HANCOCK PROSPECTING PTY LTD

HANCOCK ALPHA PROJECT

INITIAL ADVICE STATEMENT SEPTEMBER 2008

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LIST OF ABBREVIATIONS

^{o}C	degrees Celsius
ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
ACH Act	Aboriginal Cultural Heritage Act
ANRA	Australian Natural Resource Atlas
ANZECC	Australia and New Zealand Environment Conservation Council
APCT	Abbot Point Coal Terminal
AS	Australian Standards
CASA	Civil Aviation Safety Authority
CEMP	Construction Environment Management Plan
Chalco	China Aluminium Corporation
CHMP	Cultural Heritage Management Plan
CPP	Coal Preparation Plant
DBCT	Dalrymple Bay Coal Terminal
DEWHA	Department of Water, Environment, Heritage and the Arts
DIP	Department Infrastructure and Planning
DMC	Dense Medium Cyclone
DMR	Department of Main Roads
DNRW	Department of Natural Resources and Water
DPIF	Department of Primary Industries and Fisheries
DWT	Dry Weight Tonnage
EDC	Environmental Design Criteria
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environmental Protection Authority
EP Act	Environmental Protection Act 1994
EPBC	Environmental Protection and Biodiversity Conservation
EPBC Act	Environmental Protection Biodiversity Conservation *Act* 1999
EPC	Exploration Permit for Coal
EPCA	Exploration Permit for Coal Application
ERA	Environmentally Relevant Activity
FIFO	Fly-in, fly-out
GBRMP	Great Barrier Reef Marine Park
GBRMPA	Great Barrier Reef Marine Park Authority
GBRWHA	Great Barrier Reef World Heritage Area
HIMS	Hancock Integrated Management System
HPCT	Hay Point Coal Terminal
HPPL	Hancock Prospecting Pty Ltd
HSECH	Health, Safety, Environment and Community/Heritage
Hz	Hertz
IAS	Initial Advice Statement
IP Act	Integrated Planning Act 1997
ISO	International Standards Organisation
JORC	Joint Ore Reserves Committee
km	Kilometres
kph	Kilometres per hour
kV	Kilovolts
m	metres
MDL	Mineral Development License
ML	Mining Lease
Ml	Mega litres
mm	Millimetres
MR Act	Mineral Resources Act 1989
Mtpa	Million tonnes per annum
NC Act	Nature Conservation Act

NCWR	Nature Conservation Wildlife Regulation
NZS	New Zealand Standards
PCQ	Ports Corporation of Queensland
QEPA	Queensland Environmental Protection Agency
QLD	Queensland
QR	Queensland Rail
RE	Regional Ecosystem
REDD	Regional Ecosystem Description Database
ROM	Run of Mine
SDPWOA Act	State Development and Public Works Organisation Act 1971
SLA	Statistical Local Area
TOR	Terms of Reference
tph	Tonnes per hour
VM Act	Vegetation Management Act 1999

1.0 PROJECT OVERVIEW

1.1 INTRODUCTION

Hancock Prospecting Pty Ltd (HPPL) is investigating the opportunity to develop the Alpha Coal Project (The Project), a 30Mtpa thermal coal mine in the Galilee Basin, supported by rail and port facilities. HPPL currently holds two Mineral Development Licences (MDL) and one Exploration Permit under application. Export coal from this project will predominantly service the pacific market.

The purpose of this IAS is to firstly, provide the Coordinator-General with adequate information so a decision can be made as to whether The Project should be declared a significant project for which an Environmental Impact Statement (EIS) is required under Section 26 (1) (a) of the *State Development and Public Works Organisation Act 1971*. HPPL will be the applicant for the application and the operator of the Project. Secondly, this IAS aims to provide stakeholders with an overview of The Project, to increase awareness and generate interest. Finally, this IAS seeks to provide an initial overview of the legislative, environmental, social and economic considerations associated with any future study investigation, and operation of The Project.

Once detailed investigations for The Project are complete, the EIS will be lodged with the Coordinator - General as per the requirements of the Final Terms of Reference (ToR) prepared by the Department of Infrastructure and Planning.

1.2 THE PROPONENT

HPPL is a diversified Australian prospecting and mining company that has discovered significant mineral deposits throughout Australia, some of which have underpinned Western Australia's Iron Ore industry. More recently HPPL has realised the development of its mineral deposits with the development of Hope Downs, a $1.3 billion iron ore mine (HPPL being a 50% joint venturer).

Hope Downs was commissioned in November 2007 and the first iron ore shipped from the mine reached its Chinese customers in April 2008. In Western Australia, HPPL is now focussed on developing its Roy Hill 1 Iron Ore Project. This is potentially Australia's largest undeveloped Marra Mumba iron ore deposit, having a preliminary resource estimate of 1.6 billion tonnes.

Founded by Lang Hancock over 50 years ago, HPPL has a long and important history in the minerals, exploration and development industries across Australia. The company has held coal tenements in Queensland for almost 30 years.

HPPL has a long-standing interest in the development of the Galilee Basin, having held and explored coal exploration permits in the Alpha region since 1978. The Hope Downs iron ore mine, which is currently producing at 22 Mtpa and is expanding to 32 Mtpa by year end, is a comparative example of HPPL's ability to finance and deliver world-class resources to the growing world economy. HPPL's corporate details are as follows:

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ABN: 69 008 676 417

Hancock Prospecting Pty Ltd

Address: HPPL House
28-42 Ventnor Avenue
West Perth
WA 6005

Phone: (08) 9429 8222

Queensland Office

Address: Hancock House
355 Queen Street
Brisbane
QLD 4000

Phone: (07) 3231 9600

1.3 PROJECT SUMMARY

The Project will initially be a 30Mtpa open cut coal mine, with the potential for developing significant underground reserves. The coal will be treated by a coal preparation plant (CPP) and conveyed to a rail loadout facility. Coal will be railed to two possible port locations, detailed within this report. Various rail paths have been identified to link the mine to the port options. Initially all product coal is planned for export, however domestic use will be explored. The Project has an expected mine life of 30 plus years, with sufficient Joint Ore Reserves Committee (JORC) compliant resources to significantly extend The Project life beyond 30 years.

It is important to note, the rail and port facilities will be designed to transport, load and ship capacity greater than HPPL production catering for neighbouring Galilee Basin producers and other down stream producers. Third party user arrangements are currently being discussed with such producers.

The expected capital expenditure for The Project is $7.5 billion, consisting of $3 billion for the construction of the mine, $2.5 billion for rail and $2 billion for port development. Over the 30 plus years the mine is in operation, The Project will deliver a significant royalty stream to the Queensland Government.

The construction and operation of The Project will provide employment for approximately 2,500 people during peak construction, and approximately 1,600 people at full production. In addition, local communities will benefit from a flow-on effect generated by improved social infrastructure, transport corridors and the establishment of support service industries required by The Project.

The target commencement date for construction is 2010 with the first shipment of coal in 2013.

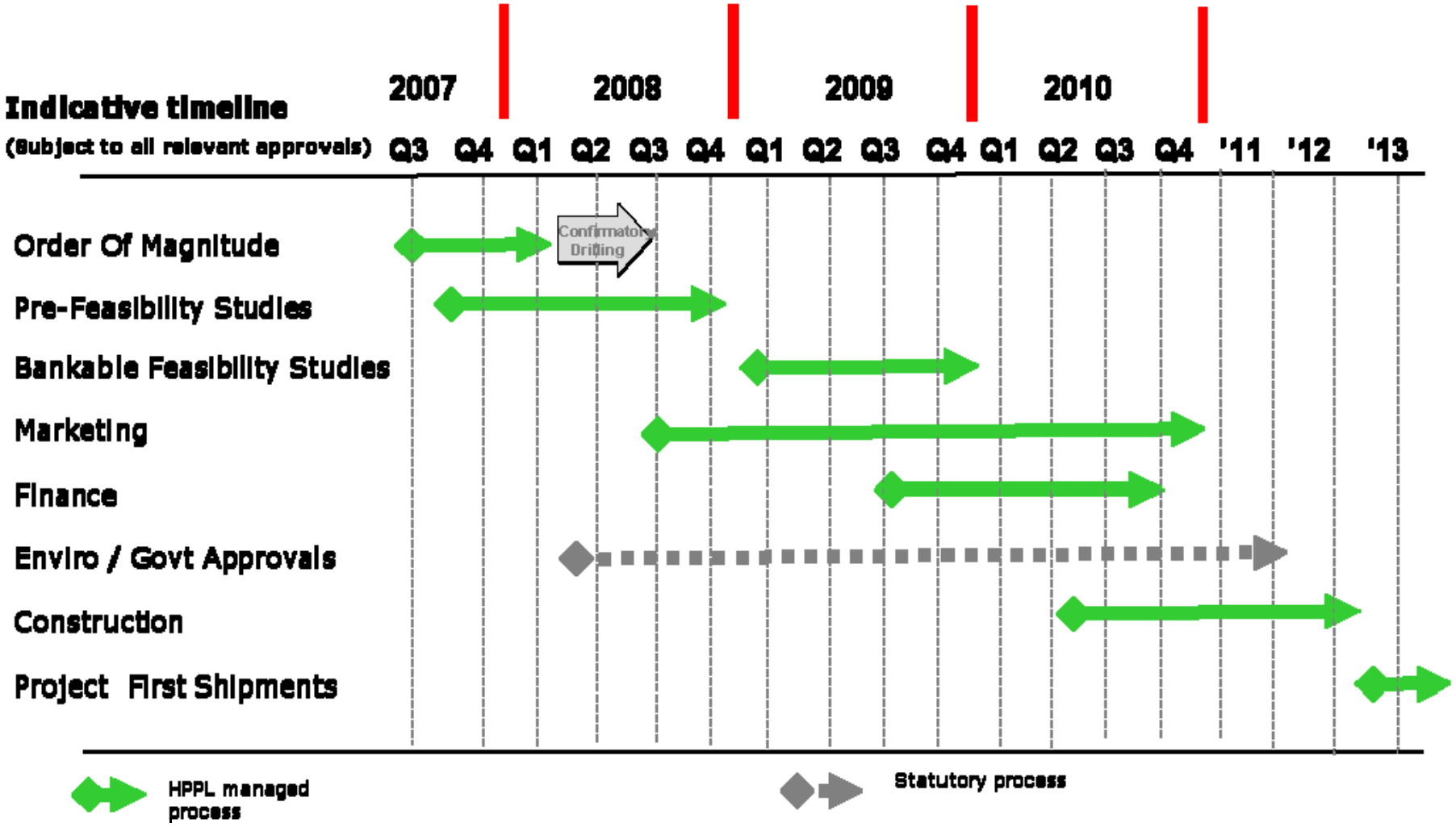

Figure 1: Anticipated project timeline

1.4 PROJECT LOCATION

The Project is located approximately 50 kilometres (km) north of Alpha, 130km south-west of the township of Clermont and approximately 360km south-west of Mackay in Central Queensland (Figure 2).

Figure 2: Project location

1.5 TENURE

HPPL holds two granted Mineral Development Licences (MDL) in the Galilee Basin (MDL 285 and MDL 333), and has applied for an Exploration Permit for Coal (EPC) (EPC Application 1210). HPPL intends to apply for a Mining Lease (ML) covering the mining area of The Project.

Exploration efforts are currently focused on coal resources contained within MDL 285 and MDL 333.

The mining tenures relevant to The Project are detailed in Table 1 and Figure 3.

Table 1: Mining tenure

Tenure ID	Project area	Holder/Applicant	Status	Expiry
MDL 285	Mining	Hancock Prospecting Pty Ltd	Granted	31.03.2013
MDL 333	Mining	Hancock Prospecting Pty Ltd	Granted	30.09.2012
EPCA 1210	Mining	Hancock Prospecting Pty Ltd	Application	-

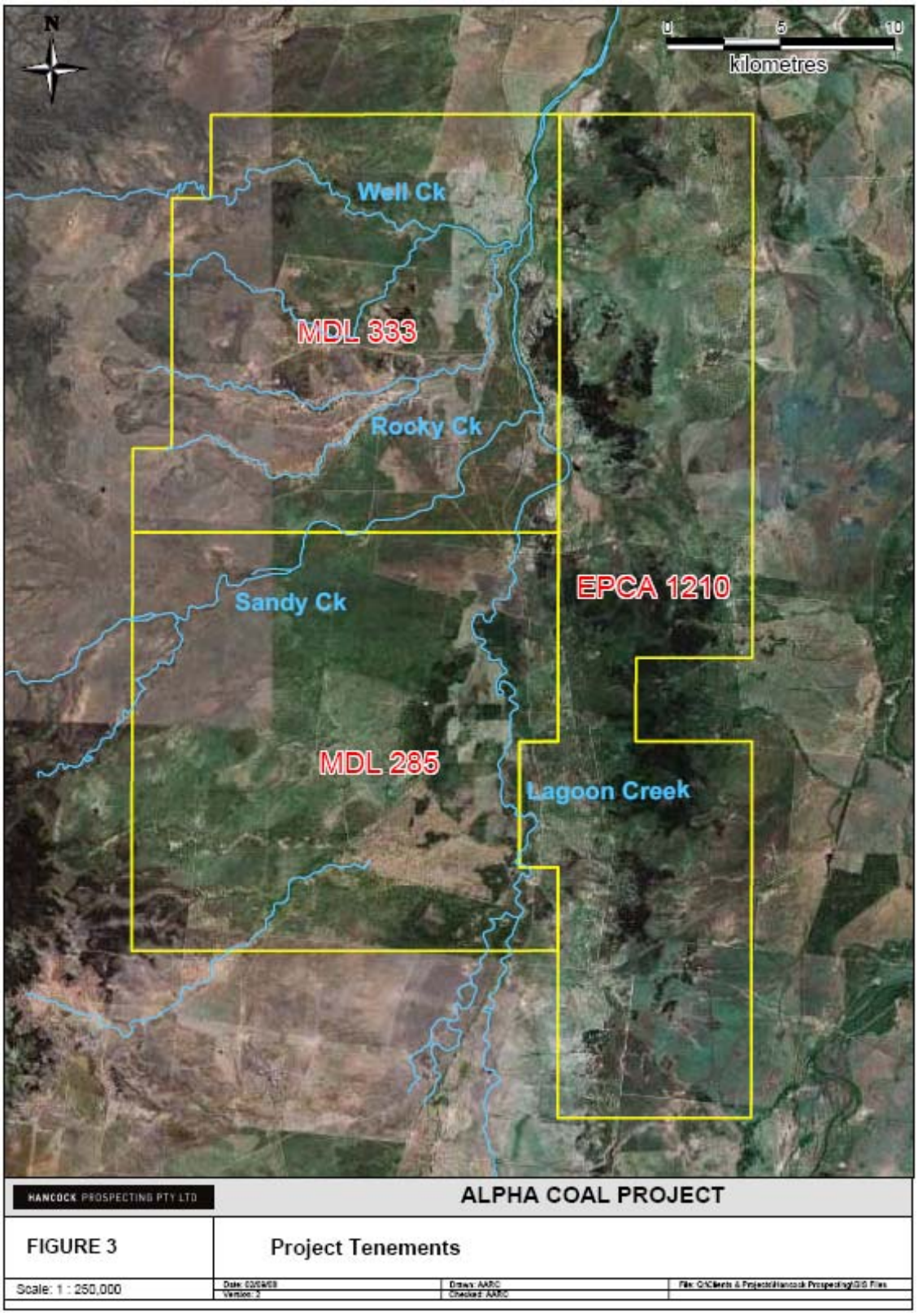

Figure 3: Tenements held for The Project

2.0 JUSTIFICATION FOR THE PROJECT

2.1 GALILEE BASIN COAL RESERVES

The Project deposit lies in the Galilee Basin within the late Permian Colinlea and Bandanna Formations. The Galilee Basin is a significant coal field consisting of up to four principal coal seams suitable for thermal coal, with the potential for liquefaction and gasification.

Within The Project area there are four major coal seams that dip gently from east to west varying in thickness from 5m to 8m, which enables high production open cut mining.

The Project has significant resources of thermal coal which is thought to be within a premium location of the Galilee Basin. Exploration to date has concentrated on the shallow coal suitable for open cut mining, with the potential for resources to be increased substantially with further drilling to the west.

The Project's coal deposit has superior quality characteristics compared to pacific consumers' alternatives

2.2 COAL EXPORT DEMAND AND MARKETS

Global demand for thermal coal has increased over the last decade given the commodity's relatively low cost and stable supply. In 2008-2009, Australian Bureau of Agricultural and Resource Economics (ABARE) forecasts Australia's thermal coal production will increase by approximately 5% to 191 Mtpa. In 2008-2009, thermal coal export volumes are estimated to increase by 6% to 122 Mtpa. The value of exports is estimated to have increased by 35% to more than $9 billion, reflecting higher contract prices that took effect from April 2008. The increased export volumes and higher prices mean the value of thermal coal exports in 2008-2009 is forecast to increase by 74% to $15.9 billion. Growth in demand for thermal coal imports in Asia is expected to continue, particularly in India, the Republic of Korea and Malaysia. Thermal coal imports to these countries are forecast to increase by 18%, 7% and 21% respectively.

Queensland has increased exports of thermal coal in response to strong global demand. The State's thermal coal is typically high in calorific value, has moderate ash levels, is low in sulphur and heavy metal content and is highly desirable in international coal markets. Demand for coal is likely to remain strong given its suitability as a relatively cheap and stable source of energy and heating. Queensland's thermal coal is exported to more than 30 countries. Queensland exported approximately 142.8 million tonnes of coal in the 2005-2006 financial year generating $1,152 million in royalties (Queensland Department of Mines and Energy, Mining and Petroleum 2006 Statistical Tables).

With increased demand for energy and improved environmental practices, Pacific countries are looking to secure a long term reliable supply of the higher quality thermal coals Australia possesses.

2.3 PROJECT RATIONALE

The Galilee Basin and its coal resources are currently undeveloped, and the demand for good quality thermal coal from Australia presents an opportunity to develop this area. The Project will be the biggest coal mine of its type in Australia. The Project meets Queensland Government objectives in realising the timely development of the Galilee Basin whilst ensuring the community benefits and environment objectives are supported.

Queensland will benefit from the development of the mine and associated port and rail infrastructure through long-term contributions of royalties to the State economy, employment and small business opportunities in areas surrounding The Project.

The Project aims to positively influence and benefit the Alpha community and the surrounding Barcaldine Region. The Project will involve one of the largest supply chain systems in Australia with significant integration and planning required.

It is anticipated The Project will require a total investment of approximately $7.5 billion; of which, approximately $3 billion is required for the mine, $2.5 billion for the rail and $2 billion for the port. The Mine is expected to employ 2,500 employees during construction and a permanent work force of 1,600 people will be employed to operate the mine. It is projected a significant number of additional jobs will be created for local and state suppliers and contractors in combination with increased employment opportunities for local communities in the Alpha community and Barcaldine region.

3.0 PROJECT ALTERNATIVES

This section describes the development alternatives of The Project including a 'no action' option. A limited number of port and rail options are available given current capacity constraints in Queensland and the limited infrastructure currently servicing the Galilee Basin.

3.1 ALTERNATIVE PORT OPTIONS

HPPL's mandate has been to demonstrate that it has systematically examined every possible port site that could accommodate The Project. Such extensive and systematic examination was due to:

- The material significance of opening up the Galilee Basin;
- The financial commitment required to develop The Project; and
- The potential impact such additional coal production may have upon Queensland's existing coal transportation and shipping infrastructure.

As such, the decision on a definitive rail corridor and port option is dependent upon operational and shipping capacity. HPPL has applied a systematic approach to identify feasible port and rail corridor options with 22 potentially suitable port locations identified between Gladstone and Townsville. These port locations met the criteria of 'potentially possible' (and included consideration of building a new greenfield port and the expansion of existing ports) and were then assessed on fatal flaw, quantitative and qualitative criteria. The multi-criteria analysis provided a ranking of port options against a range of critical factors. The analysis conducted resulted in five preferred port options being chosen. Further detailed analysis reduced this list to three port locations – Abbot Point, Dudgeon Point and the Shoalwater Bay Area.

The recent Federal Government decision not to allow another proponent's project to proceed in the Shoalwater Bay Area, places restrictions on any other proponent's development projects focussed on this area. At this stage, this outcome has led to the removal of the Shoalwater Bay Area as a potential port location for the HPPL project.

> "This proposal would have clearly unacceptable impacts on the internationally recognised Shoalwater and Corio Bay Ramsar wetlands and the high wilderness value of Shoalwater which is acknowledged in its Commonwealth Heritage listing."
>
> I have carefully considered the advice from my department on the broader proposal and have agree that the plan to run a rail line through Shoalwater and build a coal port in the location proposed is clearly unacceptable."
>
> I wish to make it abundantly clear that I have rejected this proposal because of the impacts the route of the rail line and the location of the coal port would have on the environment."
>
> The Hon Peter Garratt MP
> Minister for the Environment, Heritage and the Arts
> 5 September 2008

This IAS document will therefore focus on the remaining two preferred port options of Abbot Point and Dudgeon Point.

Should future development of the Shoalwater Bay Area be deemed environmentally possible by the Federal Government under the EPBC, HPPL would again include the Shoalwater Bay Area option (removed from this IAS as a result of the decision passed down by Minister Garratt).

3.2 SUMMARY OF ALTERNATIVES

Table 2 outlines the two proposed project port alternatives.

Table 2: Project alternatives

Port location	Description	Analysis of options
Abbot Point	Existing Port (currently under development to expand capacity)	• Existing road and rail infrastructure • Option to use existing outer berth or multi-purpose port (planned under proposed expansion) • Supports Northern Economic Triangle strategy • Planning and approvals partly progressed to expand port • Land areas available in State Development Area adjacent to Port • Strong competition for available stockyard areas
Dudgeon Point	Greenfield port	• Existing rail corridor located nearby • Port and marine conditions well known • Relatively low costs associated with infrastructure and services extensions from existing road and rail networks • Outside Marine Park boundaries • Concept planning already prepared

3.3 NO ACTION OPTION

Should The Project not go ahead, the Galilee Basin area could remain undeveloped for an extended period of time. The opportunity for shared rail and port facilities will be put at risk, which could jeopardise other developments in the area. Australia will continue to lose market share with lower quality coals being provided to end users by the Asian market. In addition, potential future revenue to the State Government will not be realised, and further community development postponed.

4.0 PROJECT DESCRIPTION

The Project involves the following components:

- **The mine:** 30Mtpa thermal coal mine with associated infrastructure and utilities;
- **Rail corridor:** Construction and operation of a rail link from the mine to the preferred port location; and
- **Port and coal handling terminal:** Construction and operation of a port, coal terminal and handling facilities with a minimum 30Mtpa capacity.

Specific elements of each component of The Project are outlined below.

4.1 THE MINE

4.1.1 The mining area

The Project deposit is a well known coal deposit within the Galilee Basin. (Refer to Figure 3) Exploration began in the vicinity of The Project area in the 1970s. HPPL is the holder of MDL 285 and MDL 333. Resource drilling is continuing on both MDLs. HPPL also holds an EPC Application over an area immediately to the east of both MDL 285 and MDL 333. Upon granting of the EPC by the Queensland Government, exploration drilling is planned to continue over the area.

4.1.1.1 Coal resources

Coal resources at The Project have been estimated in accordance with the JORC Code and are listed in Table 3.

Table 3: Coal resources at The Project

MDL	All seams (million tonnes)			
	Measured	Indicated	Inferred	Total
MDL 333	-	589	1003	1592
MDL 285	304	1091	424	1819
Total	304	1680	1427	3411
Target post 2008 drilling	814	1626	1456	3896

Exploration drilling is continuing with the objective of upgrading resource classification, increasing the resource tonnage and providing additional coal quality information analysis for trace elements, process plant design and technical marketing.

4.1.1.2 Coal extraction

The Project will be an open-cut coal mining operation, with a mine life of 30 plus years. When appropriate, underground operations may be developed from the final highwall or through a drift to the targeted seam.

Available topsoil will be removed and relocated to stockpiles for later use in the rehabilitation of the mined area. Surface drainage that crosses the mining areas will be diverted around the operations or the water stored for on-site use.

There are two main seams which are targeted to be mined within the first 30 years. Draglines, shovels and trucks will be used to expose these seams for the duration of the mine life. Truck and shovel mining methods and conveyors will be used to extract the coal and deliver it to the CPP.

Any water inflow to the mining pits from groundwater or precipitation will be collected in sumps and dams located within the mining area, for future mining use.

4.1.1.3 Mine rehabilitation

A mine rehabilitation plan and set of procedures will be established prior to the commencement of mining. The objective of the plan will be to create a post-mining stabilised landscape resembling pre-mining conditions.

4.1.2 Processing

Raw coal will be delivered to the Run of Mine (ROM) facility, where it will be reduced in size for further processing. Sized raw coal will be transferred via conveyor to a multi-module CPP facility consisting of single stage Dense Medium Cyclone (DMC) and spiral circuits. Coarse rejects will be deposited to a stockpile adjacent to the CPP, while tailings material may be pumped to a tailings dam for future rehabilitation. Tailings disposal are further discussed in Section 4.1.3 of this document.

Rail requirements will be serviced via a fully automated product handling and train load out facility. Water from the CPP will be recycled in order to minimise consumption.

A flow chart of the processing procedures is presented in Figure 4.

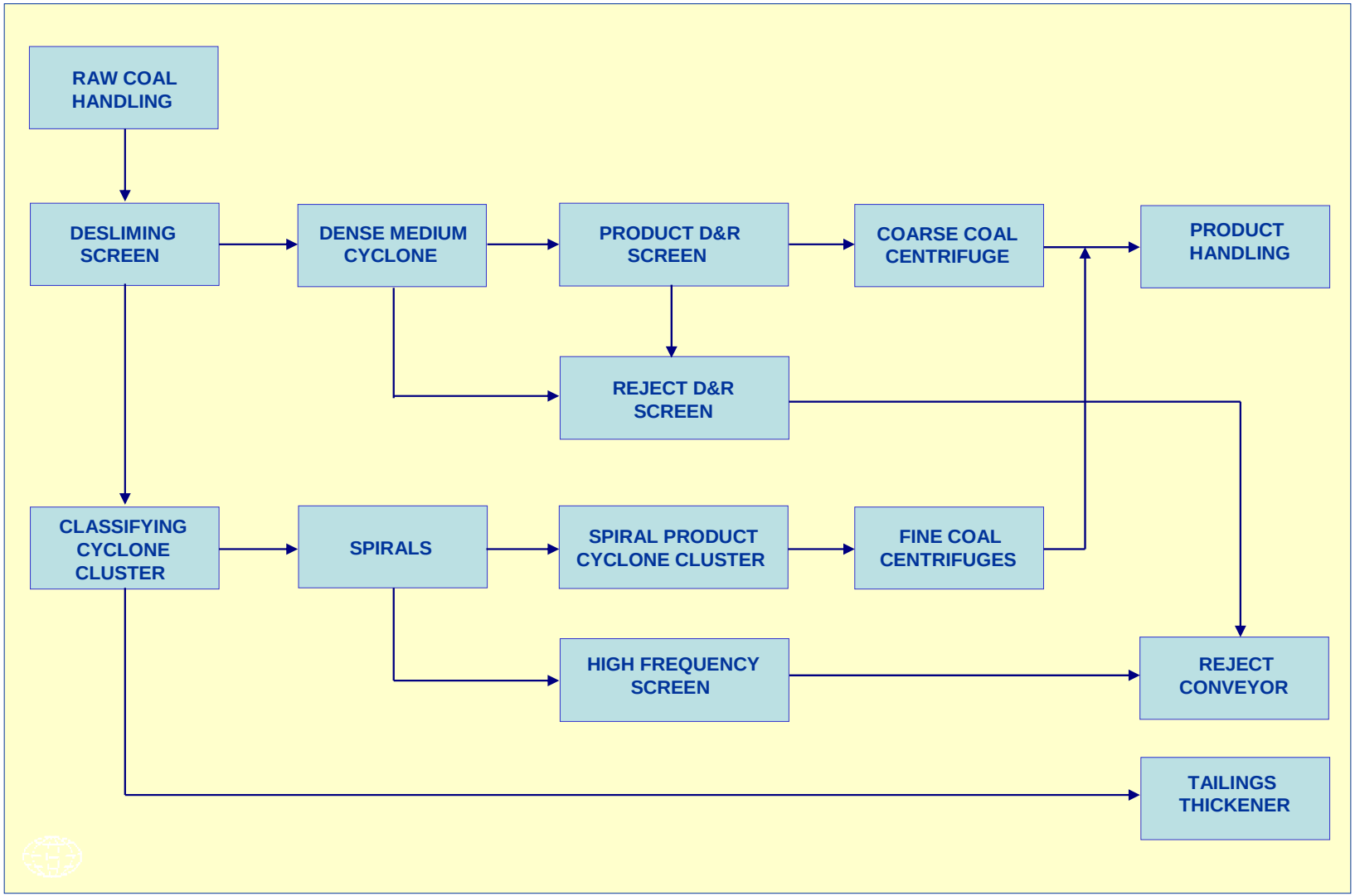

Figure 4: Planned coal processing procedures

4.1.1 Tailings

Consideration has been given to the construction of a dedicated tailings storage facility to be located adjacent to the CPP area. Other methods of tailings disposal are also being considered, including the deposition of tailings material into the mining voids (in-pit tailings disposal) and co-disposal. The appropriate method of reject and tailings disposal will be determined in conjunction with the water resource study as part of the EIS assessment. Plant water consumption and water availability will be major considerations in the selection of the appropriate method of tailings disposal. A mine mouth power station could be developed to utilise mine tailings which would otherwise be fugitive emissions. HPPL is also exploring the suitability of the site for carbon geo-sequestration.

4.1.2 Service road access

The main access road for the operation will be an upgrade to the existing shire road which passes the Surbiton homestead and goes on to the existing Windouree homestead. All the roads within the mining area and effected by the mine industrial area are Council controlled roads. However, the main logistics road route to the site will be along the Alpha/Clermont Road which is a state controlled regional road.

4.1.3 Haul road

All haul roads at the mine will be within The Project tenure and will not impact on any land holders outside of these boundaries. Coal will be transported from the open-cut pit areas to multiple ROM areas with overland conveyors connecting remote ROMs to the main CPP. Haul roads will be designed to minimise environmental disturbance.

4.1.4 Power and fuel supply

It is expected that the power supply for the site infrastructure including CPP, and mining equipment will be in the order of 120MW. There are currently two options for the supply of electricity for The Project. One option is the construction of an on-site power station which will have the capacity to produce all of The Project's energy requirements with the possibility of surplus power to be supplied to any adjacent future operations. The remaining option extends the existing 275kV power grid from Lillyvale through the Powerlink and Ergon supply system to the Project Site. Additional information will be provided on the various power supply options following the completion of the pre-feasibility and feasibility studies. Diesel fuel will be supplied to the site for the operation of mine equipment and the logistics of the supply will be determined during the pre-feasibility and feasibility studies.

4.1.5 Water requirements

Total raw water supply requirements for the mining operation, processing facility and supporting infrastructure will be up to 11,000Ml per annum depending on the final process design. Approximately, 30-36Ml of this 11,000Ml will be potable water, and will be treated in a packaged potable water treatment plant. It is proposed that the water requirements for the mine will be supplied from a combination of ground water pumped from the site aquifers and a clean water pipeline from the Burdekin Dam. The amount of groundwater available onsite and recharge capacity will be determined during future studies. The mine may begin initial operations entirely on ground water until a pipeline from the Burdekin to Alpha (and other possible mining operations) is operational.

Recycled process water will be optimised through the site water management system to ensure raw water make up is minimised. High onsite retention and priority use of run-off will reduce raw water drawing requirements.

Raw water will be stored on site in two raw water dams, one for ground water and one for pipeline water. This separation of storages is required due to the higher salinity of the groundwater supply, while water from sedimentation dams and local catch dams around the site will be used for dust suppression on haul roads.

4.1.6 Staffing and accommodation

The total mine operational staff will be approximately 1,600 personnel, depending on the final selection of mining equipment, with a total construction workforce of 2,500 during the development stage. Given the location of the mine and the distance from an available and qualified workforce, a fly-in-fly-out (FIFO) operation is envisaged. The total numbers on each shift will depend on the final make up of the mining equipment. However, at this stage it would appear there will be around 160 staff, most of whom will work a 5 day on/2 day off roster, with the balance of the employees working a 7 day on/7 day off roster. Further to this, there will be staff associated with the running of the Eco Village and maintenance contractors who will come in periodically for maintenance shutdowns on the major pieces of plant and to construct sustaining capital works.

The Eco Village is likely to be located to the northeast of the Mine Industrial Area where there will be less disturbance to off duty personnel from vibration, noise and light and the final decision with regard to the exact roster system will be determined by consultation during mine start up. The most appropriate change over days will be determined in conjunction with the selected air carrier and other FIFO operations sharing the aircraft.

Staff will primarily be accommodated in an Eco Village on. The Eco Village provided for the permanent workforce will be designed and constructed to blend in with local environment, and will include comfortable, ensuited accommodation, full catering and appropriate recreational facilities. Construction camps with all the usual facilities provided for mine developments will be built to accommodate the construction workforce.

4.1.7 Aerodrome

An aerodrome suitable to accommodate jet aircraft will be built for the transport of the mine operational personnel. The airstrip and associated infrastructure will be situated within the confines of the existing mining tenement applications, adjacent to the Eco Village. It is not considered feasible to operate the FIFO operations from existing aerodromes at Alpha or Emerald, given the large numbers of people and long distances from the mine. The aerodrome will accommodate jet aircraft with a capacity to carry over 100 people.

4.1.8 Other infrastructure and services

Major infrastructure, services and utilities associated with the mine are illustrated in Table 4.

Table 4: Major infrastructure and utilities associated with the mine

Infrastructure type	Infrastructure items
Heavy structures	Heavy equipment workshop; electrical workshop; field maintenance workshop; tyre change/repair workshop; heavy vehicle washdown facility, refuelling and lubrication facility; light vehicle wash; warehouse
Other buildings	Main administration and technical services office; muster and mine operations building; amenities building; security; training/Induction facilities; services workshops
Miscellaneous structures	Covered car parks; water treatment plant shed; hazardous materials storage; where required explosives magazines and storage
Fuel/Lubricants/Air	Main tank farm and lubrication storage; light vehicle fuelling station; air compressor(s) and reticulation
Civil	Public access areas; public entry road; car parks; secure areas; roads/paved areas; mine infrastructure area light vehicle road network; mine infrastructure area heavy vehicle access road; hardstands; machine assembly areas
Site water	Industrial effluent; oily water sources; wash down sources; treatment reuse/disposal; industrial area storm water collection, treatment, reuse and discharge; sewerage collection, treatment, reuse and disposal; site drainage plan
Raw water	Raw water storage/reticulation, potable water treatment, storage and reticulation; fire systems storage tanks, pumping system and reticulation
Power	Site power supply; site substation; reticulation; lighting
Communications	Main control; reticulation

4.2 RAIL CORRIDOR

The Project includes the construction and operation of a new rail corridor to transport coal to the chosen port location. Two port locations are feasible: Abbot Point and Dudgeon Point. Rail corridors under consideration for each of these ports are outlined below.

4.2.1 Planned railway operations and characteristics

Detailed rail operations will be confirmed during the engineering and design phases of The Project. The Pre-Feasibility Study will consider a new, dedicated rail system, as well as use of the existing rail infrastructure where possible. Any new rail system, chosen port and rail corridor option would consider the following factors:

- 30 Mtpa of coal will be transferred via rail from the mine to the preferred port. It is possible to increase the capacity of the rail system to transport up to 80 Mtpa by increasing the number of passing loops or the potential duplication of the existing line. Capacity expansion options will be assessed as part of a Rail Optimisation Study conducted during the Project Feasibility Study and will also be influenced by third party access interest;

- The rail system will be designed to operate diesel-electric trains. The rail system could be electrified with overhead line equipment – 25kv, 50Hz alternating supply, but this is only likely to occur if one of the options including the use of existing rail infrastructure is adopted;

- The minimum train size is likely to be the 10,000t Goonyella-sized train and the final selection of length and gauge will depend on the final port and rail option selected. It is anticipated 20 to 30 train sets may be required to transport 80Mtpa;

- Several passing loops will initially be required for the selected rail route. The number, location and length of passing loops will be determined during the Rail Optimisation Study conducted during the Project Feasibility Study;

- Coal will be transported 7 days a week, 24 hours a day for up to 52 weeks per year. Trains will operate at a maximum speed of 80 km per hour when fully-loaded;

- The gauge of the rail system could be narrow gauge, standard gauge or dual gauge, depending on the most viable business case option. The final selection will be made during the Pre-Feasibility Study;

- New rail lines will be built above the 1-in-100 year flood level. Dust and noise control measures will be incorporated into design to minimise impacts on communities and ecosystems alongside the rail corridor; and

- The operational rail will employ permanent staff. Additional subcontractors and casual employees will be required for rolling stock and track maintenance.

4.2.2 Rail corridor routes

Potential rail corridor routes for the transportation of coal from the mine to Abbot Point and Dudgeon Point are illustrated in Figure 6 and explained below. Each rail corridor is 20km in width giving adequate flexibility to adjust actual line alignment according to ground realities and practicalities. All rail corridor routes will be defined as design and engineering progresses. Table 5 summarises the options:

Table 5: The four rail and two port options being considered for The Project

Option	Port	Information
1	Abbot Point	A new dedicated rail system
1A	Abbot Point	An expansion of the existing QR rail system
2	Dudgeon Point	A new dedicated rail system
2A	Dudgeon Point	An expansion of the existing QR system

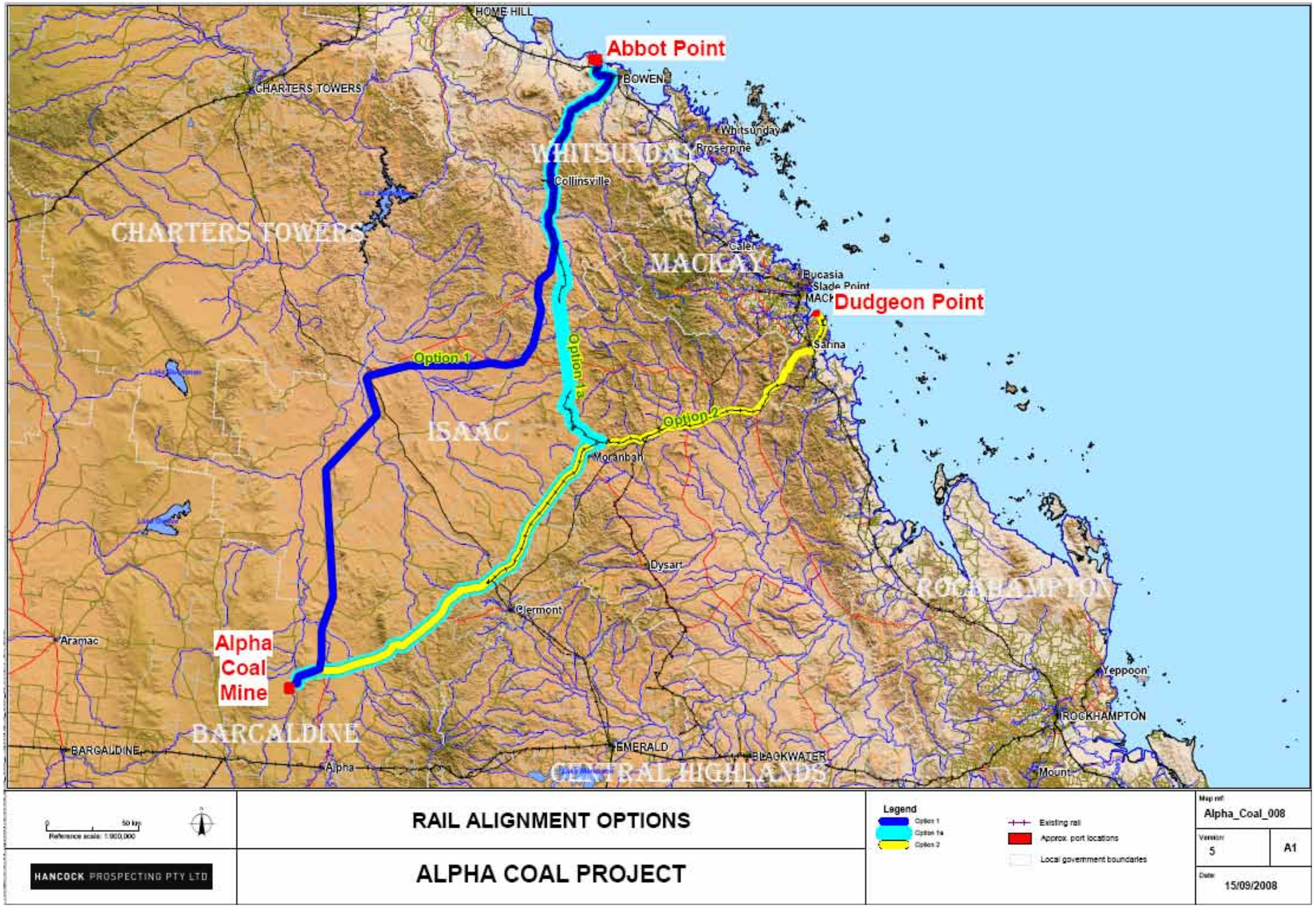

Figure 5: Mine rail corridor routes to Abbot Point and Dudgeon Point

A brief description is given below on each rail corridor option.

4.2.2.1 Mine to Abbot Point rail corridors

Rail corridor description

Two options will be evaluated for the rail corridor from the mine to Abbot Point:

- **Option 1:** This rail corridor includes 484km of new track extending from the mine in a north north-easterly direction before utilising the existing Newlands to Abbot Point Rail Corridor. The track will continue through the existing Queensland Rail (QR) rail corridor to the Abbot Point Coal Terminal.

- **Option 1A:** This rail corridor includes 100km of new rail to connect to the QR line at Blair Athol. This option traverses existing QR lines, including the Northern Missing Link, to join the existing Newlands line to Abbot Point Coal Terminal. Total distance from mine to port is 525km.

4.2.2.2 Mine to Dudgeon Point rail corridors

Rail corridor description

Two options will be evaluated for the rail corridor from the mine to Dudgeon Point:

- **Option 2:** This rail corridor includes 401km of new track extending from the mine in a north-easterly direction before utilising the existing rail corridor from Blair Athol to the Connors Range. A new rail spur will link the line near the Connors Range to the proposed coal terminal at Dudgeon Point.

- **Option 2A:** This rail corridor includes 100km of new rail to connect to the QR line at Blair Athol. This option will utilise an expanded QR infrastructure and rail corridor to the coast, with a new spur line to the proposed coal terminal at Dudgeon Point. Total distance is approximately 401km.

4.2.3 Rolling stock maintenance facilities

The necessity for The Project and HPPL to construct maintenance facilities will depend upon the ownership and operational responsibilities of the rail line and rolling stock. Maintenance of rolling stock and associated facilities will be the responsibility of the rail operator. A rolling stock maintenance facility will be required along the length of the rail corridor. Facilities will enable minor maintenance, provisioning and major maintenance. Depending on the preferred alignment, existing maintenance facilities may be able to be utilised.

4.2.4 Rail corridor construction

A construction timetable with workforce numbers will be developed as part of the Project Feasibility Study and based on the selected rail corridor. A significant construction workforce is likely to be required. The majority of the workforce will be housed in temporary camps at suitable locations along the chosen rail corridor route. A Construction Environment Management Plan (CEMP) and associated procedures will manage environmental and social issues associated with construction.

4.2.5 Other rail infrastructure and utilities

Two rail loops of approximately 5km will be built within the confines of the tenement. The port will have two rail loops of approximately 5km. Longer loops may be required if larger trains are determined to be the most suitable option for coal transport.

4.3 PORT

4.3.1 Port location

Two potential port locations between Gladstone and Townsville are considered feasible for The Project and have the capacity to service the handling of at least 30Mtpa of coal for export. The options are Abbot Point and Dudgeon Point. Coal terminal and coal handling operations will be of a similar scale and nature irrespective of the port location chosen.

4.3.1.1 Abbot Point

Abbot Point is an existing coal export port and is currently undergoing expansion and development. The port and surrounding land has extensive expansion planned and committed for the next five years to meet growing coal export demand. The coal terminal is likely to expand to over 100Mtpa capacity. The proposed port provides adequate protection from the prevailing weather conditions.

A multi-purpose port concept meeting the Queensland Government's development strategies identified in the Northern Economic Development Triangle Strategy is proposed. This provides opportunity for industry development on land adjacent to the port. The proposed site of the China Aluminium Corporation (Chalco) alumina refinery is likely to be located in the State Development Area adjacent to the port.

4.3.1.2 Dudgeon Point

Dudgeon Point is located approximately 5km north-west of Hay Point. The port site offers similar conditions to those pertaining to the adjacent Dalrymple Bay and Hay Point Coal Terminals. Access to Dudgeon Point will be facilitated through a designated road and rail access established for The Project. Dredging is required for the berth, swing basin and approach area and departure channel via the Dalrymple Bay Coal Terminal area. A new rail access is required down the Sarina Range to Dudgeon Point.

Land surrounding Dudgeon Point is predominantly held in freehold or lease by the Ports Corporation of Queensland (PCQ). Approximately, 1,300ha is under PCQ control of which 600ha is considered 'developable'. PCQ continues to acquire properties when opportune in order to establish port access and buffer zones in the long term development interests of Dudgeon Point.

4.3.2 Planned port layout

The conceptual layout and design of the port (including coal handling facility and coal terminal) is illustrated in Figure 6 and includes the following components and characteristics:

- The coal handling facility and stockyard requires a suitable site approximately 300ha in area;
- Up to two rail loops (5km in length) are located on the site with a dump station to facilitate the unloading of coal. The rail loop and rail dump station will allow for expansion to increase handling capacity;
- Unloading conveyors transfer coal from the rail dump station to the stacker which is placed into stockpiles on the stockyard using reclaimer machines;
- Stockpile capacity will initially cope for 30Mtpa throughput capacity. Adequate land for the potential expansion in stockpile capacity to 80Mtpa and beyond is required;
- Outloading conveyors transfer coal along the approach jetty; the approach jetty will be up to 4.5km in length depending on the selected port location;
- The port will accommodate a full range of vessels from Panamax size vessels to Cape Class vessels i.e. 250,000 dry weight tonnage (DWT);
- A shiploader on the wharf transfers coal to the ships. Provision for the expansion of the wharf and shiploaders will allow for additional berthing capacity in the future;
- Internal power supply, control systems and communications infrastructure will be required for the port, terminal and handling facility;
- Substations, workshops, administration buildings, security, amenities and lighting and associated infrastructure for the coal terminal and rail yard will be constructed;
- Depending on the port location, roadworks and bridges are required for terminal and rail yard access;
- A suitable water supply will be required for each option and the specific solution for the successful site will be decided during the study phase. Desalination plants may be required for each port option to cope with increased throughput capacity; and
- Sedimentation ponds and stormwater drainage systems are incorporated into the design.

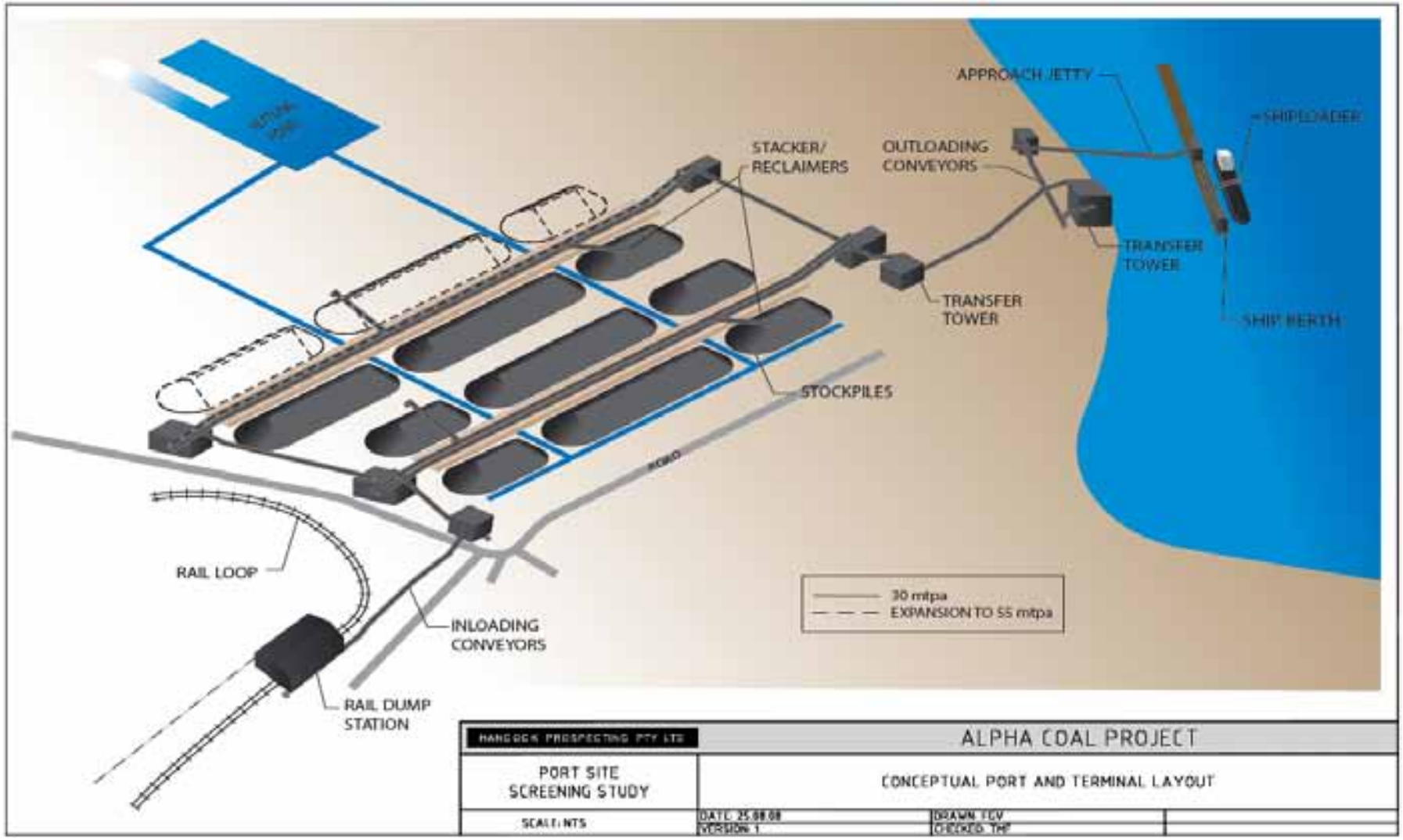

Figure 6: Conceptual port and terminal layout

4.3.3 Vessels

The port will ultimately accommodate a range of vessels from Panamax size vessels to Cape Class size vessels. These vessels are large and require suitable tugs to assist berthing and unberthing. The provision of tugs with adequate horsepower is required for low speed manoeuvring of the vessels.

Ultimate port capacity should be suitable for Chinamax vessels.

4.3.4 Reclamation and stockyard earthworks

The stockyard will drain into an adjacent settlement pond(s). The settlement pond will provide treatment and retention of stormwater prior to the recycling/reuse of water within the facility or discharge.

4.3.5 Terminal throughput

The port will require the capacity to operate at 30Mtpa terminal throughput. Planning will allow expansion of the terminal to 80Mtpa and beyond in the future. Two operational berths with one shared shiploader (operating at 8,000tph capacity of 6,000tph net) will provide more than adequate handling capacity.

4.3.6 Stockyard and conveyor

Coal blending will be undertaken at the port within the stockpile area.

4.3.7 Marine structures

The following design criteria are adopted for the marine structures associated with the port:

- The jetty and wharf to cater for up to two outloading conveyor streams; and
- Capacity for the expansion of the berths to accommodate three ships simultaneously with two shiploaders (50-80Mtpa facility).

4.3.8 Power supply

Initial investigations suggest that the existing electrical supply capacity in the vicinity of Abbot Point and Dudgeon Point will be sufficient to cater for the additional load introduced to the system with the new port facility. It is anticipated that a new HV distribution system is required to supply power to the proposed Abbot Point terminal and this may be fed from Ergon Energy's Merinda Substation. A similar new HV distribution system may be required for Dudgeon Point and may be fed from Ergon Energy's Alligator Creek Substation. A new HV substation would be provided onsite at Abbot Point and Dudgeon Point for further distribution to local load centres and the final sub-circuits related to the site.

4.3.9 Construction

A construction timetable with workforce requirements will be developed as part of the Project Feasibility Study. It is likely that construction workers will be housed in nearby accommodation without a need for temporary construction camps at either port location.

Abbot Point

It is anticipated that the type of structure and construction techniques will be developed in consultation with PCQ, the current owner/operator, if Abbot Point is selected. The options available at Abbot Point are the proposed Multi-Cargo Facility or another offshore berth with connecting jetty. The Multi-Cargo Facility will involve dredging in shallow water and using the dredge spoil for reclamation of berths and backup area. A 1km approach jetty or causeway would be necessary.

The offshore option would comprise a new wharf on the same alignment as the existing wharf and a 3.8km long approach jetty. Dredging to provide adequate water depth for vessel manoeuvring would be required at the approach channel, turning basin and berth pocket.

Dudgeon Point

At Dudgeon Point a jetty 4.5km long would connect the wharf to the shore. The jetty structure would comprise a series of piled supports carrying precast concrete beams side by side. These would form a deck on which a roadway with passing bays and outloading conveyor would be provided.

Offshore the wharf would be aligned with the existing DBCT facilities and constructed as a steel skeletal structure with rails for the travelling shiploaders. Precast concrete planks would again be used to provide minimum deck area for access and maintenance. Berthing dolphins would be separate structures below the wharf deck level and with the fender alignment seaward of the wharf structure.

The extensive use of prefabricated steel components and precast deck units precludes the need for in-situ concrete to be used so far from a batching plant onshore. It also permits the simultaneous construction of the jetty and offshore wharf and dolphins from floating plant since the wharf construction is then not reliant on access via the jetty. Some dredging will be required at Dudgeon Point to extend the existing approach and departure channel from DBCT as well as a turning basin and berth pocket.

4.3.10 Other port infrastructure and utilities

The terminal at the port will incorporate additional infrastructure, services and utilities including inloading and outloading infrastructure, administration blocks, workshops, fuel storage, car parks and a communication centre.

5.0 THE EXISTING ENVIRONMENT

5.1 THE MINE

5.1.1 Regional climate

Data from the nearest Bureau of Meteorology weather station, located approximately 120km north-east of the Project at Clermont, indicates that the Project site experiences rainfall all year round. The majority of rainfall occurs between December and February, with the least falling between July and September. Mean annual rainfall recorded at this station is 801 millimetres (mm), based on data collected from 1870 to present. Rainfall patterns for the area are illustrated in Figure 7.

The annual mean maximum temperature in the region is 29.7 degrees Celsius (°C) with an annual mean minimum temperature of 15°C. Figure 8 illustrates that the coolest temperatures occur in July with average minimum temperature of 6.7°C. The highest temperatures were recorded in December with average maximum temperature of 34.9°C.

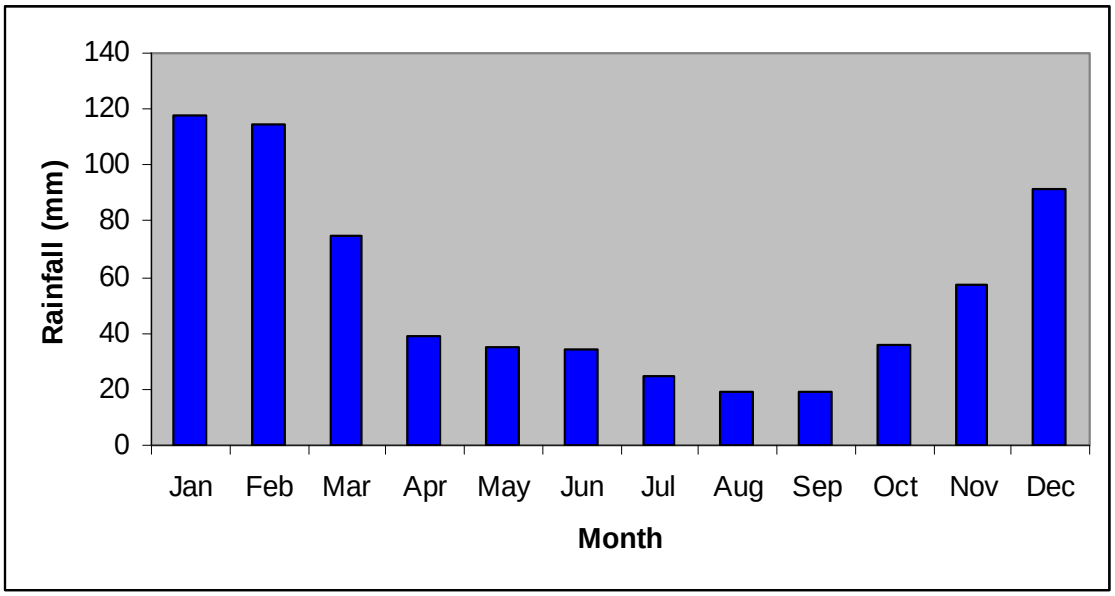

Figure 7: Mean monthly rainfall at Clermont weather station (1870-present)

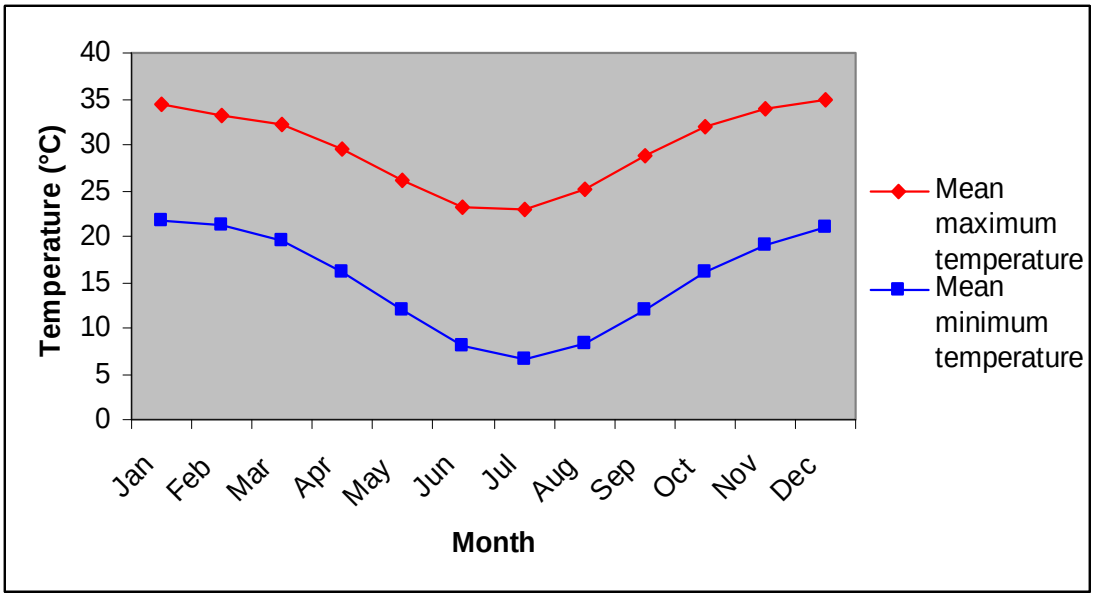

Figure 8: Mean maximum and minimum temperatures at Clermont weather station (1910-present)

5.1.2 Geology and soils

The Project deposit lies in the Galilee Basin within the late Permian Colinlea and Bandanna Formations. The coal bearing strata sub-crop in a linear, north-south trending belt in the central portion of the basin and are essentially flat lying. No major regional scale fold and fault structures have been identified in regional mapping of The Project area.

There are four major coal seams within the deposit, which vary in thickness from 5m to 8m. Figure 9 shows a typical east-west cross section across the deposit, while Figure 10 shows the seam subcrops and the MDLs and existing drillholes.

Searches of the Interactive Resources and Mapping database show the predominant soil type in the vicinity of The Project is a massive yellow earth. Site-based soil studies will be conducted during the EIS to confirm desktop study findings.

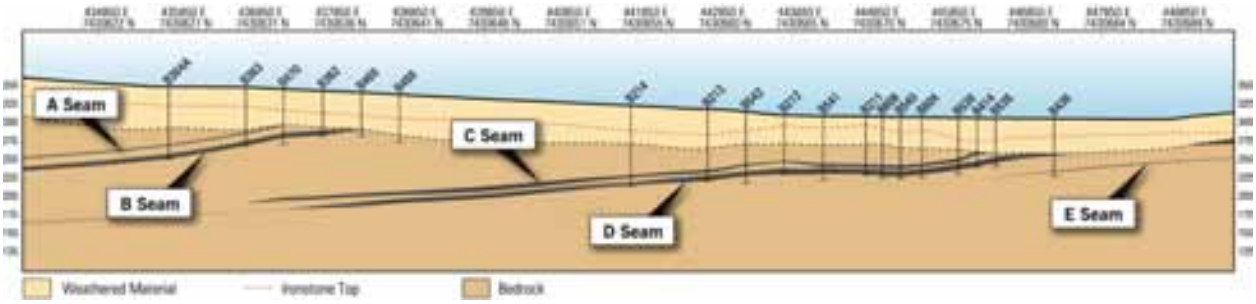

Figure 9: Typical east-west cross section of MDL 285

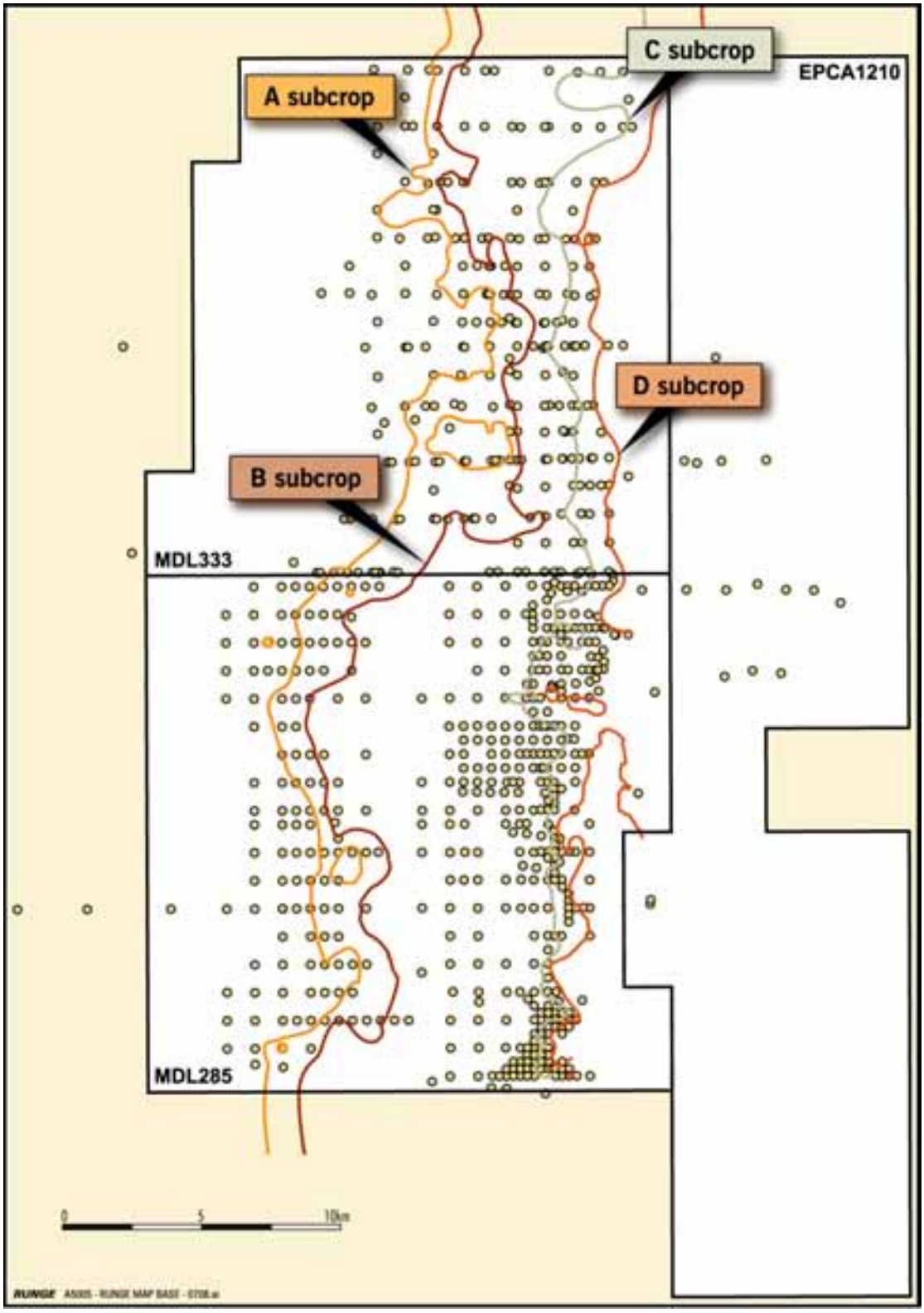

Figure 10: Drillholes and seam subcrop lines over The Project

The coal seams associated with The Project are of thermal coal quality, as summarised in Table 6.

Table 6: Typical coal quality parameters for The Project

Parameter	Raw coal	Washed coal
Ash %	12-35	8-14
Gross calorific value (kcal/kg)	4500-6500	5500-6900
Total sulphur %	0.5-0.8	0.4-0.8
Yield %	-	60-85

5.1.3 Landscape

The Mine area is located on a gently undulating landscape with a typical elevation of approximately 320m above sea level. Large sections of the proposed mine area have been cleared of vegetation for the purposes of low intensity cattle grazing. The vegetation communities which may occur on the mine site are discussed in Section 5.1.5 of this Initial Advice Statement.

5.1.4 Waterways

There are four creek-lines within The Project tenements: Sandy Creek, Rocky Creek, Well Creek and Lagoon Creek. These creeks are tributaries of the Belyando River which flows in a northerly direction and eventually meets up the Burdekin River. The Belyando Catchment is approximately 35,411km^2 and is one of the main subcatchmentss in the Burdekin Basin. A number of small ephemeral drainages also exist on The Project site.

5.1.5 Nature conservation

To gain an understanding of the potential occurrence of important flora and fauna within and adjacent to The Project mining tenure, searches were undertaken of the Queensland Wildlife Online Database (QEPA 2007), the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters database (EPBC 2007) and the QEPA Regional Ecosystem Description Database (REDD). A buffer of approximately 10km around The Project site was investigated.

5.1.5.1 Threatened species

A review of databases has identified some threatened flora and fauna species potentially occurring within The Project area, as listed under the *Nature Conservation Wildlife Regulation 2006* (NCWR) and the EPBC Act.

Table 7: Threatened flora and fauna potentially occurring on the mine site

Threatened species	Number of species (10km buffer from mine site)
Flora	
Listed under the EPBC Act and NC Act	0
Listed under the EPBC Act only	0
Listed under the NC Act only	2
Total	**2**
Fauna	
Listed under the EPBC Act and NC Act	7
Listed under the EPBC Act only	0
Listed under the NC Act only	1
Total	**8**

Some species listed as migratory or marine were also identified from the EPBC Protected Matters Search (Table 8).

Table 8: Migratory and marine species potentially occurring on the mine site

EPBC Act listed migratory or marine	Number of species (10km buffer from mine site)
Listed as migratory terrestrial	3
Listed as migratory wetland & marine	2
Listed as migratory wetland only	3
Listed as migratory marine only	1
Total	**9**

5.1.5.2 Threatened ecological communities

Database searches have identified some threatened Regional Ecosystems (REs) and vegetation communities that exist within the mine site boundary, as listed under the *Vegetation Management Act 1999* (VM Act), the QEPA Biodiversity Status and the EPBC Act. Table 9 summarises the communities and REs identified on the proposed mine site.

Table 9: Vegetation communities and regional ecosystems potentially occurring on the mine site

Ecological community / regional ecosystem	Number of species			
	EPC App. 1210	MDL 285	MDL 333	Total of the mine site
Threatened Communities under the EPBC Act				
Brigalow (*Acacia harpophylla* dominant and co-dominant)	Present	Present	Present	Present
Bluegrass (*Dichanthium* spp.) dominant grasslands of the Brigalow Belt Bioregions (North and South)	Absent	Absent	Absent	Absent
Regional Ecosystems Listed Under the VM Act				
Endangered	2	0	0	2
Of Concern	2	0	0	2
Not of Concern	16	14	18	24
Total	**20**	**14**	**18**	**28**
At Threshold Regional Ecosystems				
	2	0	0	2
Endangered (EPA Biodiversity Status) Regional Ecosystems				
	3	1	1	4

5.1.6 Indigenous cultural heritage

From the commencement of exploration across its mine tenements in the 1970s, HPPL has actively sought to minimise impacts on indigenous heritage places and has adopted a 'site avoidance' approach in all the activities undertaken to date.

The mine lies wholly within the Wangan and Jagalingou native title claim boundary (QC04/5; QUD85/04; accepted for Registration on 5 July 2004). In April 2008 HPPL entered into an interim heritage agreement with Wangan and Jagalingou people prior to commencing further exploration activities later that year. Cultural heritage surveys were undertaken under this agreement in May and June 2008, with the assistance of the Wangan and Jagalingou claimants, and it is planned that further investigations will occur as the exploration programme continues. Detailed indigenous cultural heritage surveys will be conducted over The mine area during the EIS.

5.1.7 European cultural heritage

There are no places currently registered on the Inventory of Heritage Places maintained by the QEPA within the exploration area. Detailed European cultural heritage surveys over the exploration area will be conducted during the EIS.

5.1.8 Community and socio-economic conditions

The township of Alpha lies approximately 50km south of The Project and is the only town of significant size within close proximity. Other townships in the region include Aramac, Barcaldine, Jericho, Moranbah and Clermont, and these lie some distance away. The Barcaldine Regional Council encompasses both Jericho and Alpha, the closest settlements to The Project, as well as the townships of Aramac and Barcaldine.

In 2006, the Barcaldine Regional Council had a total population of 3,264 people consisting of 1,682 males and 1,582 females. Future projections show limited growth for the region. By 2026, medium level growth will see the population figure climb to 3,483 people.

The region is heavily reliant on the sheep, beef cattle and grain industries which supported the highest percentage of employment in 2006 at just over 31%. As a whole, approximately 70% of the population over 15 years is in the labour force.

5.1.9 Environmentally sensitive areas

The QEPA Environmentally Sensitive Areas map did not identify any category A Environmentally Sensitive Areas on the mine site. However, a number of pockets of category B Environmentally Sensitive Areas were identified that are listed as Endangered Regional Ecosystem (Biodiversity Status) in the *Environmental Protection Regulation 1998*. These mapped category B Endangered Regional Ecosystem areas cover no more than 5% of the proposed mine area.

5.2 RAIL CORRIDOR

5.2.1 The mine to Abbot Point

This Section outlines the Option 1 and Option 1A rail corridors from the mine to Abbot Point.

5.2.1.1 Geology, topography and soils

Geology

The Option 1 and Option 1A rail corridors cross a large number of geological formations including:

- Quaternary coastal sand dunes and coastal mud flats;
- Upper Carboniferous to Lower Permian formation;
- Quaternary colluvial and residual soil;
- Bulgonunna Volcanics;
- Hecate Granite;
- Thunderbolt Granite;
- Lizzie Creek Volcanics;

- Blackwater Group;
- Suttor Formation;
- Quaternary alluvium; soil; sand; laterite; lateritic soils and gravels; clay; rubble and silt;
- Anakie Metamorphics;
- Tertiary argillaceous sandstone; and
- Mount Hall Formation

Detailed geological assessments and engineering will be conducted throughout the EIS to ensure rail design and construction is undertaken in accordance with geological conditions.

Topography

The Option 1 and Option 1A rail corridors traverse through low-lying terrain near Abbot Point and then travel along gently undulating hills heading west towards the mine. The majority of the Option 1 rail corridor traverses alluvial plains. The rail corridor steadily climbs between Abbot Point and the foothills of the Pine Mountain area, located between Newlands and Mount Coolon, and through to the mine. A number of watercourses are crossed including the Bowen River, Suttor River and Belyando River. The Option 1 rail corridor crosses the Clarke Range near Collinsville.

The Option 1A rail corridor from Blair Athol to Moranbah is a steady climb along the existing QR rail network. The rail corridor traverses undulating land as it passes through the Narrien Range between Blair Athol and the mine. The Option 1A rail corridor crosses the Isaac and Belyando Rivers.

Soils

The following soils lie within the Option 1 and Option 1A rail corridors (Natmap, 1980):

- Red, brown, yellow and black duplex soils;
- Finely structured self-mulching clays;
- Shallow sand soils underlain by rock;
- Massive earths;
- Shallow loam sandy soils; and
- Deep sandy soils.

Erosion potential of these soils varies according to soil type and structure with duplex soils demonstrating the highest erosion potential.

5.2.1.2 Water

The Option 1 rail corridor falls chiefly within the Belyando/Suttor subcatchment of the larger Burdekin catchment. The corridor crosses several ephemeral creeks and the Suttor and Bowen Rivers. Climatic conditions along the west of the Option 1 rail corridor are generally semi-arid/arid. The vast length of the corridor experiences strong wet/dry seasonality with the wet season between December and April delivering the majority of the annual rainfall. The majority of small creeks and waterways crossed by the rail corridor deliver unreliable flows and may run dry for extended periods towards the end of the dry season.

The Option 1A rail corridor lies within the Belyando/Suttor subcatchment that covers an area of >135,000km^2. The rail corridor crosses the Bowen and Suttor Rivers and a number of ephemeral small creeks and waterways. Locations alongside the rail corridor are generally semi-arid/arid and experience a heavy wet season between December and April; the wet season delivers the majority of annual rainfall.

Land along the Option 1 and Option 1A rail corridors and river catchments is predominantly used for livestock grazing which results in areas of exposed topsoil and large quantities of manure surrounding waterways. Heavy rainfall following extended dry periods can transport large volumes of exposed soils and sediments from the catchment into the waterways.

5.2.1.3 Air quality

The areas surrounding the Option 1 and Option 1A rail corridors are predominantly rural in character. Air emissions are likely to be dust generated through cattle-raising, cultivation and harvesting activities, and exhaust emissions from rural machinery. The Option 1A rail corridor predominantly traverses rural land between Blair Athol and the mine. Emissions from coal mining operations can include dust (particulate matter) and exhaust gas.

5.2.1.4 Noise

A number of smaller towns are located within 15km of the Option 1 and Option 1A rail corridors. Current noise levels in these areas would be typical of rural areas. The main noise sources are likely to be associated with vehicle movement and traffic near main roads.

5.2.1.5 Visual amenity

The regions surrounding the Option 1 and Option 1A rail corridors between the mine and Abbot Point are predominantly rural in character. The Option 1A rail corridor traverses land used for coal mining between Blair Athol and Abbot Point.

5.2.1.6 Ecology

EPBC Report

This EPBC Report identifies the likely occurrence of nationally threatened species and migratory and marine species along the Option 1 and Option 1A rail corridors and is presented in Tables 10 and 11.

Table 10: EPBC Act threatened species report – Option 1 and Option 1A rail corridors

Threatened species	Number of species
Flora	
Listed under the EPBC Act and NC Act	0
Listed under the EPBC Act only	0
Listed under the NC Act only	0
Total	0
Fauna	
Listed under the EPBC Act and NC Act	8
Listed under the EPBC Act only	0
Listed under the NC Act only	0
Total	**8**

Table 11: EPBC Act migratory and marine species report – Option 1 and Option 1A rail corridors

EPBC Act listed migratory or marine	Number of species
Listed as migratory terrestrial	5
Listed as migratory wetland & marine	0
Listed as migratory wetland only	6
Listed as migratory marine only	3
Listed as marine species	13
Total	**27**

Regional ecosystem mapping

A regional ecosystem mapping database search was conducted for the Option 1 and Option 1A rail corridors and is presented in Table 12.

Table 12: Regional ecosystems – Option 1 and Option 1A rail corridors

Ecological community / regional ecosystem	Number of species
Threatened communities under the EPBC Act	
Brigalow (*Acacia harpophylla* dominant and co-dominant)	Present
Bluegrass (*Dichanthium* spp.) dominant grasslands of the Brigalow Belt Bioregions (north and south)	Present
Regional ecosystems listed under the VM Act	
Endangered	4
Of Concern	9
Not of Concern	38
Total	**51**
At threshold regional ecosystems	
	0
Endangered (EPA Biodiversity Status) regional ecosystems	
	0

5.2.1.7 Traffic and transport

The Option 1 rail corridor is expected to intersect with at least two major roads, including the Gregory Developmental Road. The Option 1A rail corridor is expected to intersect with at least three major roads, the Suttor Developmental Road and the Gregory Developmental Road, and the Bruce Highway. A number of minor roads and crossings will be transected by both rail corridor options.

5.2.1.8 Cultural heritage and native title

A search of the National Native Title Tribunal database identified five active native title claims registered along the Option 1 rail corridor:

- Wangan and Jagalingou People;
- Jangga People;
- Birri People;
- Gia People; and
- Southern Barada and Kabalbara People.

Eight active native title claims have been lodged for lands along the Option 1A rail corridor:

- Wangan and Jagalingou People;
- Jangga People;
- Birri People;
- Barada Barna Kabalbara and Yetimaria People #4;
- Wiri People #2;
- Wiri People #3;
- Barada Barna Kabalbara and Yetimaria People; and
- Southern Barada and Kabalbara People.

Any additional indigenous language and tribal groups with interest in The Project will be consulted in accordance with the *Aboriginal Cultural Heritage Act 2003* (ACH Act).

5.2.1.9 Socio-economic conditions

The following major towns lie within approximately 15km of the Option 1 rail corridor:

- Merinda (210 people);
- Bowen (9,679 people); and
- Collinsville (2,013 people).

An additional 20 towns lie within 15km of the Option 1 rail corridor with a population of less than 200 people.

The following major towns lie within approximately 15km of the Option 1A Rail Corridor:

- Moranbah (6,750 people);
- Clermont (2,500 people);
- Bowen (9,679 people); and
- Collinsville (2,013 people).

An additional 17 towns with a population of less than 200 people lie within 15km of the Option 1 rail corridor.

5.2.2 The mine to Dudgeon Point

This Section outlines the Option 2 and Option 2A rail corridors from the mine to Dudgeon Point.

5.2.2.1 Geology, topography and soils

Geology

The Option 2 and Option 2A rail corridors cross a large number of geological formations including:

- Campwyn Beds;
- Quaternary sand; silt; mud; clay and gravel; alluvium, rubble, soil;
- Carmila Beds;
- Urannah Complex;
- Lower Bowen Volcanics;
- Tertiary olivine basalt and minor porphyritic rhyolite;
- Cretaceous granite; granophyre and dolerite;
- Upper Bowen Coal Measures;
- Undifferentiated sand and sand soil;
- Blenheim Subgroup (Clarkei bed);
- Mt Rankin Beds;
- Anakie Metamorphics;
- Suttor Formation;
- Ducabrook Formation;
- Star of Hope Formation;
- Clematis Sandstone;
- Tertiary argillaceous sandstone; and
- Tertiary basalt.

Detailed geological assessments and engineering will be conducted throughout the EIS to ensure rail design and construction are undertaken in accordance with geological conditions.

Topography

The Option 2 and Option 2A rail corridors from Dudgeon Point to Blair Athol steadily climb along the existing QR rail corridor. The rail corridor traverses undulating land as it passes through the Narrien Range between Blair Athol and the mine. A number of minor creeks and watercourses are crossed; major water crossings include the Isaac River and Belyando River.

Soils

The following soils lie within the Option 2 and Option 2A rail corridor (Natmap, 1980):

- Yellow, brown, red and black duplex soils;
- Finely structured self-mulching clays;
- Shallow sand soils underlain by rock;
- Massive earths; and
- Shallow loam soils.

5.2.2.2 Water

The proposed rail corridor south from Dudgeon Point to the intersection with the existing rail network lies within the Sarina catchment. The rail corridor traverses Louisa Creek near its outlet into Dalrymple Bay; Plane Creek near Sarina and smaller drainage lines including Plumtree Creek; all of which drain into Fig Tree Point (south of Sarina). Land use within this area has been identified as primarily irrigated cropping.

The Option 2 and Option 2A rail corridors cross the Belyando River, Isaac River and numerous smaller creeks. The Belyando/Suttor catchment has an area of 73,335km^2 with land use dominated by grazing which leads to high turbidity levels in the system during the wet season. The Isaac River flows in a south-easterly direction to join the Mackenzie River, which is part of the Mackenzie/Nogoa catchment, which has an area of 79,615km^2. The Fitzroy River Basin has been assessed as substantially modified and suffers from elevated levels of nutrients and turbidity especially during the wet season, similar to the Burdekin.

5.2.2.3 Air quality

The areas surrounding the Option 2 and Option 2A rail corridors between the mine and Blair Athol are predominantly rural in character. Air emissions are likely to be associated with dust generated by cattle-grazing and breeding, cultivation and harvesting activities, and exhaust emissions from rural machinery. The rail corridor traverses land used for coal mining between Blair Athol and Dudgeon Point. Emissions from coal mining operations include dust (particulate matter), exhaust gases and greenhouse gas emissions from site equipment and processing facilities.

5.2.2.4 Noise

A number of smaller towns are located near the Option 2 and Option 2A rail corridors. Current noise levels in these areas would be typical of rural areas. The main noise issues are likely to be associated with mining operations and vehicle movement and traffic on main roads.

5.2.2.5 Visual amenity

The region surrounding the Option 2 and Option 2A rail corridor between the mine and Blair Athol is predominantly rural in character. The rail corridor traverses land used for coal mining between Blair Athol and Dudgeon Point.

5.2.2.6 Ecology

EPBC Report

This EPBC Report identifies the likely occurrence of nationally threatened species and migratory and marine species along the Option 2 and Option 2A rail corridors and is presented in Tables 13 and 14.

Table 13: EPBC Act threatened species report – Option 2 and Option 2A rail corridors

Threatened species	Number of species
Flora	
Listed under the EPBC Act and NC Act	11
Listed under the EPBC Act only	0
Listed under the NC Act only	0
Total	**11**
Fauna	
Listed under the EPBC Act and NC Act	15
Listed under the EPBC Act only	0
Listed under the NC Act only	0
Total	**15**

Table 14: EPBC Act migratory and marine species report – Option 2 and Option 2A rail corridors

EPBC Act listed migratory or marine	Number of species
Listed as migratory terrestrial	4
Listed as migratory wetland & marine	0
Listed as migratory wetland only	6
Listed as migratory marine only	0
Listed as marine species	0
Total	**10**

Regional ecosystem mapping

A regional ecosystem mapping database search was conducted for the Option 2 and Option 2A rail corridors and is presented in Table 15.

Table 15: Regional ecosystems – Option 2 and Option 2A rail corridors

Ecological community / regional ecosystem	Number of species
Threatened communities under the EPBC Act	
Brigalow (*Acacia harpophylla* dominant and co-dominant)	Present
Bluegrass (*Dichanthium* spp.) dominant grasslands of the Brigalow Belt Bioregions (North and South)	Present
Regional Ecosystems Listed Under the VM Act	
Endangered	8
Of Concern	14
Not of Concern	34
Total	**56**
At threshold regional ecosystems	
	0
Endangered (EPA Biodiversity Status) regional ecosystems	
	0

5.2.2.7 Traffic and transport

The rail corridors are expected to intersect with at least two major roads, including the Gregory Developmental Road and Suttor Developmental Road near Blair Athol. A number of minor roads and crossings will be crossed by both rail corridor options.

5.2.2.8 Cultural heritage and native title

A search of the National Native Title Tribunal database identified eight native title claims registered along the Option 2 and Option 2A rail corridors:

- Wangan and Jagalingou People;
- Wangan/Jagalingou People;
- Barada Barna Kabalbara and Yetomarla People #4;
- Wiri People #2;
- Barada Barna Kabalbara and Yetomarla People;
- Yuibera People;
- Kangoulu People; and

- Kangoulu People #2.

Any additional indigenous language and tribal groups with interest in The Project will be consulted in accordance with the ACH Act.

5.2.2.9 Socio-economic conditions

The following major towns lie within approximately 15km of the Option 2 and Option 2A rail corridors:

- Sarina (3,900 people);
- Nebo (231 people);
- Coppabella (350 people);
- Moranbah (6,750 people); and
- Clermont (2,500 people).

An additional 15 towns with a population of less than 200 lie within 15km of the Option 2 and Option 2A rail corridors.

5.3 PORT OPTIONS

5.3.1 Abbot Point

5.3.1.1 Climate

Abbot Point and the surrounding Bowen region is characterised by sub-tropical weather with rainfall during the summer months and cooler, drier conditions during the winter months. Average annual rainfall is 832mm.

5.3.1.2 Geology, topography and soils

Geology

The geology underlying the Abbot Point port option is quaternary coastal sand dunes and coastal mud flats. There is an outcrop from the Palaeozoic era of Upper Carboniferous Volcanics on the western side of Abbot Point.

Topography

Abbot Point port option is located on a coastal plain with low relief and a gentle fall towards the south, away from the coastline.

Soils

The following subsurface profile was identified during a previous study of the area:

- Fill – uncontrolled, medium dense to dense silty gravely sand, silty sand and sandy clay;
- Coastal sand dunes and mud flat soil – coastal soils comprising of dunal sand and alluvium with tidal mud flats;
- Residual soil – clayey gravels and gravely silty clays; and
- Weathered rock – slightly weathered to fresh, very high to extremely high strength basalt and dolerite

5.3.1.3 Water

Abbot Point lies within the Abbot Bay catchment; a subcatchment of the Burdekin River Basin catchment. Land use within Abbot Bay catchment is predominantly grazing with pockets of irrigated horticulture (sugar-cane); there are small isolated areas of conservation land and a band of wetlands stretching east-west along the northern coastal area of the catchment.

The pronounced wet / dry seasons coupled with the large areas of stock grazing impact the water quality in the catchment. The first rains of the wet season following the dry months displace significant amounts of sediment from the catchment, resulting in very high suspended solid loads being released to the environment on an annual basis. Release volumes of suspended solids from Abbot Bay catchment, however, are lower than the Burdekin average.

5.3.1.4 Air quality

An existing coal terminal is currently operating at Abbot Point and is undergoing a significant expansion. Isolated, low density rural housing is located some distance from the port. To date there have not been any significant issues relating to dust emissions from the port.

5.3.1.5 Noise

Abbot Point Coal Terminal (APCT) operates 24 hours a day, seven days a week. The port has a privately owned, highly utilised road with high traffic volumes during industry shift changes. Existing sources of noise at the APCT are:

- Rail inloading;
- Stockpiling, including use of bulldozers;
- Coal outloading including conveying to the wharf and shiploading; and
- Associated operational controls including sirens.

No sensitive receptors have been identified in the immediate area. Isolated, low density rural housing is located some distance from the port.

5.3.1.6 Visual amenity

Access is not permitted to APCT as the road to the coal terminal is a private road. The locality, with the exception of Bald Hill and Mt Luce, is not clearly visible from existing public roads or railways in the district. Existing stacker reclaimers, coal stockpiles and surge bins can only be detected from the Bruce Highway, approximately 7km away, on a clear day, or appear as a curve on the horizon when viewed from Bowen, 25km away. The existing terminal complex and wharf structure are most prominent when viewed from offshore locations. Isolated, low density rural housing is located some distance from the port.

5.3.1.7 Terrestrial ecology

EPBC Report

This EPBC Report identifies the likely occurrence of nationally threatened species and migratory and marine species within and adjacent to Abbot Point and is presented in Tables 16 and 17.

Table 16: EPBC Act threatened species report – Abbot Point

Threatened species	Number of species
Flora	
Listed under the EPBC Act and NC Act	2
Listed under the EPBC Act only	1
Listed under the NC Act only	0
Total	**3**
Fauna	
Listed under the EPBC Act and NC Act	8
Listed under the EPBC Act only	1
Listed under the NC Act only	0
Total	**9**

Table 17: EPBC Act migratory and marine species report – Abbot Point

EPBC Act listed migratory or marine	Number of species
Listed as migratory terrestrial	7
Listed as migratory wetland & marine	0
Listed as migratory wetland only	7
Listed as migratory marine only	4
Listed as marine species	0
Total	**18**

Regional ecosystem mapping

A regional ecosystem mapping database search was conducted for Abbot Point and is presented in Table 18.

Table 18: Regional ecosystems – Abbot Point

Ecological community / regional ecosystem	Regional area
Threatened communities under the EPBC Act	
Brigalow (*Acacia harpophylla* dominant and co-dominant)	Absent
Bluegrass (*Dichanthium* spp.) dominant grasslands of the Brigalow Belt Bioregions (North and South)	Absent
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nanadewar Bioregions	Present
Regional Ecosystems Listed Under the VM Act	
Endangered	0
Of Concern	1
Not of Concern	5
Subject to the Fisheries Act	1
Total	**7**
At threshold regional ecosystems	
	0
Endangered (EPA Biodiversity Status) regional ecosystems	
	0

5.3.1.8 Marine ecology and world heritage area

The Abbot Point port option is located adjacent to waters of international, national and state significance including:

- Great Barrier Reef World Heritage Area (GBRWHA); and
- Great Barrier Reef Marine Park (GBRMP).

Significant wetlands

The nearest wetland of international significance (Ramsar listed) site is the Shoalwater and Corio Bays area, located in Livingstone Shire in Queensland approximately 350km to the southeast. The Abbot Point port option is located within the Abbot Point – Caley Valley (QLD 001) nationally listed wetland.

5.3.1.9 Traffic and transport

There is a private access road to the APCT. Public access is not permitted.

5.3.1.10 Cultural heritage and native title

There are significant archaeological deposits of Aboriginal cultural material along the dunes of Lot SP156160 (the proposed site for the Abbot Point port option). Part of the site is considered to be of high cultural value to the Aboriginal community. The area of artefacts at the site has the potential to be significantly larger and has been identified by PCQ to be preserved in its land use plan for the port of Abbot Point. A search of the Cultural Heritage data base administered by the Department of Natural Resources and Water (DNRW) revealed the following recognised items of cultural significance (refer to Table 19).

Table 19: Items of cultural significance – Abbot Point

Location	Id number	Latitude	Longitude	Item	Party
Abbot Pt	GK:A30	-19.9039	148.0892	ARTEFACT	No Party
	GK:A34	-19.9039	148.0892	SHELLMID	No Party

There are currently no active native title claims over the area.

5.3.1.11 Socio-economic conditions

Bowen is the only township of a significant size in proximity to Abbot Point, the next closest being the mining town of Collinsville which is approximately 85km to the south west.

Existing population and population projections

As at 30 June 2006, Bowen recorded a population of 9,679 people (5,107 males and 4,590 females). The population is now growing steadily due to net migration generated by the mining activity in the Bowen Basin. The Department of Infrastructure and Planning (DIP) recommends the use of the high series population projections for the Bowen Statistical Local Area (SLA) due to the continued expansion of mining in the Bowen Basin (refer to Table 20).

Table 20: Bowen statistical local area

Population projection		Year			
		2011	2016	2021	2026
Bowen SLA	Low	12,876	13,069	13,044	12,982
	Medium	13,297	13,870	14,379	14,748
	High	13,419	14,177	14,803	15,267

Source: Qld Department of Infrastructure and Planning, Population and Housing Fact Sheets 2007

Economic drivers and employment

Bowen, and to a lesser extent the small township of Merinda 5km west of Bowen, are the service centres for the local area. Bowen contains a reasonably well-developed commercial and industrial structure and serves as the main marketing, service and employment centre for the surrounding region. The primary industrial sectors for the Bowen SLA are horticulture, tourism, fishing, grazing, coal mining, power generation and bulk shipping. The highest occupation groups in the Bowen SLA are laborers (25%), managers (14%) and technician and trade workers (14%).

The horticultural industry remains the largest employer for the region however several significant secondary industries (coke works, salt works, port and railway facilities) together with the normal range of service and light industrial facilities are emerging as significant employment generators. It is worth noting that Abbot Point is currently being investigated as the location for a large alumina refinery which is expected to have a permanent workforce requirement of approximately 1,000 employees and a construction workforce in excess of 2,000 employees.

The Northern Economic Triangle Infrastructure Plan for 2007-2012 (August 2007), developed by the DIP provides significant information regarding the State Government's vision for infrastructure needs for industry and community, as well as skills development and greater development of the services industry.

5.3.1.12 Land use and tenure

The PCQ holds the land around the APCT.

5.3.2 Dudgeon Point

5.3.2.1 Climate

Dudgeon Point and the surrounding Mackay / Sarina region is characterised by subtropical weather with heavy rainfall during the summer months and dry conditions during the winter months. Average annual rainfall is 1,546mm.

5.3.2.2 Geology, topography and soils

Geology

The geology underlying the Dudgeon Point port option is dominated by geological formations of the Palaeozoic Era; the Campwyn Beds. There are Quaternary alluvial / estuarine deposits to the east of Dudgeon Point along Louisa Creek wetlands and to the west along Sandringham Bay.

Topography

The topography of the Dudgeon Point port option is dominated by Mount Hector, which is situated approximately 2km south of Dudgeon Point.

Soils

The following soil types have been identified as likely to occur at the Dudgeon Point port option as they are associated with the Campwyn Beds:

- Uniform or weakly gradational sandy clay loam to light to medium clay texture over weathered rock;
- Duplex and locally gradational sand loam to fine sandy clay loam over brown, yellow-brown or light grey, acidic light to medium clay subsoils generally with iron-manganese nodules and ironstone; and
- Sandy clay loam to light clay surface soils over mottled yellow-brown and grey light to medium or medium to heavy gravely alkaline clay subsoils

The Quaternary alluvial / estuarine deposits identified in the Dudgeon Point area are likely to consist of saline clays, loamy soils and sands, underlaid by gleyed sandy or clayey material.

5.3.2.3 Water

Dudgeon Point represents the far north-easterly point of Sandringham Bay, 14km to the south of Mackay. Sandringham Bay represents the border between the Pioneer catchment to the north and the Sarina catchment to the south. Sandringham Bay drains the Bakers, Rocky, and MacLennan Creeks of the Pioneer catchment and Sandy Creek, Bell Creek, Alligator Creek and Splitters Creek of the Sarina catchment.

Water quality in the creeks draining into Sandringham Bay is strongly influenced by the land uses in the surrounding catchments, which consist predominantly of sugarcane farming and cattle grazing.

Nearly all measured streams in the Pioneer catchment recorded baseflow levels of ammonium, phosphorous, phosphate, nitrogen, and nitrate above the Australian and New Zealand Environment Conservation Council (ANZECC) Water Quality Guidelines for lowland streams. This indicates that upstream land use is negatively contributing to the water quality in the creeks discharging to Sandringham Bay. Insufficient comparable monitoring data is available for the Sarina catchment.

5.3.2.4 Air quality

Dudgeon Point is adjacent to the ports of Hay Point Coal Terminal (HPCT) and Dalrymple Bay Coal Terminal (DBCT). Both ports are dedicated exclusively to exporting coal. Coal dust is the major air pollutant emitted from coal transport and storage activities. HPCT, DBCT and PCQ have jointly established and operate an extensive environmental monitoring network, which includes dust monitoring.

5.3.2.5 Noise

HPCT has been in operation since 1971, predating the establishment of the environmental noise criteria, and as such, measured background noise levels are influenced by the existing activities at the terminal. Both terminals manage highly utilised roads, with high volumes of industrial traffic, with particularly high volumes during industry shift changes. Sensitive receptors have been identified in the immediate area of HPCT and DBCT.

5.3.2.6 Visual amenity

The existing visual landscape is dominated by the coal stockpiles in the yards of both DBCT and HPCT and the associated wharf structures offshore. Both sites have constructed environmental bunds to minimise visual impacts. Future residential development may take place in the proximity of the proposed port site.

5.3.2.7 Terrestrial ecology

EPBC Report

This EPBC Report identifies the likely occurrence of nationally threatened species and migratory and marine species at Dudgeon Point and is presented in Tables 21 and 22.

Table 21: EPBC Act threatened species report – Dudgeon Point

Threatened species	Number of species
Flora	
Listed under the EPBC Act and NC Act	1
Listed under the EPBC Act only	1
Listed under the NC Act only	1
Total	**3**
Fauna	
Listed under the EPBC Act and NC Act	16
Listed under the EPBC Act only	2
Listed under the NC Act only	6
Total	**24**

Table 22: EPBC Act migratory and marine species report – Dudgeon Point

EPBC Act listed migratory or marine	Number of species
Listed as migratory terrestrial	8
Listed as migratory wetland & marine	0
Listed as migratory wetland only	12
Listed as migratory marine only	5
Listed as marine species	0
Total	**25**

Regional ecosystem mapping

A regional ecosystem mapping database search was conducted for Dudgeon Point and is presented in Table 23.

Table 23: Regional ecosystems – Dudgeon Point

Ecological community / regional ecosystem	Number of species
Threatened Communities under the EPBC Act	
Brigalow (*Acacia harpophylla* dominant and co-dominant)	Absent
Bluegrass (*Dichanthium* spp.) dominant grasslands of the Brigalow Belt Bioregions (North and South)	Absent
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nanadewar Bioregions	Absent
Regional ecosystems listed under the VM Act	
Endangered	0
Of Concern	3
Not of Concern	1
Subject to the Fisheries Act	0
Total	**4**
At threshold regional ecosystems	
	0
Endangered (EPA Biodiversity Status) regional ecosystems	
	0

5.3.2.8 Marine ecology and world heritage area

The Dudgeon Point port option is located adjacent to waters of international, national and state significance including:

- Great Barrier Reef World Heritage Area (GBRWHA); and
- Great Barrier Reef Marine Park (GBRMP).

Significant wetlands

The nearest wetland of international significance (Ramsar listed) site is the Shoalwater and Corio Bays area, located in Livingstone Shire in Queensland approximately 160km to the south. Dudgeon Point is located within the Sandringham Bay-Bakers Creek Aggregation (QLD052) nationally significant wetland. Approximately 15km to the south of Dudgeon Point is the nationally significant Sarina Inlet-Ince Bay Aggregation (QLD053) wetland.

5.3.2.9 Traffic and transport

The Dudgeon Point port site is currently freehold or leasehold land held by the PCQ. There are currently no established roads to the proposed port site. Previous works associated with upgrades to HPCT and DBCT resulted in additional traffic loads from vehicles transporting spoil material along the access roads to the coal terminals.

5.3.2.10 Cultural heritage and native title

Initial investigations have not identified Dudgeon Point as being an area of high indigenous cultural heritage value. A search of the Cultural Heritage data base administered by the DNRW did not reveal any items of cultural significance. There are currently two active native title claims which encompass the Dudgeon Point area:

- Wiri People #2 (not registered); and
- Yuibera People (registered).

5.3.2.11 Socio-economic conditions

Dudgeon Point is situated to the southeast of Mackay and to the northwest of HPCT and DBCT. Mackay is the regional centre for the area with the next largest township being Sarina, situated to the southwest. Smaller settlements near Dudgeon Point include Alligator Creek and Hay Point.

Existing population and population projections

Dudgeon Point is located in the Sarina SLA, which is in the same area as Sarina Shire, and in the Alligator Creek State suburb area. As at 30 June 2007, the Estimated Resident Population for Sarina Shire is 11,440. Since 2002, the Shire has experienced consistent annual population growth ranging between 2.4% and 3.7% to 2006, however, growth to 30 June 2007 was significantly lower, increasing by 0.7% (refer to Table 24).

In the Sarina Shire, the population is projected to decrease in the short-term (to 2011) to 11,166 people and then increase with an annual growth of between 1.0% and 1.4% to 13,289 people by 2026 based on medium series projections.

Table 24: Sarina statistical local area

Population projection		Year			
Sarina Shire (note: this area is consistent with the Sarina SLA)		**2011**	**2016**	**2021**	**2026**
	Low	11,010	11,563	12,008	12,375
	Medium	11,166	11,971	12,668	13,289
	High	11,323	12,474	13,581	14,731
Annual change (medium series)		-0.3%	1.4%	1.1%	1.0%

Source: Department of Infrastructure and Planning, PIFU, Population and Housing Fact Sheet, Sarina Shire, May 2008

Within the Alligator Creek State Suburb, there is a population of 1,243 people and in the adjoining Hay Point State Suburb (which contains the existing DBCT) there is a population of 1,386 (Australian Bureau of Statistics (ABS), 2006 Census).

Economic drivers and employment

Mackay and the smaller township of Sarina are the service centres for the area. Mackay contains a full-range of services and facilities and is the regional centre for the district. Sarina serves as the centre to provide most day to day needs. The economy of the region is primarily dependant upon mining, agricultural and tourism industries. The region is rich in natural resources which contribute to the state's economy through exportation of coal, beef, sugar and grain. The beef cattle industry is the largest individual user of land in the Whitsunday and Mackay Region. While mining and urban land uses make a significant contribution to the region's economy, these activities use relatively small portions of the region's total land area.

The overall unemployment rate in Sarina SLA at the time of the 2006 Census was 4.5% (or 225 people), compared with 4.7% for Queensland. At the 2006 Census, the total workforce in Sarina SLA was 5,010 people. Given that the population was 10,720 at the 2006 Census, almost half of the Sarina Shire residents are participants in the labour force. The key occupations in the Sarina SLA for the 2006 Census are technicians and trades workers (19.9%), machinery operators and drivers (19%), labourers (15.5%) and managers (11.3%). The main industries of employment are coal mining, school education, crop growing, sugar and confectionary manufacturing and road freight transport.

5.3.2.12 Land use and tenure

Dudgeon Point is currently freehold or leasehold land held by the PCQ.

6.0 POTENTIAL ENVIRONMENTAL IMPACTS

6.1 THE MINE

6.1.1 Land use and tenure

Land uses within and adjacent to the mine site that will be impacted by The Project are predominantly low intensity cattle grazing. HPPL will investigate compensation agreements with the relevant landholders to negate the impact of The Project on this land use.

6.1.2 Soils, geology and topography

During construction of the mine, particularly during vegetation clearing and earthworks, there is potential for erosion and dispersion of exposed subsurface soils, which could lead to an impact on local water quality. Soil investigations will be undertaken to identify any reactive cracking clay soils, dispersive, erosion prone soils and saline soils as these are of particular concern and will need to be managed during construction.

A Sediment, Drainage and Erosion Control Plan will be developed for construction activities to mitigate and control sediment movement onsite, and minimise the potential for sediment-laden runoff.

During operation of the mine, the draglines and the subsequent spoil dumps will create an altered landform with potential for erosion and geotechnical instability. This impact will be addressed through on-going and progressive rehabilitation of the spoil dumps and other disturbed areas. A Rehabilitation Plan will be detailed in the EIS. In addition, geotechnical investigations will be undertaken during the EIS to discuss the stability of the pit and any mitigation measures which may be undertaken.

6.1.3 Waterways and water quality

The construction of the mine will require the diversion of Lagoon Creek for a distance of approximately 8.7km. Best practice engineering design will be employed in the design of the diversion to minimise any potential impact from this change to the flow path of Lagoon Creek.

The construction and operation of the mine has the potential to negatively impact on both surface and groundwater quality of the immediate area and the associated catchments.

Construction, in particular, has the potential to increase sedimentation in the surrounding surface waters through the release of sediments and topsoils from stockpiles and cleared areas if adequate erosion, sediment and drainage controls are not implemented.

During the construction and operation phases of the mine, potential impacts to surface water quality include:

- Sediment from disturbed soils entering waterways;
- Hydrocarbon and other small spills from storage areas and vehicles; and
- Storage and disposal of waste materials.

Potential impacts on groundwater include:

- Release of groundwater into the pit resulting in decreased groundwater pressure, altered groundwater levels, altered flow direction, and potential for complete dewatering of local groundwater resources; and

- Contaminants from the pit entering into groundwater resources.

Full surface and groundwater investigations will be undertaken as part of the EIS process to discuss existing water resources in and adjacent to the mine and impacts the mine could have on these resources. The procedures for the management of these impacts will be discussed as part of the EIS.

6.1.4 Air quality

During construction of the mine, considerable earthworks will be necessary to prepare the site for infrastructure, along with increased traffic volume (rail and road), increasing the potential for dust generation and air quality impacts.

During the operational phase of The Project there is also the potential for a reduction of air quality due to dust generation and emissions mainly from dragline activities, stockpiling overburden, product transport onsite, processing and loading to rail transport.

Dust generation will be addressed in the CEMP, and minimised during construction and operational phases using appropriate dust suppression and control techniques.

A predictive modelling study of potential dust emissions from The Project will be undertaken as part of the EIS process.

6.1.5 Noise and vibration

During construction of the mine there will be an increase in vehicle movements to and from the mine site due to transport of infrastructure materials, construction personnel and earthmoving equipment. The increased vehicle movements have the potential to generate noise audible on occasion from nearby properties and industry. Other construction-specific activities, such as excavation, clearing, filling and potentially blasting, also have the potential to increase ambient noise levels.

Once the mine is operational there will be an increase in noise levels due to the dragline operation, transport of coal onsite, and coal processing activities.

The potential increase in noise levels, both during construction and operation, is to be mitigated through a combination of environmental management strategies, appropriate infrastructure design and separation distances to sensitive receptors.

Furthermore, the potential for vibration impacts during both construction and operation are expected to be minimal. Possible vibration impacts during construction from limited blasting (if required) would be managed through appropriate design of blasting patterns and selection of blasting techniques.

A detailed noise and vibration assessment will be undertaken as part of the EIS.

6.1.6 Terrestrial ecology

The removal of vegetation is likely to impact the biological and habitat value of the area. Particularly, this could include loss of flora and fauna habitat, restriction of fauna movement, restriction of vegetative dispersal and propagation and increased edge effects.

Appropriate mitigation measures will be developed as part of the EIS process following detailed ecological investigations.

6.1.6.1 Flora

The four endangered vegetation communities found during desktop studies could be impacted during construction and operation of The Project. Further investigation will be undertaken during the EIS to assess the impact on the vegetation communities.

Other flora studies to be undertaken during the EIS include investigations of:

- Increased edge effects and the introduction and colonisation of weeds during construction and operational phases; and

- Clearing of mapped regional ecosystems and the 'least concern' flora within them, requiring permits under the *Regional Vegetation Management Codes.*

6.1.6.2 Fauna

Desktop studies reveal 17 threatened fauna species potentially on the mine-site area. Of these, five are listed as vulnerable, two endangered, and nine migratory and/or marine under the EPBC Act. The 7 species listed as vulnerable or endangered under the EPBC Act are also listed under the NC Act as either Vulnerable or Endangered. In addition one reptile species is listed as rare under the NC Act only. Two threatened plant species potentially exist within the mine site area and are listed as rare under the NC Act. Further investigations will be required during the EIS phase to assess the impacts on these species.

6.1.7 Visual amenity

Infrastructure to be constructed for the mine includes overland conveyors, ROM facility, CPP, storage facilities, access and hauls roads, water pipeline, raw water dams and an accommodation village.

The infrastructure required for The Project has the potential to decrease the visual amenity of the site, however this will be minimised through the use of landscaping and appropriate design (where possible).

The mine may diminish the available visual qualities of the area. The vegetation on site is planned to be used as a visual screen where possible. The mine is located in a rural area and is not expected to impact significantly on local towns or residential areas.

Visual amenity and possible mitigation measures will be investigated as part of the EIS process.

6.1.8 Traffic and transport

Extraction of product from the mine will require the realignment of an existing local council road which currently passes over The Project area. Detailed investigation of the road realignment will be conducted during the EIS and associated feasibility studies.

The mine will generate an increase in traffic to and from the site during construction and operation. In the construction phase, materials will be transported to and from site via road. During the operational phase, the product will be transported off-site via rail and personnel will be accommodated on site. Nearby roads during construction will be more heavily trafficked than at present. The impact of this on the roads has not yet been determined. A traffic study will be undertaken as part of the EIS process.

6.1.9 Cultural heritage

The Project lies wholly within the Wangan and Jagalingou native title claim boundary (QC04/5; QUD85/04; accepted for Registration on 5 July 2004). In April 2008 HPPL entered into an interim heritage agreement with Wangan and Jagalingou people prior to commencing further exploration activities later that year. Cultural heritage surveys were undertaken under this agreement in May and June 2008, with the assistance of the Wangan and Jagalingou claimants, and it is planned that further investigations will occur as the exploration programme continues.

It is expected that prior to the commencement of construction and operational phases a Cultural Heritage Management Plan (CHMP), or associated equivalent, will be entered into regarding the management of Indigenous cultural heritage on The Project site. The CHMP development will follow the processes described under the *Aboriginal Cultural Heritage Act 2003* (ACH Act) which will then be endorsed and registered with the DNRW as a formal CHMP.

6.1.10 Socio-economic impacts

It is expected the socio-economic impacts of The Project will produce overall positive outcomes for the local region, and also at State levels.

The potential impacts which will be addressed in the EIS include:

- Effects on housing, employment and public services in the surrounding area;
- Workforce personnel and services;
- Direct impacts on landowners;
- Local population levels and demographics;
- Infrastructure developments and their effect on the socio-economic dynamics of the region; and
- Workforce arrangement through FIFO operations.

6.2 RAIL CORRIDOR OPTIONS

6.2.1 Land use and tenure

All rail corridor options involve the construction and operation of new, dedicated rail track of varying lengths. These new, dedicated corridors are likely to have a minor impact on the predominantly rural land use crossed by the track. Stock routes may be affected and access issues between and within large farming properties may occur. Impacts can be lessened by aligning rail corridors with existing road corridors and/or existing property boundaries.

6.2.2 Geology, soils and topography

Rail construction activities, particularly clearing and earthworks, have the potential to cause erosion and dispersion of exposed subsurface soils. Detailed geotechnical investigations will be carried out as part of engineering and the EIS to adequately assess the suitability of the stratigraphy for construction and operation of a railway. A soil survey will also be undertaken to identify any reactive cracking clay soils, dispersive, erosion prone soils and saline soils that will need to be managed during construction. A Sediment, Drainage and Erosion Control Plan will be developed to mitigate and control sediment movement onsite, and minimise the potential for sediment laden runoff during construction.

Rehabilitation strategies for the rail corridor will be developed during the EIS process and will include revegetation of cleared areas with native species. During operation the potential for erosion and sedimentation resulting from the rail will be minimised through the ongoing maintenance of revegetated areas and development of suitable management procedures for maintenance activities.

6.2.3 Water

All rail corridors will cross a number of freshwater creeks and streams of varying size. A CEMP will be developed to detail procedures and measures to mitigate potential water-quality impacts.

The low-lying nature of some rail corridor sites may necessitate studies on surface water hydrology and water quality. This will be undertaken as part of the EIS Surface water hydrology studies will review any potential impact of flooding and storm surge on the rail options. Types of waterway crossings and possible stream diversions will also be identified during this stage.

6.2.4 Air quality

During construction the main air quality impacts are likely to be associated with dust generated during earthworks and movement of vehicles over exposed surfaces. Exhaust emissions from vehicles and plant quickly dissipate, and are likely to have a negligible impact on the local environment. Given the large distances to houses and other sensitive receptors, it is unlikely that dust or exhaust emissions will have a significant impact; however, this will be investigated in more detail in the EIS. The CEMP will contain measures to minimise the generation of dust during construction activities.

6.2.5 Noise and vibration

Noise and vibration impacts are not likely to be significant given the distances from nearby properties to the rail corridors.

The potential increase in noise levels, both during construction and operation, is to be mitigated through a combination of environmental management strategies, appropriate infrastructure design criteria and separation distances to sensitive receptors. A detailed noise and vibration assessment will be undertaken as part of the EIS process.

6.2.6 Ecology

Vegetation clearing may be required for some rail construction, however further investigations will be required in the EIS phase. Appropriate mitigation measures will be developed as part of the EIS process after detailed ecological investigations have been undertaken.

6.2.7 Visual amenity

A detailed visual amenity impact assessment would be undertaken as part of the EIS process for the appropriate rail option. Community consultation conducted as part of The Project and the development of the rail corridors will seek to minimise impacts on visual amenity.

6.2.8 Traffic and transport

A detailed traffic study will be undertaken during the EIS to determine what types of crossings are most appropriate in terms of safety, operations and cost. Crossings of other roads and occupational crossings will comply with appropriate design criteria. The exact nature and location of crossings will be investigated further during the EIS, and stakeholders will be consulted.

6.2.9 Cultural heritage and native title

A Cultural Heritage Management Plan (CHMP) will be developed for any items of cultural significance located in the selected rail corridor, to ensure that The Project proceeds in compliance with the ACH Act. The CHMP development will follow the processes described under ACH Act which will then be endorsed and registered with the DNRW as a formal CHMP.

6.2.10 Socio-economic impacts

Consultation with directly affected landowners will be undertaken. Indirect and cumulative positive impacts will flow at the regional and State levels largely through increased employment opportunities arising during construction and operation.

It is expected the construction workforce will be housed in temporary accommodation-style facilities at strategic locations along the route. The precise locations of such facilities will be identified and assessed as part of the EIS.

6.3 PORT OPTIONS

6.3.1 Land use and tenure

Abbot Point

Land within and adjacent to Abbot Point is predominantly used for coal loading and cattle grazing. Abbot Point is an existing coal loading facility. The expansion of this facility is likely to have a negligible effect on land use or tenure.

Dudgeon Point

A more detailed land use analysis will be required for this location due to the mix of land uses within the area. The port area is adjacent to DBCT and HPCT, therefore ensuring land use will remain consistent with existing industry.

6.3.2 Geology, soils and topography

Detailed geotechnical investigations and testing will be carried out as part of engineering and the EIS to adequately assess the suitability of the stratigraphy for construction and operation of a port. Soil investigations will be undertaken to identify any reactive cracking clay soils, dispersive, erosion prone soils and saline soils as these are of particular concern and will need to be managed during construction. A Sediment, Drainage and Erosion Control Plan will be developed to mitigate and control sediment movement onsite, and minimise the potential for sediment laden runoff during construction.

6.3.3 Water

Procedures for the management of potential water quality contamination will be investigated as part of the EIS and the CEMP.

6.3.4 Air quality

Any dust generation will be addressed in the CEMP, and minimised by using appropriate dust suppression and control techniques.

A predictive modelling study of potential dust emissions from the Port operations will be undertaken as part of the EIS process.

6.3.5 Noise and vibration

A detailed noise and vibration assessment will be undertaken as part of the EIS. Any increase in noise levels during construction and operation will be mitigated through a combination of environmental management strategies, appropriate infrastructure design criteria and separation distances to sensitive receptors.

6.3.6 Terrestrial ecology

Investigations will be required in the EIS phase. Appropriate mitigation measures will be developed in the EIS phase after detailed ecological investigations have been undertaken.

6.3.7 Marine ecology and world heritage area

Potential impacts on marine ecology and the GBRWHA are associated with both construction and operation of the port. Potential impacts include:

- Impacts on marine species from dredging and construction activities;
- Dredging and sea dumping during the construction of offshore works which will disturb seafloor habitats and affect water quality;
- The potential for water discharge from the site containing sediments, this impact is expected to be low due to the sedimentation ponds retaining the majority of sediment onsite;
- The increased disturbance from pile driving activities during construction and increased lighting required during construction and operation and the potential impact to marine fauna species ; and
- Beneficial impact provided by additional habitat associated with marine structures.

The water quality of the marine environment could potentially be impacted upon both during the construction and operation of the port. Potential impacts include:

- Spillage and smothering effects on sedentary marine organisms in the vicinity of the structure;
- Increase in turbidity levels resulting from the mobilisation of dredged sediments into the water column; and
- Release of contaminants into the water column as a result of dredging operations.

Coal is generally biologically inert and contains few leachable components and therefore is unlikely to have any major impacts upon marine water quality other than reduced aesthetic amenity.

Increases in turbidity caused by dredging and spoil disposal that would be associated with construction of the Abbot Point and Dudgeon Point Port options are likely to be relatively localised and short-term and therefore are unlikely to have a significant impact. The potential for the migration of turbid plumes towards sensitive habitats and the likely turbidity concentrations will be assessed using the results of hydrodynamic modelling undertaken as part of the EIS process.

Nationally significant wetlands are located within the confines of Abbot Point and Dudgeon Point. The nationally significant Caley Valley wetland is located within the confines of Abbot Point. Dudgeon Point is located within the Sandringham Bay – Bakers Creek Aggregation. This is a nationally significant wetland area and identified as being inhabited by flatback turtles (significant marine fauna species). The construction and operation of the port will be investigated during the EIS process to minimise impacts to any wetland and fauna and flora species of significance.

6.3.8 Visual amenity

Visual amenity will be investigated as part of the EIS process. Due to the isolated nature of the port locations, the potential to impact visual amenity will be limited. Mature vegetation exists at all port sites and may act as partial screen and buffer for visually sensitive receptors.

6.3.9 Traffic and transport

All port options may generate an increase in traffic to and from the site, during both construction and operation. Nearby roads may therefore experience increased traffic loads. The impact on local roads and traffic flows will be assessed as part of the EIS process.

The construction method for the proposed coal terminal off-shore involves a work platform being constructed; along with barge-mounted cranes and support services. The delivery of construction materials is likely to occur by sea as well as by heavy commercial vehicles.

6.3.10 Cultural heritage and native title

All significant Aboriginal cultural heritage in Queensland is protected under the ACH Act. All native title parties and issues will be further investigated as part of the EIS. A preliminary native title investigation revealed that the Wiri People #2 and Yuibera People are identified relevant Aboriginal parties with indigenous concerns for Dudgeon Point. No Aboriginal party has been identified for the Abbot Point port option.

6.3.11 Socio-economic impacts

The socio-economic impacts of the port during the operational phase are expected to be minimal due to the relatively small number of operational personnel required for port operations. During construction, the effects on housing, employment and public services may have a greater effect, and will be assessed as part of the EIS process.

7.0 ENVIRONMENTAL RISK MANAGEMENT

7.1 HANCOCK PROSPECTING IS COMMITTED TO

- The health and safety of its employees, contractors and visitors;
- Working in an environmentally responsible manner;
- Being respectful of indigenous heritage values and traditional rights ; and
- Addressing legislative compliance in every aspect of its work.

The Project will utilise a number of methods to manage potential environmental impacts associated with The Project. The key environmental management tools and controls are described below.

7.2 HANCOCK PROSPECTING PTY LTD INTEGRATED MANAGEMENT SYSTEM

The Hancock Integrated Management System (HIMS) provides a framework for the implementation and monitoring of plans, procedures and work practices that address the Health, Safety, Environment, and Community/Heritage (HSECH) Management Standards of Hancock Prospecting. The HSECH Management Standards will guide construction and operation of The Project. The HIMS is consistent with the principles of ISO14001 Environmental Management Systems and AS/NZS 4801 Occupational Health and Safety Management Standards.

7.3 PROJECT ENVIRONMENT MANAGEMENT SYSTEM

The HIMS will be used as the basis to develop Project-specific management systems to address the HSECH aspects of construction, operation, decommissioning and closure. Environmental performance standards and management requirements will be established for The Project during the EIA process to address project-specific risks and impacts and best practice industry standards are adopted.

Hancock Prospecting will oversee the development of an Environmental Management System (EMS) for The Project. The EMS will be consistent with the principles of ISO 14001, including provisions for monitoring and continuous improvement of environmental performance. The EMS forms a component of the broader Project management system that addresses the occupational health and safety and community and heritage aspects of The Project. A series of supporting Environmental Management Plans (EMPs) will be developed to implement the environmental management and monitoring commitments adopted for The Project.

7.4 PROJECT ENVIRONMENTAL MANAGEMENT PLAN

A Project Environmental Management Plan (Project EMP) will be prepared as a component of The Project EMS. The EMP will detail policies, procedures and controls that will be implemented by Hancock Prospecting to minimise potential environmental impacts during design, construction and operation of The Project. The objectives of the Project EMP are to:

- Define the management structure of The Project and the environmental roles and responsibilities of Hancock Prospecting and contractors on The Project;
- Identify environmental legal requirements relevant to The Project;
- Identify the environmental risks associated with the major activities that will be undertaken during The Project;
- Document Project management controls, procedures and rules to manage the identified environmental risks and satisfy environmental requirements;
- Establish objectives and targets for environmental performance;
- Document monitoring, auditing and reporting requirements; and
- Capture commitments made in the EIS as specific and measurable actions.

Implementation of The Project EMP will ensure adequate protection and management of the environmental values which may be impacted upon by the construction and operation of The Project.

7.5 ENVIRONMENTAL DESIGN CRITERIA

An Environmental Design Criteria (EDC) Report will be developed for the design, engineering, construction and operation of the mine, rail corridor and port. The purpose of the EDC Report is to specify the standards, limits and conditions with which any air, noise and liquid emissions and wastes from The Project must comply in order to meet the applicable regulatory and best practice requirements. The EDC Report will be used to guide engineers in environmentally sound and legally compliant design of The Project, in order to minimise the impact of The Project on the environment. The EDC Report will also be used to check compliance of The Project with design standards and limits.

7.6 CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

A Construction Environment Management Plan (CEMP) will be prepared for the each of the mine, rail corridor and port components of The Project. The CEMPs will detail policies, procedures and controls that will be implemented by Hancock Prospecting and its contractors to minimize potential environmental impacts during the construction phase of The Project. The CEMP has the following objectives:

- Identify the environmental issues and potential environmental impacts associated with construction;
- Outline management plans, procedures and controls for each of the environmental issues associated with construction;
- Specify the environmental responsibilities of The Project management team, contractors and on-site workers;
- Ensure construction is undertaken in compliance with relevant environmental legislation and standards; and

- Define monitoring, reporting and auditing requirements for the construction phase.

Effective implementation of the CEMPs during construction will ensure environmental risks are appropriately managed in a way which satisfies relevant legislative requirements and stakeholder expectations.

7.7 HAZARD, RISK AND HEALTH AND SAFETY ISSUES

Hazards and associated risks are presented by the construction and operation of The Project. Hazards need to be identified and the associated risks managed in order to reduce or eliminate the potential for harm to occur to people, property and the environment. Formal risk assessments will be utilised to identify and manage the risks associated with the construction and operation of The Project. The formal risk assessment process follows the methodology outlined in *AS4360: Risk Assessment*. This process is based on:

- Establishing the context;
- Identifying the risks;
- Analysis of the risks;
- Evaluating the risks; and
- Managing the risks.

The formal risk assessment process will ensure the effective management of all risks associated with construction and operation of The Project.

7.8 CLOSURE AND DECOMMISSIONING

A Mine Closure Plan will be developed for The Project as part of mine engineering and operational design. The Mine Closure Plan will identify procedures, actions and monitoring to be implemented to achieve the desired landscape performance goals. Implementation of the mine Closure Plan will ensure that the post-mining landscape is safe, stable and suitable for the designated future use.

A Rehabilitation Program will be developed and implemented, both during mine operations and after mine closure. The program will involve progressive revegetation with suitable native vegetation and landscaping of the mined area in order to create a sustainable and stable post-mining landform.

It is not expected that the rail corridor and port will require decommissioning within the next 30 years. A decommissioning strategy and closure plan will be developed as part of The Project for the rail corridor and port. The decommissioning strategy will be incorporated into the operational management system of the rail corridor and port.

8.0 RELEVANT LEGISLATION

8.1 THE PROJECT

8.1.1 State Development and Public Works Organisation Act 1971

The *State Development and Public Works Organisation Act 1971* (SDPWO Act) enables the Coordinator - General to declare a project a 'significant project'. Under this process, the Coordinator - General can administer the EIS process and impose conditions relating to the following:

- *Mineral Resources Act 1989;*
- *Environmental Protection Act 1994;*
- *Integrated Planning Act 1997;* and
- Other approvals as required.

The Project consists of several infrastructure components and will require approval under numerous Acts. The EIS process under the SDPWO Act is considered the most appropriate approval pathway and allows a streamlined approval process for all elements of The Project.

8.1.2 Mineral Resources Act 1989

The *Mineral Resources Act 1989* (MR Act) provides a framework for the development and utilisation of the State's mineral resources. The Project will require forms of land tenure regulated by the MR Act such as exploration permits (Coal) and mining leases. The Act is administered by the Department of Mines and Energy; environmental issues are dealt with by the QEPA.

8.1.3 Environmental Protection Act 1994

The *Environmental Protection Act 1994* (EP Act) serves to protect and manage Queensland's environmental values whilst allowing for ecologically sustainable development. The EP Act utilises a number of mechanisms to achieve its objectives, including licensing of Environmentally Relevant Activities (ERAs). The EP Act is administered by the QEPA, which has assumed responsibility for the administration of environmental authorities and compliance, auditing and monitoring of environmental management of mining.

8.1.4 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act requires that approval be sought from the Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA) if it is considered that an action is likely to have a significant impact on any Matters of National Environmental Significance. Matters of National Environmental Significance are described as:

- World Heritage Properties;
- National Heritage Places;
- Wetlands of International Importance (Ramsar wetlands);
- Threatened Species and Ecological Communities;
- Migratory Species;
- Commonwealth Marine Areas; and
- Nuclear Actions (including uranium mining).

The Project may be referred to DEWHA depending on the findings of the flora and fauna surveys conducted over The Project area.

8.1.5 Integrated Planning Act 1997

The *Integrated Planning Act 1997* (IP Act) is the primary legislation for regulating development in Queensland. Activities authorised under an Environmental Authority (mining activities) are considered to be exempt development under IP Act. However, The Project will consist of some infrastructure elements that may not be authorised under an Environmental Authority (mining activities). This includes the construction and operation of the port facility, and dredging within any proposed port facility for safe passage of vessels.

8.2 PROJECT APPROVALS

This section describes The Project approval framework for The Project. The content of this section applies to the mine and all possible options for the port and rail corridor. Given the nature, scale and location of the mine, port and rail corridor options, and the potential impact on surrounding areas, including the Great Barrier Reef Marine Park, there will be a need for various approvals from Commonwealth, State and Local Government departments.

8.2.1 Commonwealth approvals

8.2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is triggered when a project has the potential to impact on a Matter of National Environmental Significance (e.g. World Heritage Area) and / or the environment on Commonwealth land. Particular elements of The Project may trigger the EPBC Act and requires a referral to, and assessment by, DEWHA. If a project is deemed likely to have a

significant impact on a Matter of National Environmental Significance and / or the environment on Commonwealth land then it becomes a 'Controlled Action' under the EPBC Act and the Commonwealth Government will have the power of approval of the project.

A number of additional Commonwealth approvals may be required to facilitate the construction and operation of the different components of The Project. These approvals will be fully identified and confirmed as part of the EIS process. The additional approvals that are likely to be required have been listed separately for the mine, port and rail corridor and are presented in the following sections.

8.2.1.2 The mine

There is the potential that the mine will overlie land held under native title. Consultation with the traditional owners would be required as part of Project development and operation

8.2.1.3 Rail corridor

Native Title Act 1993

There is the potential for the selected rail corridor to pass through land held under native title. Consultation with the traditional owners would be required as part of Project development and operation.

8.2.1.4 Port

Great Barrier Reef Marine Park Act 1975

The *Great Barrier Reef Marine Park Regulations 1983* require that any project with the potential to impact upon the Great Barrier Reef Marine Park be assessed by the GBRMPA.

Environment Protection (Sea Dumping) Act 1981

The Environment Protection (Sea Dumping) Act 1981 regulates the permitted dumping of wastes at sea. Any dredging or disposal of dredge or waste materials to sea associated with the construction and operation of the port facilities will require a permit under this Act. It is likely that dredging will be required if the Dudgeon Point and Abbot Point Port options are selected.

8.2.2 State approvals

State Development and Public Works Organisation Act 1971

The proposed Project is likely to be considered a "significant project" under the SDPWO Act. The SDPWO Act requires that an EIS be prepared for significant projects, and submitted to the Coordinator - General for approval.

Integrated Planning Act 1997

Approvals for development will be sought under the IP Act 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.

A number of additional State approvals will be required to facilitate the construction and operation of the different components of The Project. These approvals will be fully identified and confirmed as part of the EIS process. The additional approvals that are likely to be

required have been listed separately for the mine, port and rail corridor and are presented in the following sections.

8.2.2.1 The mine

Environmental Protection Act 1994

Development Approvals (given under the IP Act) and registration certificates are required for conducting ERAs under this Act. A range of ERAs will be carried out during the construction and operation of the mine.

Vegetation Management Act 1999

Construction of the mine may involve clearing native vegetation listed under this Act.

Nature Conservation Act 1992

The mine area may overlie habitats containing endangered, vulnerable or rare species listed under this Act. The construction of the mine may also impact upon protected animals, plants or areas. This would require relevant licences and permits under the *Nature Conservation Act.*

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. If the mine has the potential to harm Aboriginal cultural heritage then a CHMP must be prepared with the traditional owners affected by The Project.

Water Act 2000

There is the potential for the mine to require infrastructure in watercourses. Vegetation removal, excavation and/or filling in a watercourse require a Riverine Protection Permit under this Act.

Other Queensland Legislation

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

- *Land Act 1994*;
- *Queensland Heritage Act 1992*;
- *Land Protection (Pest and Stock Route Management) Act 2002*; and
- *State Planning Policy 2/02: Planning and Managing Development Involving Acid Sulphate Soils*.

8.2.2.2 Rail corridor

Environmental Protection Act 1994

Development Approvals (given under the IP Act) and registration certificates are required for conducting ERAs under this Act. A range of ERAs will be carried out during the construction and operation of the rail corridor.

Transport Infrastructure Act 1994

The approval of the Chief Executive (Queensland Transport) will be required for the establishment of the rail component of The Project. An approval is also required from the Chief Executive if the selected rail option will cross or interfere with a State-Controlled road.

Vegetation Management Act 1999

Construction of the rail corridor may involve clearing native vegetation listed under this Act. Clearing of native vegetation will require a clearing permit from the Department of Natural Resources and Water.

Nature Conservation Act 1992

The rail corridor may pass through National Parks and habitats containing endangered, vulnerable or rare species listed under this Act. The construction of the rail corridor may also impact upon protected animals, plants or areas. This would require relevant licences and permits under the *Nature Conservation Act.*

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. If the selected rail corridor route has the potential to harm Aboriginal cultural heritage then a CHMP must be prepared with the traditional owners affected by The Project.

Water Act 2000

There is the potential for the selected Rail option to require infrastructure in watercourses. Vegetation removal, excavation and/or filling in a watercourse require a Riverine Protection Permit under this Act.

Other Queensland Legislation

It is expected that the Rail component of The Project will be subject to the requirements of other Acts, policies and regulations including:

- *Land Act 1994*;
- *Queensland Heritage Act 1992*;
- *Land Protection (Pest and Stock Route Management) Act 2002*; and
- *State Planning Policy 2/02: Planning and Managing Development Involving Acid Sulphate Soils*.

8.2.2.3 Port

Fisheries Act 1994

A permit is required under this act for any port construction activities which result in the removal, destruction or damage to marine plants.

Environmental Protection Act 1994

Development Approvals (given under the IP Act) and registration certificates are required for conducting ERAs under this Act. A range of ERAs will be carried out during the construction and operation of the Port.

Nature Conservation Act 1992

The construction of the port may impact upon protected animals, plants or areas. This would require relevant licences and permits under the *Nature Conservation Act.*

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. If the selected Port site has the potential to harm Aboriginal cultural heritage then a CHMP must be prepared with the traditional owners affected by The Project.

Vegetation Management Act 1999

Construction of the facilities associated with the port may involve clearing native vegetation listed under this Act. Clearing of native vegetation will require a clearing permit from the Department of Natural Resources and Water.

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 within tidal areas and, for the Dudgeon Point option, the disposal of dredge material within tidal areas.

Other Queensland Legislation

It is expected that the port component of The Project will be subject to the requirements of other Acts, policies and regulations including:

- *Great Barrier Reef Marine Park Act 1975;*
- *Land Act 1994*;
- *Marine Parks Act 2004*;
- *Transport Infrastructure Act 1994*;
- *Transport Operations (Marine Pollution) Act 1995*; and
- *State Planning Policy 2/02: Planning and Managing Development Involving Acid Sulphate Soils*.

9.0 COMMUNITY CONSULTATION

Community and stakeholder engagement forms an integral component of the assessment and approvals process for The Project. HPPL is committed to developing and maintaining co-operative relationships with all relevant communities and stakeholders through open communication and collaboration. HPPL has and will continue to actively engage stakeholders with the objective of providing accurate and timely environmental, social and economic information to surrounding communities.

The Project will develop a Community and Stakeholder Engagement Plan that entails interaction with local communities and other stakeholders in a pro-active, open manner that encourages and facilitates active consultation and involvement. Stakeholders have been identified and are currently being engaged to ensure a proactive communication flow.

9.1 COMMUNITY AND STAKEHOLDER ENGAGEMENT PLAN

The Project Community and Stakeholder Engagement Plan has the following objectives:

- Implement a process through which communities and stakeholders can communicate effectively with HPPL regarding construction and operation of The Project;
- Ensure that all community comments or issues raised are dealt with in a timely manner, and where possible, effectively resolved; and
- Incorporate stakeholder input in the design, operation and management of The Project.

The Community and Stakeholder Engagement Plan will inform the local community and other stakeholders about The Project and address any questions or issues raised in a timely manner through the following conceptual steps:

1. Identify key stakeholders and determine their level of interest in The Project;
2. Determine stakeholder level of impact on The Project;
3. Identify potential issues and risks and develop mitigation strategies;
4. Develop key engagement and communication mechanisms and protocols utilising various forums and forms of media; and
5. Develop a schedule of activities and implement selected management strategies and community involvement activities.

The HPPL Key Stakeholders Register has been tailored to The Project and is being maintained to track key stakeholders and engagement activities. Active engagement has, and will continue to be undertaken, with residents living nearby The Project. This process will continue during design, engineering and EIS, construction and operation phases.

9.2 STAKEHOLDERS

HPPL engaged with a number of key stakeholders as part of the assessment and refining of mine, port and rail corridor options, construction and operations. These stakeholders, consulted as part of preliminary Project studies, and who will continue to be consulted as Project design and engineering progress, include:

- Private land holders;
- Native title holders;
- Industry stakeholders;
- State Government Agencies and Departments;
- Commonwealth Government Agencies and Departments;
- Utilities and transport infrastructure; and
- Local Regional Councils.

HPPL is committed to actively engaging and working with other proponents with interests in the development of the Galilee Basin and associated infrastructure. The Company aims to deliver The Project in a manner that is of maximum benefit to local communities, the Galilee Basin and the State of Queensland. HPPL is engaging with the Queensland Government and other development proponents through its active participation in the Galilee Basin Users Group.

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