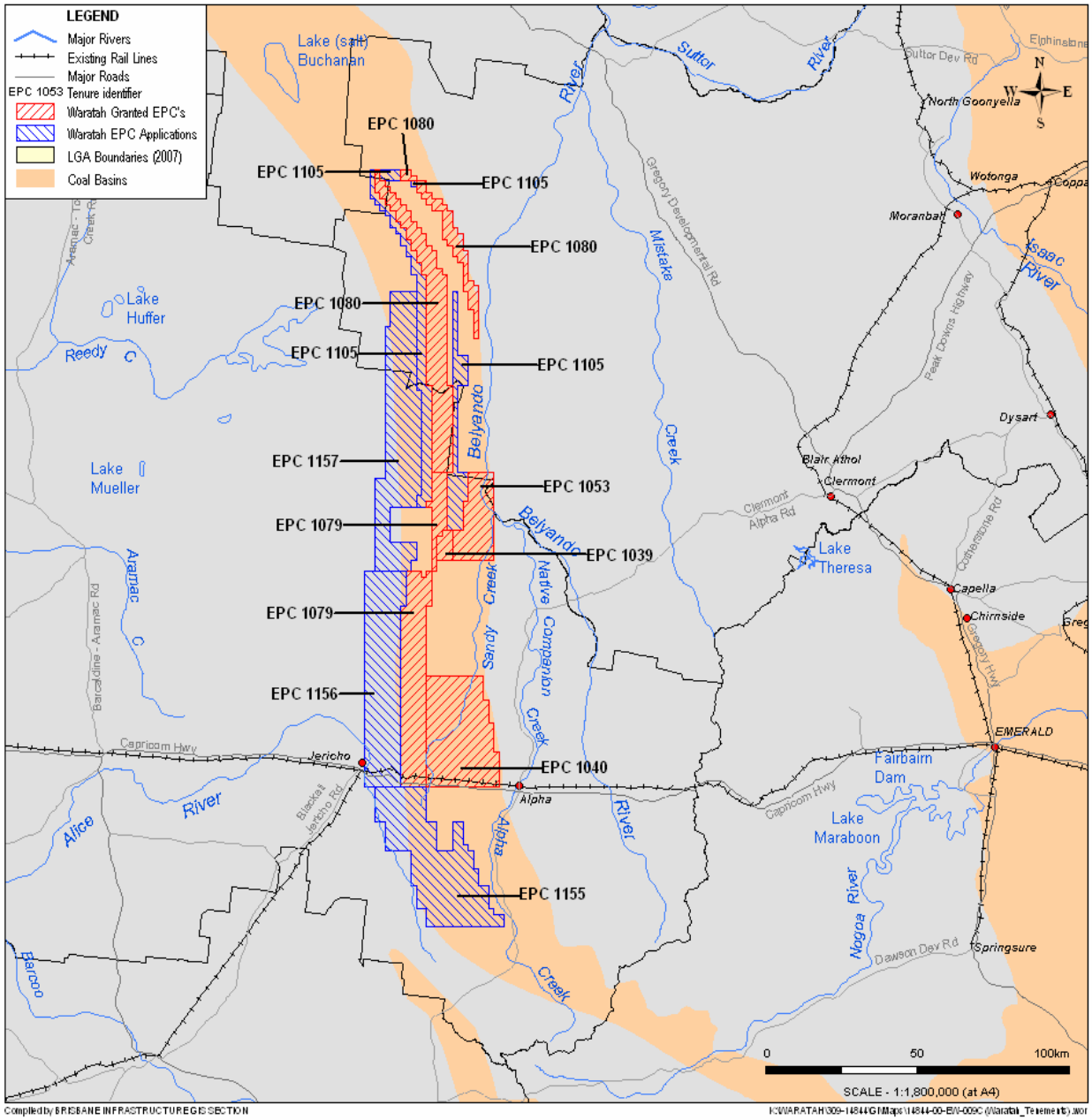
2.3.1.2 Exploration Tenures and Coal Reserves

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. These two exploration tenements are estimated to contain an inferred resource of 3.12 billion tonnes of extractable coal. Tenements within the potential mining area are outlined in Table 2 (data as at 25/02/2008) and illustrated in Figure 2.

Table 2: Waratah Coal Exploration Tenements

Tenement Number	Name	Status	Inferred Resource (billion tonnes)
EPC1040	South Alpha	Granted	2.145
EPC1053	Alpha North	Granted	0.975
EPC1039	Pocky Creek	Granted	-
EPC1079	Alpha Extended	Granted	-
EPC1080	Laglan	Granted	-
EPCA1105	Dingo Creek	Application	-
EPCA1157	Jericho North	Application	-
EPCA1155	Jericho	Application	-
EPCA1156	Jericho South	Application	-

Figure 2: Exploration Tenements Map



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.

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

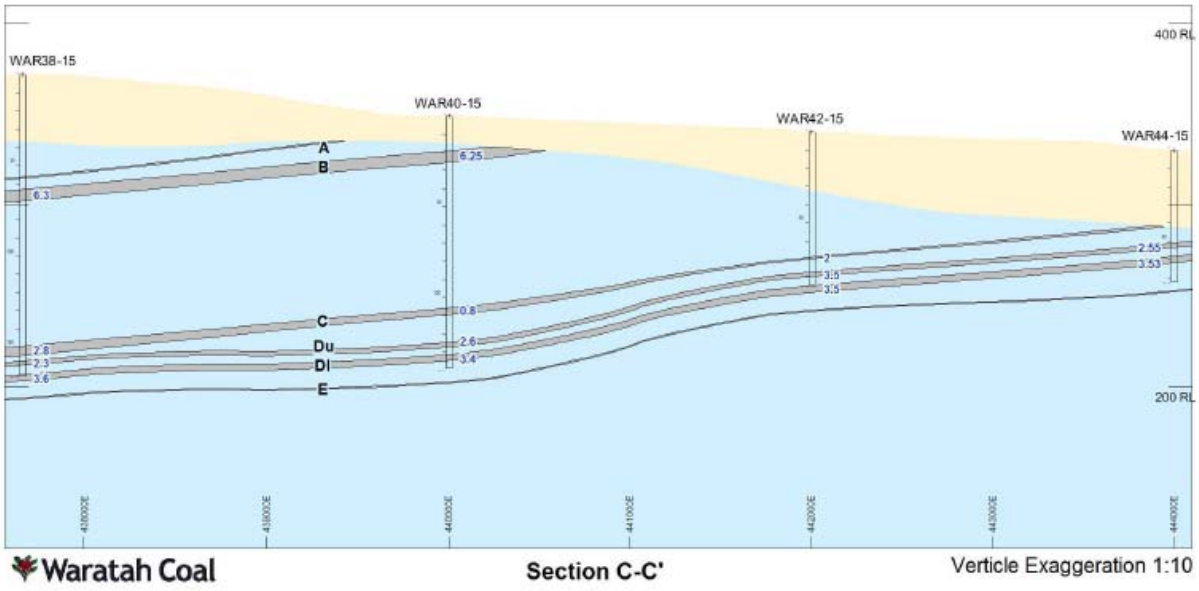


Table 3: Typical Coal Quality – South Alpha Tenement (EPC1040)

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

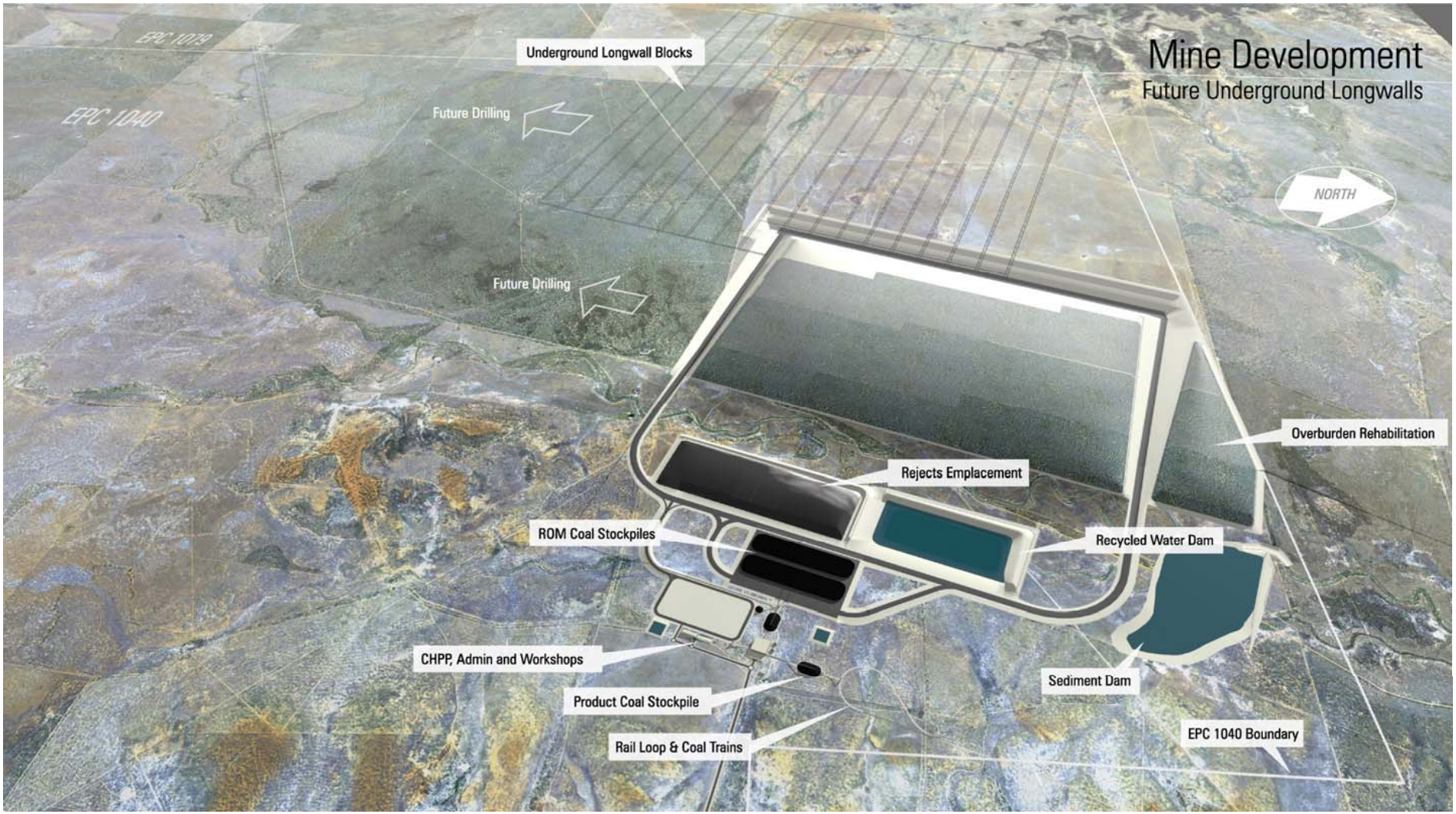
The preliminary mine concept is illustrated in Figure 4. An initial assessment of possible mining options has indicated that the coal deposits are suitable for both open cut mining and underground longwall mining.

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 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 MVA 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 *State Development and Public Works Organisation Act 1971*. 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 waste water 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.

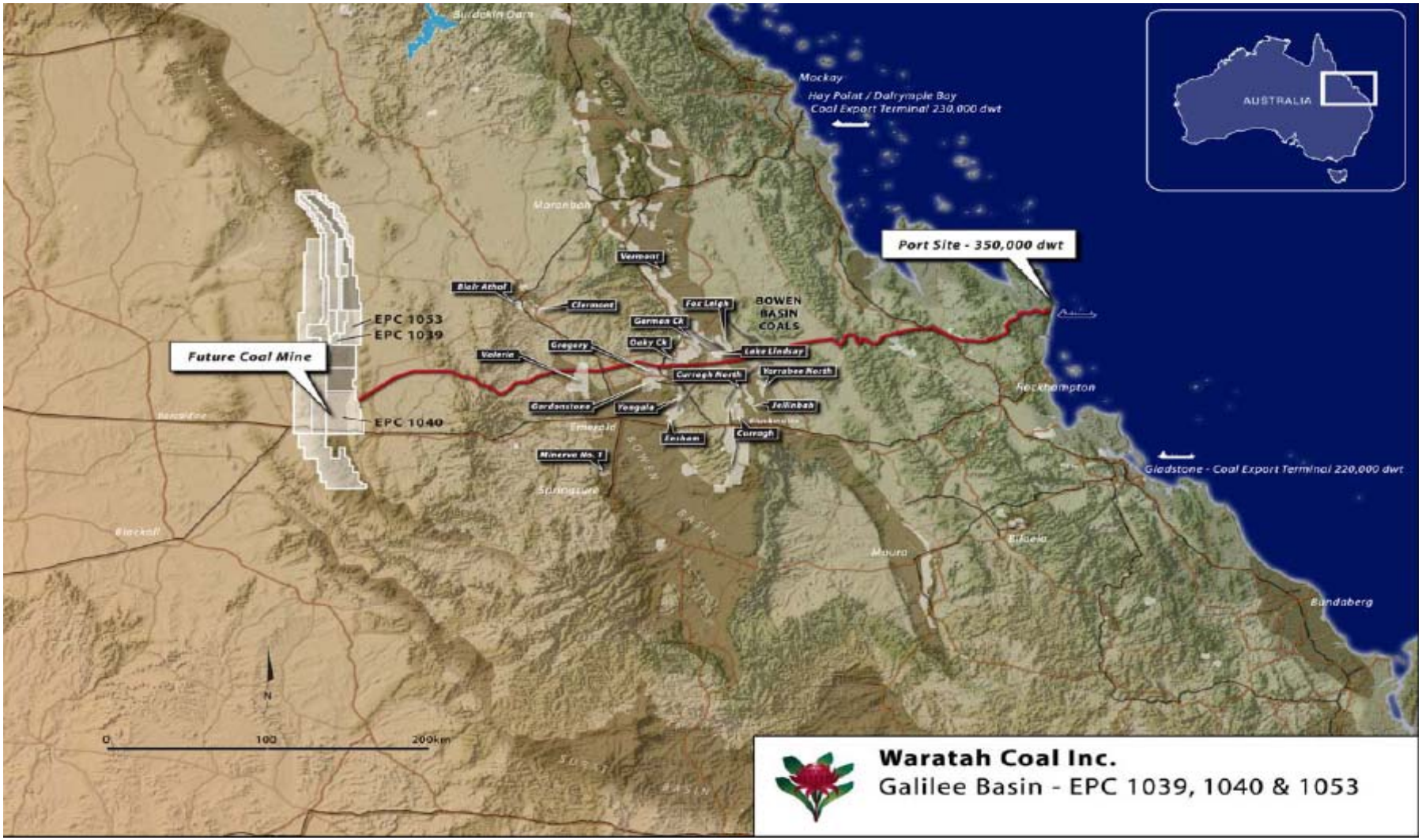
2.4 The Railway

2.4.1 Preferred Rail Corridor

A preferred route corridor (20 km wide) has been identified for the proposed railway line. 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 5 shows the corridor location. The railway alignment is predominantly located on freehold land used for beef production and pasture crops. Areas of leasehold land and forestry reserve are present along the alignment. The eastern portion of the alignment transects the SWBTA.

Figure 5 further illustrates the location of potential third party users from the Bowen Basin relative to the proposed railway corridor. These potential users would access the new railway via a connection with the existing narrow gauge rail network or through the construction of their own individual spur lines.

Figure 5. Rail Concept Plan (showing Potential Third Party Users)



2.4.2 Railway and Train Characteristics

The concept train will be diesel-electric and will consist of six locomotives and 180 cars. 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.

Table 5: Preliminary Railway Design Parameters

Description	Parameter
Corridor width (nominal)	80 m
Design speed	80 km/hr loaded, 100 km/hr unloaded
Track	Standard Gauge west of the Bowen Basin then Dual Gauge Single Track with passing loops at 100 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 for loaded 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.

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.

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 comprise 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 Rockhampton, Isaac, Central Highlands and Barcaldine 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^	Infrastructure	KP*	Owner^
Railways			Towns		
Emerald to Blair Athol Line	171.2	QR	Chirnside	171.0	Various
Blackwater to Coppabella Line	212.5	QR	Roads		
North Coast Railway	394.0	QR	Clermont - Alpha Road	12.0	DMR
Pipelines			Craven Road	56.0	BRC
AGL Gas Pipeline	321.3 325.5 331.0	AGL	Clermont – Rubyvale Road	120.5	CHRC
Saraji Water Pipeline	270.5	BHP Billiton Mitsubishi Alliance	Capella – Rubyvale Road	158.2	CHRC
Oaky Creek Water Pipeline	215.0	Oaky Creek Coal Joint Venture	Gregory Highway	171.5	DMR
Central Qld Gas Pipeline	274.2	Arrow Energy	Yan Yan Road	181.0	CHRC
Powerlines			Mount Stuart Road	225.0	CHRC
275kv – Bouldercombe to Nebo	381.0	Powerlink	Mount Stuart – Bedford Weir Road	237.0	CHRC
275kv – Stanwell to Broadsound	336.5 347.0 351.0	Powerlink	Fitzroy Development Road	274.0	DMR
132kv – Blackwater to Lilyvale	209.8	Powerlink	Duaringa – Apis Creek Road	338.0	DMR
Lilyvale Substation	300 m south of	Powerlink	Bruce Highway	392.5	DMR

Infrastructure	KP*	Owner^	Infrastructure	KP*	Owner^
	KP 230.3				
132kv - Lilyvale to Clermont to Barcaldine	38.8 211.7	Ergon Energy	Stanage Bay Road	410.5	RRC
132kv– Lilyvale to Dysart	211.9	Powerlink	East – West Road	475.0	RRC
275kv– Lilyvale to Broadsound	230.3	Powerlink	Yeppoon - Byfield Road	476.0	DMR

*KP = Kilometre Point (from start of railway line at mine tenement area). ^Owner: DMR = Department of Main Roads, BRC = Barcaldine Regional Council, CHRC = Central Highlands Regional Council, RRC = Rockhampton Regional Council, QR = Queensland Rail.

2.4.7 Affected Mining Operations and Tenements

Mining leases affected by the preferred railway alignment corridor are identified in Table 7. It is proposed to negotiate mining lease crossing arrangements with the relevant owners of these leases.

Table 7: Mining Leases Transected by the Proposed Railway

Mine	Mining Lease	KP*	Lease Owner
Shepton Quarry	Na	180.0	Central Highlands Regional Council
Gregory Mine	Gregory North Extension	205.3 – 207.3	BHP Billiton Mitsubishi Alliance
Oaky Creek Mine	Oaky Creek Extended	212.0 – 214.0	Oaky Creek Joint Venture
	Sandy Creek	220.2 – 226.0	
Kunwarara Mine	KO540	416.7 – 418.4	Queensland Magnesia
	KG3	425.0	

*KP = Kilometre Point (distance from start of railway line at mining lease area).

2.5 The Port

2.5.1 Location

The new coal export terminal is to be sited between Cape Manifold and Five Rocks Beach on the Central Queensland Coast, within the Department of Defence's SWBTA.

Vehicle access to the port site is currently available via the Byfield – Yeppoon Road and tracks within the SWBTA.

2.5.2 Terminal Characteristics

The new port will accommodate ships which range in size from 35,000 DWT to 350,000 DWT and hence will support handymax, panamax, capesize and chinamax vessels.

Initially the port will handle the export of 50 Mtpa of coal. The proposed export berths will accommodate two 350,000 DWT vessels at a time or any combination of ships which equate to this capacity. The port will be designed to enable capacity expansion in 25 Mtpa modules above the nominated start-up capacity.

The operation of the port will require associated services and infrastructure 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 coal terminal will contain the following components:

- Two coal receival stations (capacity 8,000 tonnes per hour (tph));
- In-loading conveyors;
- Two coal stockpile stackers (8,000 tph inloading rate);
- Coal stockyard (2.5 Mt capacity);
- Two coal stockpile reclaimers (8,000 tph capacity);
- Out-loading conveyors;
- Surge bins;
- Jetty and jetty conveyors;
- Wharf and wharf conveyors;
- Two shiploaders (10,000tph out-loading rate);
- Two shipping berths (Laden draft 24 m);
- Two rail loops (20,000 t trains);
- Tug harbour; and
- Barge dock.

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 shiploaders for loading onto the export ships. The wharf structure will be located some 1,696m offshore and will consist of two main berths.

Figure 6 and Figure 7 provide aerial oblique views of the proposed facility looking from the northeast and the west respectively.

Figure 6. Port Concept Plan - Northeast View

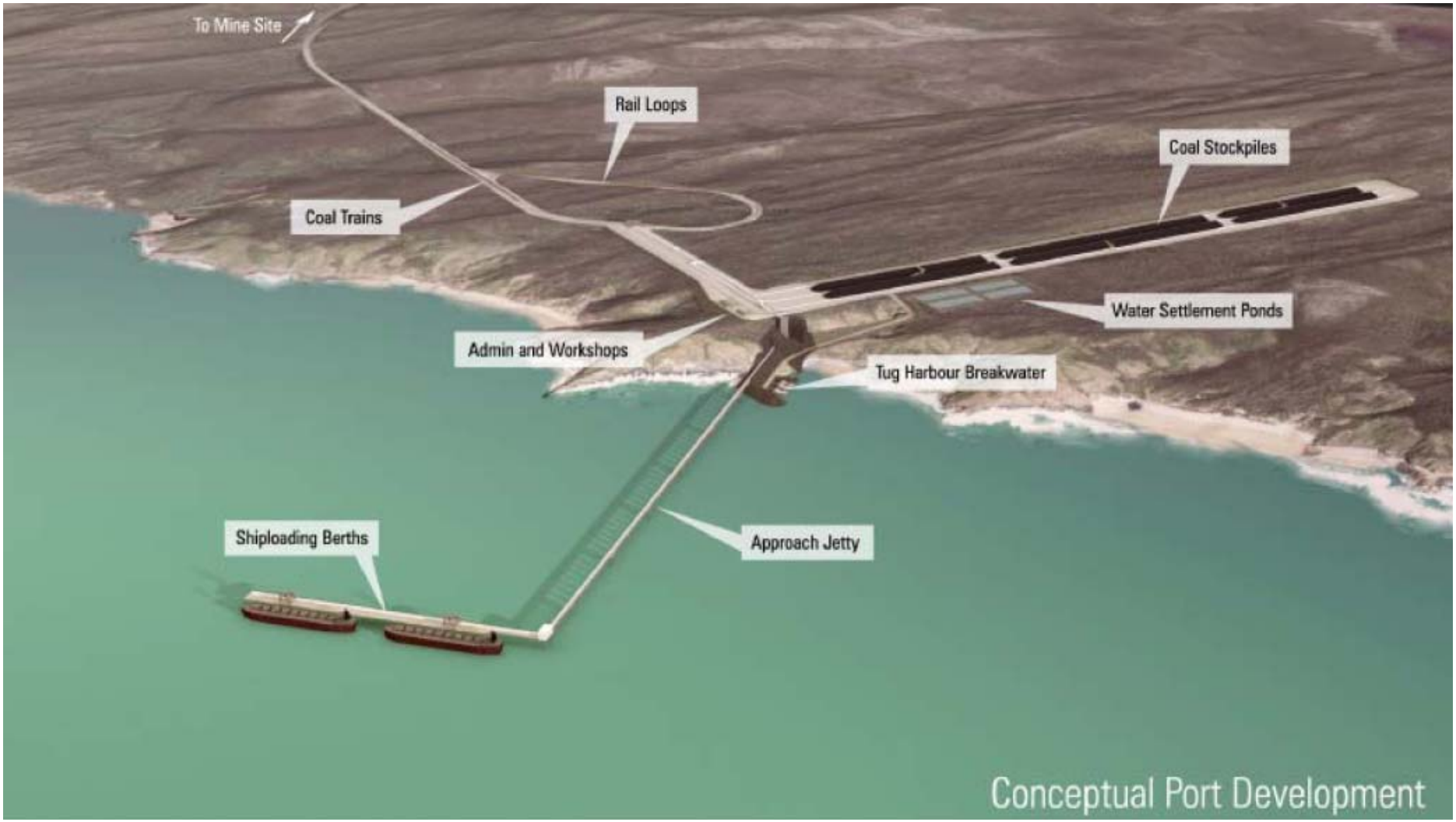
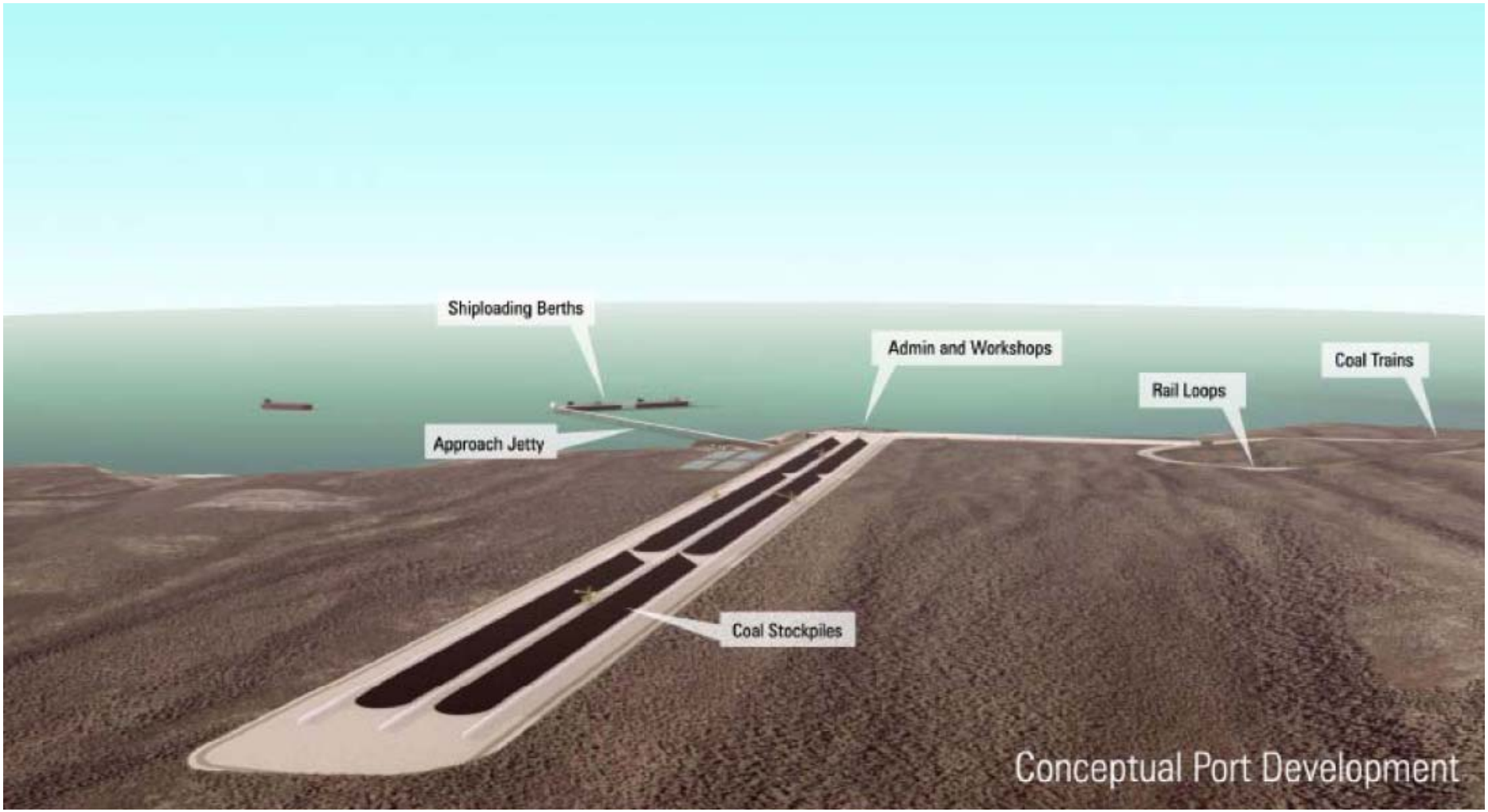


Figure 7. Port Concept Plan - West View



2.5.3 Construction Workforce

It is expected that the construction of the port will require some 500 to 600 workers onsite over the two year 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 house the construction workforce in a temporary camp accommodation near to the port site as workforce travel times from established areas able to provide sufficient accommodation are not acceptable. The location of the accommodation camp will be determined in consultation with the Department of Defence.

2.5.4 Operational Workforce

The port will employ approximately 100 permanent operational staff and will operate 24 hours a day. Additional personnel will be required onsite during maintenance periods and there will be numerous contractors (either frequenting the port and/or undertaking tasks offsite) 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. This 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.

2.6.2 Port Power Transmission Line

It is expected that the new port will require an authorised demand of approximately 40 MW. It is proposed to source this power from the High Voltage Grid via a new 132 kV transmission line that links the port with the nearest power source. This will feed into a number of substations strategically located around the port development. 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.

2.6.3 Port Water Supply

The coal terminal 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 port facilities however the likely scenario will be a pipeline tapping into the Fitzroy River supply.

2.6.4 Port Access Road

The existing vehicle access to the proposed port site is circuitous and substandard. A more direct, all weather road will be established to service the port and to avoid traversing the SWBTA where possible.

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 2012. The proposed schedule milestones are presented in Table 8.

Table 8: Key Project Milestones

Key Milestones	Target Dates
Commencement of SDPWOA EIS process*	Q1 2008
Completion of pre-feasibility studies	Q1 2009
Completion of EIS and development approval processes	Q4 2009
Financial Close	2H 2010
Commencement of onsite construction works	2H 2010
First coal shipment	2H 2012

* 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 World Heritage properties, Ramsar wetlands, threatened species and communities, migratory species protected under international agreements and the Commonwealth marine environment.

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 Great Barrier Reef Marine Park Act 1975

Under Regulation 61 of the *Great Barrier Reef Marine Park Regulations 1983*, any project that has the potential to impact upon the Marine Park must be assessed by the Great Barrier Reef Marine Park Authority (GBRMPA). An approval for the proposed project will be sought from the GBRMPA in accordance with the requirements of Regulation 74 (5) of this Act.

3.1.1.3 Environment Protection (Sea Dumping) Act 1981

The *Environment Protection (Sea Dumping) Act 1981* (the Sea Dumping Act) prohibits ocean disposal of waste materials considered harmful to the marine environment, and regulates the permitted dumping of wastes at sea to ensure environmental impacts are minimised. Any dredging or disposal of dredge or waste materials to sea associated with the construction and operation of the port facilities or other aspects of the Project will require a permit under this Act.

3.1.1.4 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 a mechanism for determining claims to native title.

Several native title claims have been submitted on land required for the project as indicated in Table 9.

Table 9: Native Title Claims Submitted on Land within the Project Area

Claim	Status	Mine	Water Supply Pipeline (KP)	Railway (KP)	Port Facility
Wangan and Jagalingu People	Active	Y	Y	Y	
Wangan / Jagalingu People	Active	Y	Y	Y	
Bidjara People	Finalised Withdrawn	Y			
Jangga People	Active		Y		
Kangoulu People	Active			Y	
Kangoulu #2	Active			Y	
East Comet / West Dawson People	Active			Y	
Ghungalu People 2	Finalised Pre-combination			Y	
Southern Barada and Kabalbara People	Active			Y	
Baradam Barna, Kabalbara and Yetimarla	Active			Y	
Darumbal #2	Active			Y	
Darumbal People	Active			Y	Y

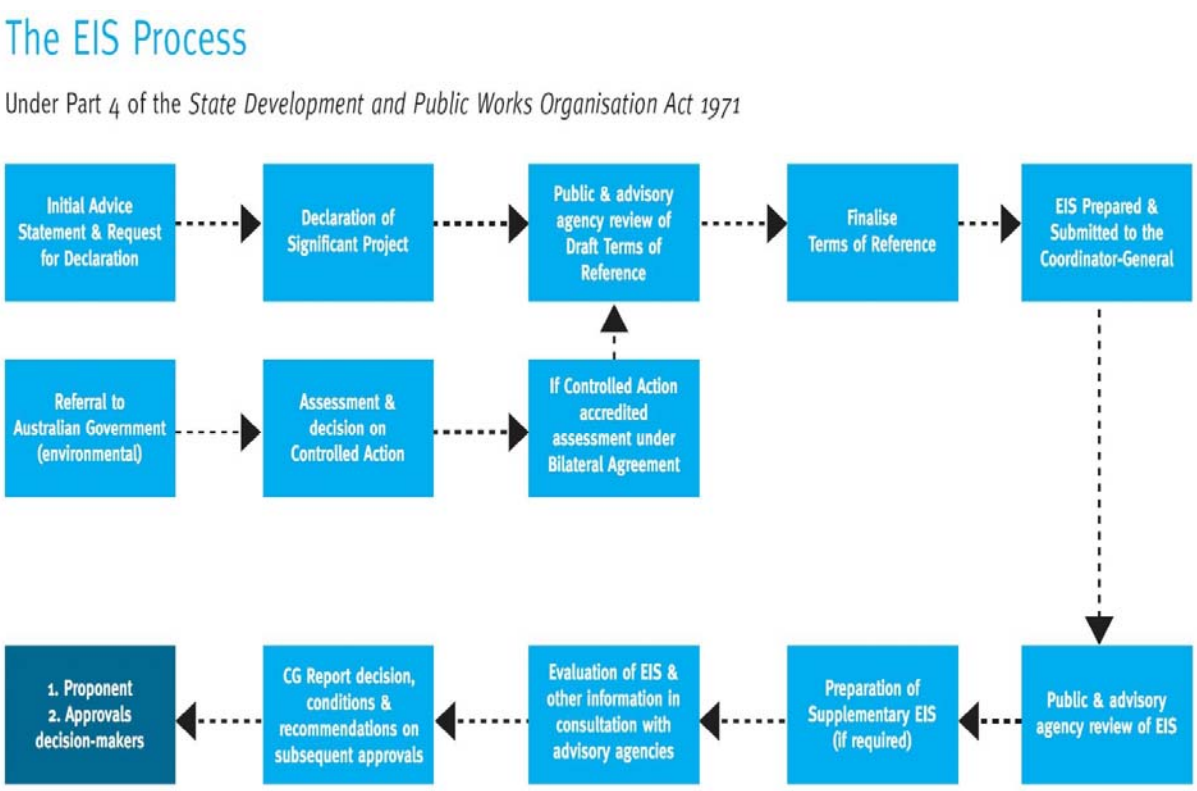
3.1.1.5 Civil Aviation Regulations 1988 and Civil Aviation Safety Regulations 1988

The *Civil Aviation Regulations 1988* and *Civil Aviation Safety Regulations 1988* may apply to the project. The SWBTA contains two military airfields and practice bombing ranges which may be affected by the development proposal. In view of this it is proposed to conduct an aviation safety assessment in accordance with Department of Defence and Civil Aviation Safety Authority (CASA) requirements for the proposed port which will define the size of the potential hazard zone around the site.

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 71 – operating a port (other than an airport) under the *Transport Infrastructure Act 1994*;
- 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 will be required under this Act. Tidal works associated with the proposed port facilities may include construction with 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 10.

Table 10: Local Authority Areas Affected by the Proposed Project

Local Authority	Project Component				
	Mine	Railway	Port	Water Pipeline	HV Power Transmission Line
Barcaldine Regional Council	✓	✓		✓	
Isaac Regional Council		✓		✓	
Central Highlands Regional Council		✓			
Rockhampton 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 (terrestrial and marine);
- 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 Central Queensland Coast, Brigalow Belt North, Desert Uplands and the Einasleigh Uplands Bioregions.

4.1.1.1 Central Queensland Coast Bioregion

The port facilities and eastern portion of the preferred railway alignment are located within the southern part of this bioregion which comprises high rainfall coastal lowlands, hills and ranges. The southern part of the bioregion drains to the Fitzroy River.

This region has a sub-tropical to tropical climate with high seasonal rainfall mostly associated with cyclones. Average annual rainfall ranges from 1300 mm to 2000 mm with 50 – 60% of this falling between January and March. It is characterised by savanna woodlands and semi-deciduous forests in the lowlands and evergreen rainforests and tall eucalypt forests at altitude.

4.1.1.2 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 three major river systems - the Fitzroy, Burdekin and Belyando.

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 of matrix of rangelands, savannas, brigalow, grasslands and eucalypt woodland intermixed with improved pasture and cropping lands.

4.1.1.3 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.

4.1.1.4 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 point approximately 38 km NNW of the town of Alpha and extends in an easterly direction to the Queensland Coast. The route generally traverses gently undulating to flat land and crosses a number of major drainage systems including the Belyando and Mackenzie rivers. The route crosses the Drummond Range, the Broadsound Range and the Coast Range.

The port site is located on coastal hills with a thin sand cover at the Pacific coast with dunes, swales and lowlands to the west. The main port supporting infrastructure and stock piles are located on a parallel dune system.

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.

The port site is situated within a geological group which consists of carboniferous arenites, mudstones, cherts and minor mafic volcanics typical of the coast.

4.2.1.3 Soils and Land Use Suitability

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 soils of the port site consist primarily of siliceous sands. The coastal soils below RL 5 m are potentially acid sulphate soils which will require treatment and special handling during construction.

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 forestry reserve are present along the preferred railway corridor. The eastern part of the railway corridor and the port site are situated on Commonwealth land under the control of the Department of Defence.

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 9.

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 region surrounding the mine, mine water supply infrastructure, the railway and the port is predominantly rural in character supporting cattle grazing and some crop farming. 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 and defence training activities. Emissions from these activities include dust, and exhaust gases from site equipment and processing activities.

The nearest Environmental Protection Agency (EPA) air quality monitoring station is located at Parkhurst near Rockhampton. 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 project area. An examination of existing and predicted air quality will be undertaken as part of the EIS process. 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 port operations. Management procedures for the use and maintenance of all equipment and vehicles used on construction sites will be developed and implemented to mitigation 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 township of Chirnside is located near to the preferred railway alignment. Other noise sensitive receptors within the wider study area include Kanowna, Tartarus, Wilpeena, Barwon Park, The Glen, Marlborough, Apis, Junee, Byfield, Capella and Old Malvern. 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 port facility, Byfield, is located 20 km south-west 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 Byfield due to the distance away.

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 no existing noise emission data; however, noise levels will be monitored prior to commencement of the project to quantity 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 port facility. 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 mine and port locations and rail and pipeline routes.

4.6.1.1 Ecological Communities and Regional Ecosystems

Table 11 summarises the ecological communities and REs identified within the project area.

Table 11: Ecosystem Communities and Regional Ecosystems within the Project Area

Ecological Community / Regional Ecosystem	Mine			Mine Water Supply Pipeline	Railway	Port Facility
	Total	EPC1040	EPC1053			
Threatened Communities Listed under the EPBC Act						
Brigalow (subdominant and co-dominant)	4	3	1	2	7	0
Great Artesian Basin Dependent Native Community	3	0	0	0	0	0
Semi-Evergreen Vine Thicket	0	0	0	0	2	0
Bluegrass Dominant Grassland	0	0	0	0	3	0
TOTAL	7	3	1	2	12	0
Regional Ecosystems Listed under the VMA						
Endangered	7	0	2	3	13	0
Of Concern	12	0	3	6	22	5
Not of Concern	82	2	2	31	49	3
TOTAL	101	2	7	40	84	8
At Threshold Regional Ecosystems						
	7	0	1	4	19	4
Endangered (EPA Biodiversity Status) Regional Ecosystems						
	14	1	2	3	18	1

4.6.1.2 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 SWBTA is traversed by the proposed railway for a distance of 5 km. It represents one of the few remaining large tracts of coastal and sub-coastal land, with a relatively low level of disturbance, and which provides habitat to a number of locally and internationally endangered and threatened species. It is listed on the Register of the National Estate and the Commonwealth Heritage List. The SWBTA also forms part of the Great Barrier Reef World Heritage Area and Marine Park, and part of the Shoalwater and Corio Bays Area, a wetland of international significance (Ramsar), and DOI wetlands, SWBTA Overview and Dismal Swamp - Waterpark Creek.

The railway corridor transects the Eugene, Canal Creek, Werribee Creek and Byfield State Forests, and the North Pointer Conservation Park.

The proposed port facility is located wholly within the Shoalwater and Corio Bays Area (Ramsar wetland) and SWBTA Overview (DOI wetland). Shipping activities will take place in the Great Barrier Reef World Heritage Area and Marine Park.

4.6.1.3 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 12).

Table 12: Threatened Flora and Fauna Species Likely to Occur within the Project Area

Threatened Species	Mine	Mine Water Supply Pipeline	Railway	Port Facility
Flora				
Listed under the EPBC Act and NCA	3	2	19	3
Listed under the EPBC Act only	1	1	4	0
Listed under the NCA only	11	9	31	1
TOTAL Database Search	15	12	54	4
TOTAL Likely to Occur in Project Area*	12	10	36	2
Fauna				
Listed under the EPBC Act and NCA	9	10	12	10
Listed under the EPBC Act only	2	3	2	3
Listed under the NCA only	14	12	21	12
TOTAL Database Search	16	25	35	25
TOTAL Likely to Occur in Project Area*	13	20	35	16

*Likelihood of occurrence based on habitat preference.

4.6.1.4 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 13.

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

Threatened Species	Mine	Mine Water Supply Pipeline	Railway	Port
Listed as Migratory and Marine	20	21	32	53
Listed as Migratory only	25	25	26	26
Listed as Marine only	33	34	36	88
TOTAL Database Search	78	80	94	171
TOTAL Likely to Occur in Project Area*	68	77	93	153

*Likelihood of occurrence based on habitat preference.

4.6.1.5 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 14 details the potential number of declared plant and animal species that will potentially be encountered during the project.

Table 14: Declared Plant and Animal Pest Species

	Mine Site and Mine Water Supply Pipeline	Railway Route and Port
Declared Weeds	7	26
Weeds of National Significance	3	6
Declared Animal Pests	5	4

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 port.

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 Marine and Coastal Ecology

4.7.1 Description

The proposed port development site is located within a study area bounded by Cape Manifold to the north and Five Mile Beach to the south. The coastline in this area is a progression of short sandy beaches separated by a set of rocky outcrops that extend out from the mainland along steep sloping rock faces. The coastal bathymetry displays a relatively steep gradient from the shoreline increasing in depth to 20 m LAT (Lowest Astronomical Tide) approximately 2 km offshore. The study area is characterised by strong tidal currents due to the large tidal range experienced in the Capricorn region.

4.7.1.1 Marine Protected Areas

The study area is located within the Great Barrier Reef Marine Park (GBRMP) which is gazetted under Commonwealth legislation, and the Great Barrier Reef Coastal Marine Park (GBRCMP) which is gazetted under the Queensland legislation (the *Marine Parks Act 2004)*. Generally, the GBRCMP covers the intertidal areas and the internal waters of Queensland, whereas the GBRMP extends seaward from the LAT. It is a multiple use marine park that designates which activities can occur in specific zones. The port site is classified as a General Use zone. The main objective of a general use zone is to provide conservation of areas of the Marine Park while providing opportunity for reasonable use.

The GBRMP and the GBRCMP have complementary zoning arrangements in this locality. The zoning of areas between low and high water mark mirrors that established in sub-tidal areas within the GBRMP.

The Great Barrier Reef Zoning Plan (2003) defines Designated Shipping Areas to allow existing ports to operate. It is expected that the establishment of the proposed port will require the amendment of the existing Great Barrier Reef Zoning Plan to enable ships to access the port through the GBRMP waters.

No Fishery Habitat Areas occur at or directly adjacent to the proposed port location.

4.7.1.2 Marine Sediments

The proposed port will require the dredging of marine sediments. Sediment quality data for the anticipated dredging area is not available. Given that this portion of the coastline has not been previously disturbed by development, it is considered that the sediment will be pristine. It is expected that the material will be suitable for unconfined placement at sea in accordance with the requirements of the Sea Dumping Act.

Waratah Coal will undertake an assessment of sediment quality within the proposed port area in accordance with a Department of Environment, Water, Heritage and the Arts (DEWHA) approved, Sediment and Analysis Plan to confirm baseline contaminant concentrations and the suitability of the material for sea disposal, should placement at sea be the preferred spoil disposal method.

4.7.1.3 Benthic Habitats

The port study area is thought to be dominated by soft sediment habitat (gravel / sand / mud) interspersed with patches of rock / reef areas. It is unlikely that any extensive seagrass habitat would occur, although such habitat has been described in open coastal soft sediment habitats to depths of 20 m throughout the Capricorn region. It is expected that the fringing "rocky reefs" will be dominated by turfing algae and inshore hard coral species with low abundances of sponge and soft coral communities. A number of common hard coral species identified in the Shoalwater Bay locality are considered rare elsewhere in the GBRMP region.

4.7.1.4 Marine Assemblages

The Shoalwater Bay and Capricorn Coast area has a diverse marine fish assemblage. Nektobenthic invertebrate assemblages include animals such as prawns, crabs and squid / cuttlefish. The proposed port development area is likely to contain a diverse and abundant assemblage of these species. Various crabs, squid, Moreton Bay bugs and cuttlefish are widely distributed throughout sub-tidal areas of the east coast of Queensland and should occur in the subtidal areas area around the proposed development site.

Macrobenthic infauna assemblage data for the area are limited.

4.7.1.5 Marine Turtles

The seagrass and reef habitats of Shoalwater Bay and Port Clinton area provide important feeding grounds for marine turtles. Four species of marine turtle have previously been identified within the area these being the: Green (*Chelonia mydas*), Flatback (*Natator Depressus*), Hawksbill (*Eretmochelys imbricata*) and Loggerhead (*Caretta caretta*) Turtles. All four species are listed as protected under the NCA as either vulnerable (Green, Flatback, Hawksbill) or endangered (Loggerhead). No turtle nesting grounds have previously been identified within the proposed port area.

While the proposed port site is located outside of this area, it is likely that turtles will migrate through the site to nesting / breeding grounds during certain periods of the year. Some species may also use the area for feeding, depending on the extent of appropriate food resources.

4.7.1.6 Dugongs

The Shoalwater Bay and Port Clinton region is a designated Dugong Protection Area. Dugong feed on the species of seagrass found in Shoalwater Bay and Port Clinton area (GBRMPA, 1997). While most of the dugong are found in Shoalwater Bay itself, the area at and directly adjacent to the port site is likely to be traversed by dugong when they move between coastal seagrass beds.

4.7.1.7 Dolphins and Whales

There are approximately 30 species of whales and dolphins that are either resident or migratory within the GBRMP. Humpback whales are listed as vulnerable to extinction under the NCA.

There are three species of dolphin that are likely to occur at or adjacent to the proposed development site. These are the Indo-Pacific Hump-backed Dolphin (*Sousa chinensis*), Australian Snubfin Dolphin (*Orcaella heinsohni*), and Bottlenose Dolphin (*Tursiops aduncus*). All three species are listed as Vulnerable or Rare under the NCA.

4.7.1.8 Sea Snakes

Seventeen species of sea snakes are currently known to exist throughout the Great Barrier Reef. In the region from Gladstone to Cairns, four major species have been recorded. These were *Lapemis hardwickii*, *Hydrophis elegans*, *Disteira major* and *Disteira kingi* (Robins and Courtney, 1998). All these species are widely distributed and common throughout tropical Australian waters.

4.7.1.9 Fishery Resources

Parts of the Capricorn Coast are used by commercial, recreational and traditional fishers. The main commercial fishery involving the proposed port area is the otter trawl fishery which targets a variety of prawn species. Catches are highly variable. Line fishing is limited principally to the harvest of Spanish mackerel, and mesh netting apparatus are used to target shark, threadfin salmon, barramundi, and mullet.

Recreational fishing in the locality targets barramundi, mud crabs, threadfin salmon, Spanish mackerel, mangrove jack, school mackerel, pikey bream, together with various species of flathead and rock cod.

Traditional fishing by the Darumbal people occurs in the region of interest. The current nature and extent of this fishing activity is unknown.

4.7.1.10 Marine Water Quality

Water quality conditions adjacent to the proposed port are likely to be typical of an open coastal system, and be directly influenced by prevailing tidal currents wind and wave action. The exposed nature of this system and relatively shallow bathymetry drives ambient water quality and contributes to the mobilisation of sediments. No data on marine water quality for this locality is available.

4.7.2 Potential Impacts and Mitigation Measures

4.7.2.1 Water Quality

Dredging activities and spoil disposal to be undertaken at the port site have the potential to elevate water turbidity levels above the existing background conditions. The sediment plumes arising from dredging and spoil disposal activities may temporarily decrease available light conditions at the sea bed, increase suspended sediment concentrations within the water column, and increase deposition of fine sediment over adjacent benthic habitats.

EIS studies will be undertaken to examine these potential impacts. These studies will include the modelling of turbidity plumes potentially generated at the dredging site and spoil disposal areas and will assess potential impacts to water quality in the vicinity of the dredging and spoil disposal areas.

4.7.2.2 Marine Ecology

Dredging and disposal of the dredge spoil has the potential to impact on benthic habitats. Organisms requiring light for photosynthetic processes (coral, seagrass, macroalgae etc.) can be adversely impacted by increased turbidity and associated patterns of deposition. Benthic organisms at the spoil ground can be impacted via the placement of sediments over existing habitats. Although the exact details vary dependent on physical aspects of the habitat and composition of the benthic fauna itself, recovery of the benthic assemblage from such impacts are well documented (e.g. Kenny and Rees, 1994; Newell *et al.*, 1998; Sarda *et al.*, 1999)

The proposed works are not likely to have any significant impact on fish assemblages due to their wide distribution through tropical regions and the general mobility of the species. No extensive seagrass communities are likely to occur within the footprint of disturbance and therefore impacts on dugong habitat considered unlikely. This will be confirmed by EIS investigations.

The proposed development is unlikely to have any significant impact on cetacean species. Existing information demonstrates that key cetacean species are able to coexist in areas of extensive port infrastructure (Hale *et al.*, 1998; Parra, 2006).

There is currently limited available information on the species composition and abundance of sea snakes in the area. Further information review and consultation with specialists will be undertaken as part of the EIS process to determine the full extent of potential impacts to these species. A review of existing literature suggests that impacts to these species may be minimal.

4.7.2.3 Marine Turtles

The proposed development may have the following impacts on marine turtles:

- Boat strike from transport vessels;
- Physical impacts of dredge activity from contact with dredge equipment;
- Impacts on feeding grounds due to spoil deposition; and
- Impacts from port lighting and port activities.

These issues and their mitigation will be explored in detail in the EIS.

In terms of mitigating small boat strike and disturbance, vessel transit lanes and / or speed limits can be applied to avoid any areas that are frequently used by marine turtles. Such approaches will not be necessary for larger and slower vessels (e.g. tugs and freighters) as these vessels do not pose a known risk to marine turtles or mammals.

The mitigation of lighting impacts on turtles can be achieved by light positioning, shielding, and the time switching of lights.

The avoidance of direct physical injury to marine turtles from dredging can be achieved by the application of the following mitigation measures which are currently used in Queensland:

- Turtle deflectors fitted on dredger drag-heads; and
- On-board dredge management actions (e.g. pumps are turned off when the drag head is lifted from the bottom, and jet pumps are used to provide a mobile water curtain).

The management of construction disturbance can include:

- Avoiding the use of explosives;
- Ensuring that no materials are left in the water (e.g. ropes); and
- The selection of a spoil dumping ground which is located away from key habitats (e.g. seagrass beds).

4.8 Water Resources

4.8.1 Description

4.8.1.1 Surface Water

The mine is located within the Belyando / Sutton 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 DEHWA 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 preferred railway alignment transects six catchments, two major rivers and numerous major creeks. The catchments include the Belyando (west), Nogoa / Mackenzie (central) and Fitzroy (central east) Rivers and Shoalwater (north-east) and Water Park (east coast) Creeks. The Port is wholly located within the Water Park Creek catchment which is characterised by several small ephemeral creeks flowing eastwards to the Coral Sea. No major rivers or creeks are present on the site.

4.8.1.2 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. The port facility is also located wholly within the Tasman Basin. No information regarding the groundwater at the site is available. Studies will be undertaken during the EIS process to examine the extent and nature of groundwater resources within the port facility.

4.8.2 Potential Impacts and Mitigation Measures

4.8.2.1 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 port facility are expected to generate similar impacts on surface water resources to the mine construction. The soils within the port site may have the potential to generate acid when exposed to air. Measures will be put in place to manage any acid sulphate to be disturbed by port construction activities. 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.

4.8.2.2 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.

4.9 Cultural Heritage

4.9.1 Description

4.9.1.1 Indigenous Heritage Values

Indigenous language and tribal groups who may have an interest in the proposed project area are listed in Table 15. Heritage studies will be undertaken as part of the EIS process to confirm traditional owners and to identify indigenous heritage values relating to the project area.

Table 15: Indigenous Language and Tribal Groups located within the Project Area

Indigenous Language or Tribe	Mine	Mine Water Supply Pipeline	Railway	Port Facility
Yagalingu	✓	✓	✓	
Iningai	✓			
Miyan	✓	✓		
Yirandali	✓			
Yilba	✓	✓		
Wangan			✓	
Gayiri			✓	
Gabalbara			✓	
Gangulu			✓	
Darumbal			✓	✓

4.9.1.2 European Heritage Values

No European heritage sites are listed 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.

4.9.1.3 Military Heritage Values

The international significance of the use of SWBTA for military purposes lies in the area's strategic importance for the development of alliances involving Defence forces of the United States, the Republic of Singapore and other allies. The SWBTA has significant values with regard to Australia's national military heritage, historically as a key training area for the preparation of troops taking part in operations in Malaysia and Borneo during the Indonesian Confrontation and also the Vietnam War. Detailed heritage studies will be undertaken during the EIS to identify significant sites that may be affected by the railway or port area.

4.9.2 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.

4.10 Waste

4.10.1 Description

Construction and operation activities associated within the project are expected to generate waste materials. Potential waste materials are outlined in Table 16.

Table 16: 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

4.10.2 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.

4.11 Traffic and Transport

4.11.1 Description

The major roads likely to be utilised to transport materials to the various project areas are the Capricorn Highway, the Gregory Development Road, the Capella-Alpha Road, the Fitzroy Development Road, the Marlborough-Sarina Road, the Bruce Highway and the Yeppoon-Byfield 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.

4.11.2 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.

4.12 Socio-economic Aspects

4.12.1 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.

4.12.2 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.

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8. ABBREVIATIONS

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
GBRCMP	Great Barrier Reef Coastal Marine Park
GBRMP	Great Barrier Reef Marine Park
GBRMPA	Great Barrier Reef Marine Park Authority
IAS	Intitial Advice Assessment
IPA	*Integrated Planning Act 1997*
KP	Kilometre Point
LAT	Lowest Astronomical Tide
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*
SWBTA	Shoalwater Bay Training Area
TOR	Terms of Reference

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THE NEW ENERGY IN COAL