

# Pisolite Hills Project Initial Advice Statement

Prepared for: Cape Alumina Pty Ltd

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# LIST OF ABBREVIATIONS

CAPL	Cape Alumina Pty Ltd
CHMP	Cultural Heritage Management Plan
DEWHA	Department of the Environment, Water, Heritage and the Arts
DOGIT	Deed of Grant in Trust
EA	Environmental Authority
EIS	Environmental Impact Statement
EP Act	Environmental Protection Act 1994
EPBC	Environment Protection and Biodiversity Conservation Act 1999
EPM	Exploration Permit Minerals
ERA	Environmentally Relevant Activity
GAB	Great Artesian Basin
ha	hectares
km	kilometres
kV	kilovolts
MW	Megawatt
ML	Mining Lease
MLA	Mining Lease Application
Mt	Million tonnes
NC Act	Nature Conservation Act 1992
NCWR	Nature Conservation (Wildlife) Regulation 2006
QEPA	Queensland Environmental Protection Agency
RE	Regional Ecosystem
ROM	Run of Mine
TOR	Terms of Reference





# 1.0 INTRODUCTION

Cape Alumina Pty Ltd (CAPL) currently holds exploration permits for minerals (EPMs) pertaining to Bauxite deposits in the western Cape York region of Queensland. Of these, the Pisolite Hills deposit is the most advanced within the proposed CAPL Project areas and is situated approximately 50 kilometres (km) north-east of Weipa. The proposed Pisolite Hills Project will involve mining and beneficiation of bauxite, and haulage of the product to a port facility on the west coast of Cape York for the loading of ore to barges and transhipment to bulk carriers.

This Initial Advice Statement was prepared as supporting documentation for an Application to Prepare a Voluntary Environmental Impact Statement (EIS) under Sections 70-71 of the *Environmental Protection Act 1994* (EP Act). This application was lodged with the Queensland Environmental Protection Agency in October 2007.

In December 2007, the Queensland Environmental Protection Agency determined that the Pisolite Hills Project will be assessed as a Non Code Compliant Level 1 application for which an Environmental Impact Statement will be required.

#### 1.1 THE PROPONENT

CAPL was formed in 2004, with the key objective of securing untenured bauxite deposits in Queensland to establish a bauxite export business and assessing options for an integrated bauxitealumina business in Australia. The primary focus of the company is the western region of Cape York in the world-class Weipa Bauxite Province.

CAPL is currently owned by a consortium made up of the following companies:

- Metallica Minerals Limited (40%) Brisbane-based and listed on the Australian Stock Exchange
- Chiping Xinfa Huayu Alumina Co Ltd (17.5%) China's largest independent aluminaluminium company
- RCF IIILP and RCF IVLP (17.5%) a private, resource focused equity firm based in Denver, USA
- Bondline Limited (25%) an Eastern European based natural resource investment company

CAPL is based in Brisbane, with contact details as follows:

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# 1.2 PROJECT SUMMARY

The Project is expected to mine approximately 8 - 12 million tonnes (Mt) of run of mine (ROM) ore per year, and export 5-7 Mt per year (dry basis) of bauxite for an expected mine life of approximately 10-15 years. The target commencement date for production is 2011. The Project will involve mining of the laterite profile, and will require construction of a beneficiation plant and tailings dam on the site together with a camp, haul road, barge loading facility and associated infrastructure. Topsoil will be segregated for later use in rehabilitation, and overburden removed to an out-of-pit overburden dump. Bauxite ore will be mined by excavator, front end loader or surface miners and transported by haul truck to the beneficiation plant. Processing will involve crushing, screening and washing. The annual water requirement for the project is estimated at 3,500-6,000 megalitres.

The Project site, consisting of the mining and processing area, is located approximately 34 km by road from a possible barge loading facility at Port Musgrave. A site access and service road is proposed from the Peninsula Development Road due west to the Project, a distance of approximately 40km.

# 1.3 PROJECT LOCATION

The Pisolite Hills Project is located on the western side of the Cape York Peninsula in far north Queensland, approximately 50km north-east of the township of Weipa (Figures 1 & 2).









**Project Location** 







Source: Cape Alumina



# 1.4 TENURE

#### 1.4.1 Existing Tenure

CAPL holds two granted EPMs over the resource area, with an additional EPM under application to cover the barge loading facility.

The proposed haul road passes through two existing Mining Leases (MLs) held by Alcan South Pacific Pty Ltd and Rio Tinto Aluminium Ltd. Access over the land for the construction and operation of the haul road is currently being negotiated with these companies.

The mining tenures relevant to the Project are detailed in Table 1.



Tenure ID	Project area	Holder/Applicant	Status	Expiry
EPM 15984	Port	Cape Alumina Pty Ltd	Application	-
EPM 14547	Mining	Cape Alumina Pty Ltd	Granted	19.04.2011
EPM 15278	Mining	Cape Alumina Pty Ltd	Granted	30.09.2012
MLA 20572	Mining	Cape Alumina Pty Ltd	Application	-
MLA 20573	Mining	Cape Alumina Pty Ltd	Application	-
MLA 20574	Mining	Cape Alumina Pty Ltd	Application	-
ML 7024	Haul road	Rio Tinto Aluminium Ltd	Granted	31.12.2041
ML 7031	Haul road	Alcan South Pacific Pty Ltd	Granted	31.12.2047

#### Table 1: Mining Tenure

There are six parcels of land affected by the Project components, including the barge loading facility, haul road, mining areas and site access road. These are listed in Table 2.

Real Property Description	Project area
Lot 4 WP53	Port
Lot 7024 MP41159	Haul road
Lot 8 MP14466	Haul road
Lot 1 WP53	Mining area
Lot 6 WP53	Mining area
Lot 4 DLH4	Mining area Access and service road

#### Table 2: Cadastral Details

Approximately half of the Project area lies within Deed of Grant in Trust (DOGIT) lands, administered by Aboriginal trustees appointed by the Queensland Government, comprising Mr Sylvester Blanco, Mr Edwin Woodley and the Mapoon Aboriginal Shire Council. The remainder of the land is within the jurisdiction of the Cook Shire Council.

The registered native title claimant for a portion of EPM15984 and the haul road is the Mapoon people. There are no native title claims in place over EPMs 14547 and 15278 or the site access and service road.

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Source: Cape Alumina

Figure 3: Pisolite Hills Existing and Proposed Mining Tenure.





# 2.0 PROJECT DESCRIPTION

The Project is comprised of several components, as follows:

- The mining and infrastructure area (EPMs 15278 and 14547 and MLAs 20572, 20573 and 20574);
- The barge loading stockpile and conveyor area (EPM 15984);
- The access / service road (east from the Project to the Peninsula Development Road); and
- The haul road (joining the mining area and the port area).

A conceptual Project layout is shown in Figure 4.



Source: Cape Alumina







# 2.1 THE MINING AREA

The Pisolite Hills bauxite deposit was discovered by CRA Exploration in 1970 (Whitcher and Horsborough, 1970). EPM14547 was lodged by CAPL on 8 March 2004 and granted by the Queensland Government on 20 April 2006 for a period of 5 years. CAPL completed initial drilling in late September 2006 and released an initial resource statement in January 2007. Bauxite mineralisation extends onto adjoining EPM15278 which was granted on 30 September 2007. Resource drilling on EPM15278 was completed in November 2007 and an updated resource statement is expected in June 2008.

EPM15984 covers a small area of bauxite plateau which has potential to contain over one million tonnes of commercial grade bauxite in the vicinity of the proposed civil works for the truck dumping and stockpile area. This will be evaluated during 2008; however, if viable it is likely that this bauxite could be mined and either back-loaded to the Pisolite Hills beneficiation plant for washing, direct shipped to market, or dry beneficiated on site before blending, stockpiling and shipping to market. Mining, rehabilitation, beneficiation and transport methods outlined below may also apply to this area.

# 2.1.1 Bauxite Resource

Exploration by CAPL on EPM14547 alone has outlined an indicated and inferred resource of 54 Mt, as set out in Table 3. Previous work on the adjoining EPMA15278 and detailed mapping by the proponent demonstrate the existence of substantial bauxite mineralisation extending on to EPM15278 with a significant upgrade to this resource following completion of the updated resource estimate due to be released in June 2008.

Deposit	Category	In Situ Dry Tonne s	Dry Beneficiated Tonnes (Mt)	Total SiO <sub>2</sub> (%)	Total Al <sub>2</sub> O <sub>3</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> (%)	TiO <sub>2</sub> (%)	LOI (%)	Recovery (%)
	Indicated	32	20	12.8	53.2	6.4	2.2	25.2	64
Pisolite Hills - 1	Inferred	17	11	13	53.2	6.1	2.2	25.3	64
-	Total	49	31	12.8	53.2	6.3	2.2	25.2	64
Pisolite Hills - 5	Inferred	2	1	13.4	51.5	6.3	2.5	26	64.8
Pisolite Hills - 6	Inferred	3	2	12.2	49.7	10.2	2.3	25.3	60
All	Total	54	34	12.8	52.9	6.5	2.2	25.3	63.8

 Table 3:
 Initial Resource Estimate

# 2.1.2 Ore Extraction

A bulldozer/s will be used to clear and grub the target resource areas. Topsoil will be stripped and relocated to out of pit stockpiles by elevating scrapers for later use in the rehabilitation of the mined areas. Overburden will be ripped if necessary, and free dug by excavator and loaded into haul trucks for transport to the out-of-pit overburden dump.





Bauxite ore will be mined by excavator or front end loader in up to 2.5 metre flitches or alternatively by surface miners in 0.25-0.5m flitches and transported by haul trucks or pit haulers to the Beneficiation Plant for processing. No drill or blast will be necessary.

# 2.1.3 Mine Rehabilitation

A mine rehabilitation plan and set of procedures that require progressive mine rehabilitation as mine floor areas become available will be established prior to commencement of mining with the primary objective of creating a post-mining landscape stabilised against the erosive forces of wind and rain in order to reduce both on-site and off-site environmental impacts. A second objective will be to return the mined land, where possible, to a condition closely resembling the pre-mining condition. The regeneration plan will follow a number of principals including:

- Make the area safe
- Reach agreement with stakeholders on post-mining land-use
- Progressive rehabilitation of the site
- Minimise the area cleared for mining
- Reshape the land disturbed by mining
- Reinstate natural drainage patterns
- Minimise the potential for erosion
- Rehabilitate the area with plant species consistent with post-mining land-use
- Meet all statutory requirements
- Monitor and manage rehabilitated areas

# 2.1.4 Beneficiation

Freshly mined ore will be delivered to the ROM pad where it will be fed into the primary crusher. The application of surface miners may eliminate the need for primary crushing. The ore will then pass via a chute onto a conveyor, where a scalping screen will remove any material greater than 150 millimetres (mm), which should include the majority of wood type material such as roots. The undersize will be conveyed to the screening plant where the primary roller screen sizes the material at 30mm. This screen does not require the use of water. The slow speeds at which the rollers will turn should minimise the creation of dust.

The oversize from the primary screen will be conveyed to a tertiary crusher where all material will be reduced to below 30mm and the product from this screen will be transferred to the product conveyor via a chute. Undersize will be transferred via a chute to six horizontal screens, where sizing will take place with a cut point of 1.2mm. The use of water will be critical in this stage to ensure that all fines are washed through the screen. The undersize from this screen will proceed to a sump where it will be pumped to the tailings storage facility. The oversize will be released onto the product conveyor, which





will transport all beneficiated material onto an open stockpile area to await transportation to the port facility.

The flow chart for the proposed Pisolite Hills beneficiation process is shown in Figure 5.



Source: GHD (2007b)

Figure 5: Pisolite Hills Beneficiation Flow Chart

#### 2.1.5 Tailings

Consideration has been given to the construction of a dedicated tailings storage structure, to be located adjacent to the beneficiation plant. However, other methods of tailings disposal are being investigated, including the deposition of tailings material into the mining voids (in-pit tailings disposal). This method has advantages with regard to environmental considerations in that it may reduce the overall Project disturbance footprint, reduce the surface area requiring rehabilitation and minimise the risk of an above-ground structure breaching or flooding.





The preferred option for tailings disposal will be determined during feasibility and environmental studies. A conceptual plan of the mining and infrastructure areas is shown in Figure 6.





**Pisolite Hills Mining and Infrastructure Area** 

# 2.2 SERVICE ACCESS ROAD

Road access to the Project will be via a privately constructed and maintained road branching off from the Peninsula Development Road due west to the Project (Figure 7). The service access road will be approximately 40 km in length. It will be designed to avoid dry vine forests and riparian zones and minimise creek crossings.







Source: Cape Alumina

Figure 7: Pisolite Hills Proposed Service Access Road

# 2.3 HAUL ROAD

The mining project is located approximately 34 km south-east of the proposed barge loading facility on the eastern side of Port Musgrave. Washed bauxite will be transported by road trains from the beneficiation plant to the port site. The proposed haul road is 34 km in length, and is designed to avoid all major creek crossings so as to minimise environmental disturbance (Figure 8).









Custom-built 375t capacity triple trailer road trains incorporating a prime mover plus power trailer/dolly configuration will be used to transport product ore along the unsealed haul road.

# 2.4 STOCKPILE AND BARGE LOADING FACILITY

Washed bauxite will need to be stored during times when no vessels are present for loading. A stockpile will be maintained at the end of the haul road where road trains will dump ore over a 10 metre high, 100 metre long retaining wall. A bulldozer, possibly assisted by a front-end loader, will be used to maintain the stockpile and feed ore via one or more chain feeders onto a conveyor.





Ore will be transported from the ore stockpile to the port via a conveyor system, running along a ~2km long planned causeway linking the port to the mainland. This conveyor will allow barges to be loaded quickly and efficiently by having an operational capacity of 4000-5000 tonnes per hour, and will minimise the land that needs to be reclaimed at the port by removing the stockpile and road train turning circle. A road will be constructed along the causeway in parallel to the conveyor for vehicle access and maintenance of the conveyor (Figure 9). The conveyor will pour ore directly into the barges which will move forward during loading either under their own power or utilising a winch rope system. The conveyor will be equipped with a telescopic chute.

Bauxite will be transported by barge for loading onto off-shore moored Panamax or Cape size vessels for export. It is possible that minor dredging may be required in Port Musgrave to allow safe passage of vessels and alternative strategies to dredging are under investigation.



Grid scale = 1 km x 1 km

Source: Cape Alumina









Source: Cape Alumina



# 2.5 WATER REQUIREMENTS

The mining project is expected to require approximately 4000-8000 megalitres of water per annum after allowing for recycling, with several water supply options currently being considered. The preferred option is to harvest water directly from the Wenlock River from a draw point located near its confluence with Ling Creek. Water would be pumped at the rate of approximately 230 litres per second over a distance of ~14km to a holding pond constructed in a gully adjacent to the beneficiation plant (Figure 11).







Figure 11: Pisolite Hills Preferred Water Supply Strategy

A water supply study is currently in progress to determine the suitability of this option as well as to investigate alternative water supply strategies including the following:

- Construction of a purpose-built dam on Ling Creek as a supplementary supply to the Wenlock River. This option will require a 7 kilometre length of piping to convey water to storage tanks near the beneficiation plant.
- Establishment of deep bores located near the beneficiation plant to extract water from the Great Artesian Basin (GAB). It is anticipated that up to 3 bores may be required, however this option is not presently being pursued on the basis of advice from the Department of Natural Resources and Water that no water is available from the GAB.





 Flood harvesting from the Wenlock River into a turkeys nest dam immediately adjacent to the river bank for storage before further pumping to a process water pond adjacent to the beneficiation plant.

Due to the tidal nature of the Wenlock River, it may also be necessary to create a small bore for potable water for the camp facilities only in times of inadequate supply.

#### 2.6 POWER & FUEL SUPPLY

Electricity will be generated by diesel powered generators. Nine generator sets, each of 0.5 Megawatt (MW) capacity will be required to meet the maximum demand of 4.5 MW for the mine and beneficiation plant at a mining rate of 7 Mt per annum. This power station, together with the power stations at the port and the permanent camp, will be built, owned and operated by a power supply contractor. Power will be generated at 415 Volts and distributed from a central mine substation.

Power for the campsite will require a further four generator sets of 0.25MW capacity to meet maximum demand of 0.8MW. Power will be distributed through the camp at 415 Volts by overhead power lines from the camp power generation substation.

Power will be distributed to the beneficiation plant at 11 kilovolts by a buried cable to terminate in the beneficiation plant substation switchboard. The motor control centre in this substation distributes power to beneficiation plant drives, pumps and other equipment, and also to the workshops and administration offices. Similarly, power will be distributed to the ROM station substation where power will be distributed to the feeder breaker and crushed ore conveyor.

A power transmission line may be required for the water supply pumps in the Wenlock River.

Fuel will be delivered to site by barge tanker via the barge port at the mouth of the Ducie River. Fuel for the mine, camp and haulage fleet will be pumped to a 100,000 litre buffer tank in the stockpile compound and from there pumped along the haul road to a 900,000 litre tank at the plant site. Marine fuel will be stored separately at the stockpile compound.

#### 2.7 AIRSTRIP

An airstrip suitable for light aircraft would be included for the transport of personnel only. The airstrip will consist of a small dirt runway approximately 1200 metres long, 20 metres wide with a 25 metre by 25 metre turning node at each end of the runway and an open, roofed area suitable for limited equipment storage and waiting area.

The airstrip will be constructed to meet the Royal Flying Doctor Service of Australia minimum standards.





# 2.8 STAFFING AND ACCOMMODATION

The total number of staff to be accommodated on site at any one time is estimated at 130-180 personnel. A purpose-built camp will be constructed consisting of buildings of prefabricated construction, to be transported to site in modular sections for permanent installation. Accommodation units will be arranged in clusters of four 8-person units with individual self contained facilities of a high standard for each person. All units are to be connected to messing and recreation areas by uncovered sealed pathways, with the surrounding areas landscaped using a low maintenance layout.

# 2.9 OTHER INFRASTRUCTURE AND SERVICES

A sewage treatment plant will be constructed adjacent to the beneficiation plant to provide tertiary treatment to sewage from the mine and plant offices, workshops and amenities. The treated effluent will be pumped to the process water pond. This packaged treatment plant will be installed during the construction phase to provide for construction camp requirements.

Fuel will be stored in bunded storage tanks supplied by the fuel distributor, for power generation and plant equipment.

The communications system across the project site will consist of a 25 watt VHF radio system and telecommunications via a microwave link into the Telstra network at Weipa. The VHF radio system will cover the mine, beneficiation plant and port, and will include both hand held and vehicle-mounted radios. The telecommunications system will include telephone and facsimile facilities at each site and also microwave links for the distributed control system linking SCADA systems at plant and port.

Facilities will be built for receiving small barges to supply goods to the mine and camp by sea with vessels being unloaded directly onto a hover-barge to be further transported across the flood plain to the stockpile area for transfer to trucks. The use of hovercraft in this manner is envisaged to substantially reduce the impact and capital cost of marine infrastructure.

A jetty for light marine craft may be constructed in association with the Mapoon Council and Traditional Owners at Mapoon to provide a launching point for small vessels to transport marine survey and other personnel from shore to vessels moored off-shore as well as to service the marine fleet.





# 3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

# 3.1 GEOLOGY AND SOIL

There are three main mineralogical forms of bauxite and while all three are treated using the Bayer Process for alumina production they each require tailored refineries. The easiest and cheapest form of bauxite to treat is gibbsite or trihydrate alumina, which is a true aluminium hydroxide  $Al(OH)_3$ . The other types, bohemite and diaspore, both exist in the monohydrate form and are aluminium-oxide hydroxides AlO(OH). Whereas gibbsite can be treated in the Bayer Process at low temperatures <150°C, bohemite and diapsore require much higher temperatures for digestion which leads to higher energy costs.

At Weipa in Cape York, the bauxite typically occurs as a bohemitic horizon overlying a mixed gibbsite/bohemite horizon. The mined bauxite typically contains approximately 20% bohemite which is treated at high temperatures of ~250°C. In contrast, CAPL's Pisolite Hills deposit appears to have a much higher ratio of trihydrate gibbsite to bohemite with current and previous work indicating as much as 93-95% of the available alumina is present as gibbsite. This suggests that the Pisolite Hills bauxite may be suited to a low temperature refinery resulting in lower energy cost of alumina production.

Limited or no recognisable outcrop exists in the Project area save for iron stone blocks and scree around prominent slope breaks adjacent to small creeks. The published 1:250,000 scale geological map shows three main rock units underlying the Project area (Figure 12). The lower-most exposed unit is depicted as belonging to the Lower Cretaceous *Rolling Downs Group* and is said to comprise labile glauconitic sandstone and siltstone, shale and siltstone, calcareous in part. This unit underlies the more deeply eroded country around major drainage areas.

The *Bulimba Formation* is shown overlying the *Rolling Downs Group* and is exposed around the margins of the plateau in EPM14547. The *Bulimba Formation* is said to comprise poorly sorted clayey quartzose sandstone and granule conglomerate, pebbly in places and interbedded sandy claystone.

The greatest portion of EPM14547 is underlain by Quaternary and Tertiary aluminous laterite including bauxite and the ironstone below it. This unit occurs as a well formed plateau through much of the permit area and it is this unit which is the target of exploration drilling by CAPL. By cracking open representative pisolites from Pisolite Hills it appears that the bauxite conforms with that type typically underlain by *Bulimba Formation*.







Figure 12: Portion of the Published 1:250,000 Scale Geological Map Showing the Geology in the Vicinity of EPM14547





Due to the nature of the geology, it is highly unlikely that acid mine drainage will be a potential issue for the Project. However, investigations will be undertaken to confirm that no Potentially Acid Forming (PAF) material is present.

As the proposed barge loading facility is located at near to sea level, there is potential for acid sulphate soils to occur at this site. These soils are of marine origin and contain iron sulphides that on exposure to air may react to produce acid. Environmental studies will be undertaken to investigate the presence and extent of acid sulphate soils, and a management plan developed to mitigate any potential environmental impacts.

#### 3.2 REGIONAL CLIMATE

The Project site experiences distinct wet and dry seasons typical of the tropical monsoonal area. Data from the closest Bureau of Meteorology weather station located approximately 40km south-west of the Project at Weipa airport, indicates a dry season occurring between June and September with the wet season peaking between January and March. Mean annual rainfall recorded at this station is 2004mm, based on data collected from 1992 to the present day. Rainfall patterns for the area are illustrated in Figure 13.

The annual mean maximum temperature in the region is 32.7°C with an annual mean minimum temperature of 21.8°C. Figure 14 illustrates that the coolest temperatures occur in July and August with average minimum temperatures of 18.7°C and 18.4°C respectively. The highest temperatures were recorded between October and November with average maximum temperatures of 35.5°C and 35.6°C respectively.







Figure 13: Mean Monthly Rainfall at Weipa Aero Weather Station (1992-present)



# Figure 14: Mean Maximum and Minimum Temperatures at Weipa Aero Weather Station (1992-present)





# 3.3 LANDSCAPE

The proposed mining operation is located on a dissected bauxite plateau approximately 50-60 metres above sea level. The landscape is generally very flat, with uniform vegetation of medium height eucalyptus forest or woodland (Photo Plates 1 & 2).



Source: Cape Alumina



Photo Plate 1: Mining Area Landscape GDA94 Zone 54 ~8641950N/631770E

Source: Cape Alumina







The proposed barge loading facility is located on the eastern shore of Port Musgrave, a large enclosed estuarine system (Figures 4 and 9). There is currently no significant infrastructure, and most of the port is relatively shallow with turbid waters. A main river channel of ~4-6m depth runs into Port Musgrave The barge loading facility site was chosen for its proximity to deep water and its thin riparian mangrove zone (Photo Plate 3).



Source: Cape Alumina

#### Photo Plate 3: Location of Proposed Causeway and Barge Loading Facility

#### 3.4 WATERWAYS

The main waterways of the region are the Wenlock River and the Ducie River. Their locations in relation to the Project site are shown in Figure 4.

Both the Wenlock and the Ducie Rivers are acknowledged as having a high conservation value due to their diverse riparian vegetation and habitat values for fauna species. Whilst Project operations should not directly affect these waterways, it is recognised that indirect impacts may occur. Project planning will focus on protection of the environmental values of these waterways as a priority.

An aerial photograph showing a section of the Wenlock River is shown in Photo Plate 4.







Source: Cape Alumina



# 3.5 NATURE CONSERVATION

To gain an understanding of the potential occurrence of important flora and fauna species within and adjacent to the Project mining tenure, haul road, service/access road and barge loading facility, searches were undertaken of the Queensland Wildlife Online Database (EPA 2007) and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC) Protected Matters database (EPBC 2007). A buffer of approximately 15 km was used around these points, to compensate for the sparsity of records from the project region.

- Wildlife Online Extract This database is administered by the Queensland Environmental Protection Agency (QEPA) and is derived from sources such as specimen collections, research and monitoring programs, literature records and wildlife permit returns.
- EPBC Protected Matters Search Tool This database is administered by the Commonwealth Department of Environment and Water. It generates a record of EPBC listed species that are predicted to occur in a given search area.

#### 3.5.1 Flora

Much of the vegetation within the proposed mining area and haul road is Darwin Stringybark forest which is the most extensive forest type across northern Australia. This vegetation type is known as





regional ecosystem (RE) 3.5.2 – Eucalyptus tetrodonta, Corymbia nesophila tall woodland on deeply weathered plateaus and remnants (Forest & Sea 2007).

The vegetation of the mine and haul road is mapped as remnant *"not-of-concern"* vegetation for the purposes of the QEPA Biodiversity Status (Figure 15) and the *Vegetation Management Act 1999*.

The proposed port area contains marine vegetation including mangroves, salt pans and salt marsh/marine plain grassland (Figure 16). REs include 3.1.1 – *Dense stilt mangroves on riverbanks*, 3.1.3 – *Dense low forest of yellow and grey mangroves* and 3.1.6 – *Saline plains and flats with a sparse cover of herbs*.

Bauxite deposits are generally a harsh environment and typically support few plant species even where the forest is tall and trees well developed. Nearly all significant flora recorded from the wider area has been recorded from the riparian rainforests that follow larger streams and rivers or from patches of rainforest and dry vine forest which occur sporadically across the landscape (Forest & Sea 2007). Importantly there are no occurrences of dry vine forest along the transport corridor between the mine and port and none within several kilometres of the mining area.

Table 4 presents a summary of flora species listed under either the EPBC Act or the *Nature Conservation (Wildlife) Regulation 2006* (NCWR) that may occur in the Project region.

Ongoing flora and fauna field investigations are planned during 2008-2009.







Figure 15: Regional Ecosystems of Proposed Mining Area







Background data source: Coastal Habitat Resources Information System, Department of Primary Industries







Botanical Name	Common Name	Listing	Comments
Arenga australasica	Australian Arenga Palm	EPBC - V	Known to occur in lowland rainforest along coastal North Queensland. Unlikely to occur on Site however further investigation required.
Calophyllum bicolor		EPBC – V	Recorded near Site in well-developed rainforest. Unlikely to be affected by this Project should impacts on rainforest be avoided.
Dendrobium bigibbum	Cooktown Orchid	EPBC – V	An epiphytic orchid that may occur on Site, however further investigation is required.
Dendrobium johannis		EPBC – V	An epiphytic orchid that may occur on Site, however further investigation is required.
Solanum dunalianum		EPBC – V	Found throughout Cape York in semi- deciduous vine thicket. Unlikely to be affected by this Project should impacts to on semi-deciduous vine thicket be avoided.
Spathoglottis plicata		EPBC – V	A terrestrial orchid that may occur on Site.
Combretum trifoliatum		NCWR - R	May occur on Site however further investigation is required.
Acacia fleckeri		NCWR - R	Restricted to the Cape York Peninsula, grows along sandy creek or river banks. May occur on the banks of the Ducie and Wenlock Rivers however unlikely to be impacted by this Project.
Citrus garrawayi		NCWR - R	Known to occur in deciduous vine thickets as an under-storey shrub. Distinctive finger-lime fruit. May occur on Site however further investigation is required.
Heterachne baileyi		NCWR - R	May occur on Site however further investigation is required.

#### Table 4: Flora Species of Conservation Significance that May Occur in the Project Area

<u>KEY:</u> EPBC – V NCWR – R

Listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act* 1999 Listed as Rare under the *Nature Conservation (Wildlife) Regulation 2006* 





# 3.5.2 Fauna

Fauna records for the Project site are scarce, however studies in the broader region include those conducted for mining projects such as Skardon River Kaolin, Alcan Ely Lease and Kendall River Kaolin. Despite the studies taking place over a wide geographical area, they return very similar results suggesting that fauna distributions are generally wider than vegetation types as most species use many related vegetation types (Forest & Sea 2007).

Table 5 presents a summary of fauna species listed under either the EPBC Act or NCWR that may occur in the Project region.



Scientific Name	Common Name	Listing	Comments
Erythrotriorchis radiatus	Red Goshawk	EPBC – V, NCWR – E	Rare and declining. Large scale deforestation is its greatest threat. Occupies large range in coastal and sub-coastal tall open forest/woodland. Unlikely to be affected by this Project as amount of proposed clearing will be minimal in relation to habitat retained.
Rostratula australis	Australian Painted Snipe	EPBC – V, NCWR – V	Almost always occurring in shallow freshwater habitats. Major threats are drainage of freshwater swamps and loss of water flows in major river systems and wetlands. Further investigations are required to assess potential impacts.
Probosciger aterrimus	Palm Cockatoo	NCWR – R	Inhabits edges of tropical lowland rainforest, eucalypt and swamp woodlands. Impacts on species are expected to be minimal however further investigations are required.
Coracina tenuirostris melvillensis	Melville Cicadabird	EPBC – Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Haliaeetus leucogaster	White-bellied Sea-Eagle	EPBC – Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Hirundapus caudacutus	White-throated Needletail	EPBC – Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Hirundo rustica	Barn Swallow	EPBC – Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Merops ornatus	Rainbow Bee-eater	EPBC – Migratory	Species may occur intermittently within the Project area. Further investigation is required.

#### Table 5: Fauna Species of Conservation Significance that May Occur in the Project Area



Cape Alumina Prot

Scientific Name	Common Name	Listing	Comments
Monarcha melanopsis	Black-faced Monarch	EPBC – Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Monarcha trivirgatus	Spectacled Monarch	EPBC - Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Myiagra cyanoleuca	Satin Flycatcher	EPBC – Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Ardea alba	Great Egret, White Egret	EPBC - Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Ardea ibis	Cattle Egret	EPBC - Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Gallinago hardwickii	Latham's Snipe, Japanese Snipe	EPBC – Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Numenius minutus	Little Curlew, Little Whimbrel	EPBC - Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Rostratula benghalensis s. lat.	Painted Snipe	EPBC – Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Apus pacificus	Fork-tailed Swift	EPBC - Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Sterna albifrons	Little Tern	EPBC - Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Puffinus leucomelas	Streaked Shearwater	EPBC – Migratory	Species may occur intermittently within the Project area. Further investigation is required.
Balaenoptera musculus	Blue Whale	EPBC – E, EPBC – Migratory	Deep ocean species with seasonal migration to feeding areas. Unlikely to be affected by this Project.





Scientific Name	Common Name	Listing	Comments
Dasyurus hallucatus	Northern Quoll	EPBC – E	Inhabits broken rocky country and open eucalypt forest. May be present on Site, however further investigations are required.
Spilocuscus maculatus	Common Spotted Cuscus	NCWR - R	Inhabits lowland rainforest and known to inhabit areas adjacent to eucalypt and paperbark open-forest and mangroves. Impacts on species are expected to be minimal however further investigations are required.
Megaptera novaeangliae	Humpback Whale	EPBC – V, EPBC – Migratory, NCWR - V	A winter migrant north to the favoured warm watered tropical breeding grounds. May occur in deeper water adjacent to the Project area, however unlikely to be affected by this Project.
Notomys aquilo	Northern Hopping Mouse	EPBC – V, NCMW - V	A rare species with minimal observations from the Cape York region. Main population found in Arnhem Land. Preferred habitat is vine thickets, especially where found on coastal dunes. Unlikely to be present in the Project area.
Balaenoptera edeni	Bryde's Whale	EPBC – Migratory	Species may inhabit deeper water adjacent to the Project area, however unlikely to be affected by this Project.
Dugong dugon	Dugong	EPBC – Migratory	Species may inhabit shallow seagrass meadows and estuary systems in Port Musgrave and adjacent coastal waters.
Orcaella brevirostris	Irrawaddy Dolphin	EPBC – Migratory, NCWR - R	Species are known to occur within the Project area. Prefers mostly <20m deep coastal and estuarine waters.
Orcinus orca	Killer Whale, Orca	EPBC – Migratory	Species may inhabit deeper water adjacent to the Project area, however unlikely to be affected by this Project.





Scientific Name	Common Name	Listing	Comments
Sousa chinensis	Indo-Pacific Humpback Dolphin	EPBC – Migratory, NCWR - R	Species are known to occur within the Project area. Prefers mostly <20m deep estuaries, tidal rivers and channels through mangrove systems.
Caretta caretta	Loggerhead Turtle	EPBC – E, EPBC – Migratory, E – NCWR	Has been previously recorded in the Gulf of Carpentaria and may occur in waters adjacent to the Project area. However, mostly found in reef areas, seagrass and deeper soft-bottomed sites along the continental shelf.
Chelonia mydas	Green Turtle	EPBC – V, EPBC – Migratory, V – NCWR	May occur in waters adjacent to the Project area, however habitat and nesting sites are predominantly on the eastern seaboard.
Dermochelys coriacea	Leathery Turtle, Leatherback Turtle	EPBC – V, EPBC – Migratory, E – NCWR	Prefers temperate feeding grounds and has not been recorded nesting in the western Cape region. Unlikely to be encountered in the Project area.
Eretmochelys imbricate	Hawksbill Turtle	EPBC – V, EPBC – Migratory, V – NCWR	May occur in waters adjacent to the Project area. Prefers tidal and sub-tidal reef feeding locations. Known to nest on islands off Arnhem Land and north- eastern Cape York.
Lepidochelys olivacea	Pacific Ridley, Olive Ridley	EPBC – E, EPBC – Migratory, E – NCWR, E - NCWR	Recorded as nesting on western Cape York beaches. Further investigations are required.
Natator depressus	Flatback Turtle	EPBC – V, EPBC – Migratory, V - NCWR	Major nesting site at Crab Island, north west Cape York, and islands in the Gulf of Carpentaria. Low-density nesting occurs on the mainland. Further investigations are required.
Pristis microdon	Freshwater Sawfish	EPBC – V	Likely to be found in Port Musgrave and the Ducie and Wenlock Rivers. Further investigation is required to assess possible impacts.





Scientific Name	Common Name	Listing	Comments
Rhincodon typus	Whale Shark	EPBC – V, EPBC – Migratory	May occur in waters adjacent to the Project area. Widespread and migratory, this species is unlikely to be impacted by this Project.
<i>Glyphis</i> spp.	Spear-tooth Shark	EPBC - CE	Likely to be found in Port Musgrave and the Ducie and Wenlock Rivers. Further investigation is required to assess possible impacts.
Crocodylus porosus	Estuarine Crocodile, Saltwater Crocodile	EPBC – Migratory, V - NCWR	Most commonly seen in tidal reaches of rivers, they also occur along beaches and offshore islands of northern Austalia, and in freshwater lagoons, rivers, and swamps up to hundreds of kilometres inland from the coast. Likely to be present in the Project area.

- <u>KEY:</u> EPBC CE Listed as Critically Endangered under the Environment Protection and Biodiversity Conservation Act 1999
- EPBC E Listed as Endangered under the Environment Protection and Biodiversity Conservation Act 1999
- EPBC VListed as Vulnerable under the Environment Protection and Biodiversity Conservation Act 1999EPBC MigratoryListed as Migratory under the Environment Protection and Biodiversity Conservation Act 1999
- Listed as Endangered under the *Nature Conservation and (Wildlife) Regulation 2006* Listed as Vulnerable under the *Nature Conservation and (Wildlife) Regulation 2006* NCWR – E
- NCWR V
- Listed as Rare under the Nature Conservation and (Wildlife) Regulation 2006 NCWR – R





# 3.6 INDIGENOUS CULTURAL HERITAGE

Portions of both the port and mining areas of the Project are contained within DOGIT lands, managed by Aboriginal trustees appointed by the Queensland Government and assisted by the Mapoon Aboriginal Shire Council.

The registered native title claimant for EPMA15984 is the Mapoon people, as detailed in Table 6. There are no native title claims in place over EPM14547 and EPM15278, the haul road or access road.

Native Title Group	Claim Number	Federal Court Claim Number
Mapoon	QC02/009	QUD6010/02

Table 6:	Native Title	Claimants
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Extensive consultation has been undertaken with the indigenous community, and will continue during further exploration and Project planning. Future activities will involve cultural heritage surveys and subsequent development of a Cultural Heritage Management Plan. Representatives of the traditional owners have been and continue to be involved with the operational aspects of the project including cultural heritage surveys and exploration programmes.





# 4.0 SENSITIVE ENVIRONMENTAL ISSUES

#### 4.1 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).

Due to the large number of threatened species, ecological communities and migratory species known from the region, CAPL referred the Project to DEWHA. On 26<sup>th</sup> March 2008, DEWHA declared the Pisolite Hills Project to be a "controlled action", which requires that the Project be assessed and approved under the EPBC Act. The relevant controlling provisions were:

- Listed threatened species and communities;
- Listed migratory species; and
- Commonwealth marine areas.

#### 4.2 WILD RIVERS ACT 2005

The *Wild Rivers Act 2005* was passed by the Queensland Parliament in October 2005. The purpose of the Act is to preserve the natural values of wild rivers, which are rivers that have all, or almost all of their natural values intact. The Act regulates future development activity within a declared wild river and its catchment area.

The process to declare a Wild River includes an element of community consultation and public comment. The Minister for Natural Resources and Water may propose a river system by publishing a Notice of Intent, inviting the public to provide submissions on the proposal.





There are currently no declared Wild Rivers that will be affected by the Project. However, the Wenlock River and the Ducie River have both been discussed as potential Wild Rivers. A Water Resources Moratorium was announced in January 2007 for some river basins in the Cape York region, including the Wenlock and Ducie Rivers. During the Moratorium most applications for water allocations and water works will not be accepted, however there is an exemption for mining activities. CAPL will conduct a study into the water supply strategy for the project which will include extensive governmental consultation.

# 4.3 ENVIRONMENTALLY SENSITIVE AREAS

Port Musgrave is listed in the Directory of Important Wetlands, and is known as the Port Musgrave Wetland Aggregation. This area is known to contain mangroves, salt pans and other marine vegetation, which are listed as a Category B Environmentally Sensitive Areas in the *Environmental Protection Regulation 1998*.

The area of land described as Lot 4 on DLH4 is known as Bertiehaugh Pastoral Lease, and has been proposed as a future conservation area potentially in the form of a Nature Refuge. This property is the underlying landholding for most of EPM 14547, and a small proportion of EPM 15278. Once declared, a Nature Refuge is considered a Category C Environmentally Sensitive Area.

Consultation between CAPL and the landholder is ongoing regarding the potential conservation status of the land, and the boundaries of the proposed conservation area. At the present time, this landholding is not considered an Environmentally Sensitive Area for the purposes of this document.





# 5.0 ENVIRONMENTALLY RELEVANT ACTIVITIES

Table 7 describes the Environmentally Relevant Activities (ERAs) proposed to be conducted on the Project, which would otherwise be ERAs as per Schedule 1 of the *Environmental Protection Regulation 1998* if the Project was not a mining project.

The process of mining mineral ore (Mining Activities) is not covered by an ERA in Schedule 1 of the Regulation; it is covered separately by Schedule 6, Part 2 of the *Environmental Protection Regulation*, *1998*.

ltem (ERA Schedule No.)	Level of Activity	Level	License Fee (\$)
ERA 11(a) Crude Oil or Petroleum Product Storing	<500,000L	2	-
ERA 15(b) Sewage treatment	Sewage treatment for between 100 and 1500 equivalent persons	1	1,500
ERA 17 Fuel Burning	Using fuel burning equipment capable of burning more than 500kg or more of fuel an hour	1	3,000
ERA 75 (a)(i) Waste Disposal	Disposing of only general waste or limited regulated waste, if the facility is designed to receive waste at the rate of <2000t per year	1	500
ERA 75 (b)(i) Waste Disposal	Disposing of regulated waste, if the facility is designed to receive waste at the rate of <50,000t per year	1	3,000

 Table 7:
 ERAs Associated with the Project





# 6.0 COMMUNITY CONSULTATION

#### 6.1 AFFECTED PERSONS

A definition of an affected person is provided in QEPA Guideline 12 – The EIS Process for Nonstandard Mining Projects and is shown below:

A person is an "affected person" for a project (EP Act, s38) if the person is:

(1) any of the following under the Native Title Act 1993 (Commonwealth) for the operational land or for an area that includes any of the land:

- a) a registered native title body corporate;
- b) a registered native title claimant;
- c) a representative Aboriginal/Torres Strait Islander body; or

(2) a relevant local government for the operational land; or

(3) a person mentioned below for the operational land or any land joining it:

- a) a registered proprietor for freehold land;
- b) a person recorded in the register as the registered holder of the interest for land that is held from the State for an estate or interest less than fee simple and for which the interest is recorded in a register mentioned in the Land Act 1994 (Land Act), section 276;
- c) a holder of, or an applicant for, the tenement for land subject to a mining claim, mineral development licence or mining lease;
- a holder of the authority; or a lessee under the lease; or a licensee under the licence for land subject to an authority to prospect or a lease or licence under the Petroleum Act 1923;
- e) a trustee of the land for land under the Land Act or the Nature Conservation Act 1992 (NCA) for which there are trustees;
- f) a grantee of the land for Aboriginal land under the Aboriginal Land Act 1991 (ALA) that is taken to be a reserve because of section 87(2) or 87(4)(b) of that Act;
- g) a trustee for the land for DOGIT land under the ALA or the Torres Strait Islander Land Act 1991;

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- h) a relevant local government for land held under a lease under the Local Government (Aboriginal Lands) Act 1978, section 6;
- *i)* a grantee of the land for Torres Strait Islander land under the Torres Strait Islander Land Act 1991 that is taken to be a reserve because of section 84(2) or 84(4)(b) of that Act;
- *j)* a trustee of the land for land under a lease from the State under the Aborigines and Torres Strait Islanders (Land Holding) Act 1985 that has been excised from land granted in trust for Aboriginal or Torres Strait Islander purposes under the Land Act;
- *k*) the State for land that is any of the following:
  - unallocated State land;
  - a reserve under the Land Act for which there is no trustee;
  - a national park, national park (Aboriginal land), national park (scientific), national park (Torres Strait Islander land), national park (recovery) or forest reserve under the NCA;
  - a conservation park under the NCA for which there are no trustees;
  - a State forest or timber reserve under the Forestry Act 1959;
  - a State-controlled road under the Transport Infrastructure Act 1994;
  - a fish habitat area under the Fisheries Act 1994.
  - another person prescribed under a regulation to the EP Act.

Affected Persons for the Project are shown in Table 8.



Table 8:	Affected	Persons
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Name of Affected Person or Company	Relationship to Project	Contact Details
Sylvester Blanco Mapoon Shire Council Edwin Ralph Woodley	Holder of Lot 1 WP53 Holder of Lot 4 WP53 Holder of Lot 6 WP53 Trustee of DOGIT land	c/- Mapoon Aboriginal Shire Council PO Box 213 Weipa QLD 4874 (07) 4090 9124
The Commonwealth Aluminium Corporation Pty Ltd	Holder of Lot 7024 MP41159	C/- Comalco Aluminium (Weipa) Limited Accounts Payable Locked Bag 3333 Tuggeranong DC ACT 2901
Alcan South Pacific Pty Ltd	Holder of Lot 8 MP14466	443 Queen St Brisbane Qld 4001
Silverback Properties Pty Ltd	Holder of Lot 4 DLH4	1638 Steve Irwin Way Beerwah Qld 4519
Rio Tinto Aluminium Ltd	Holder of ML 7024	General Manager – Operations C/- Post Office Weipa Qld 4874
Alcan South Pacific Pty Ltd	Holder of ML 7031	GPO Box 1016 Brisbane Qld 4001
Mapoon QC02/009	Native Title Claimants	Cape York Land Council 34 Florence St. (PO Box 2496) Cairns QLD 4870
Cook Shire Council	Relevant Local Government Authority	PO Box 3 121 Charlotte St. Cooktown QLD 4895 (07) 4069 5444
Cape York Land Council	Representative Aboriginal Body	34 Florence St. (PO Box 2496) Cairns QLD 4870





# 6.2 INTERESTED PERSONS

The following definition of interested persons has been taken from the QEPA *Guideline 12 – The EIS Process for Non-standard Mining Projects.* 

"Interested persons are defined as persons nominated by the proponent that have an interest in the Project. Interested persons may include a local community progress association, a local/state/national environmental action group, and affected land users other than land holders, any person who might have a substantial interest in the project or its impact."

Interested persons for the Project may include, but not be limited to, the following groups as stated in Table 9 below.

Name of Interested Person or Organisation	Relationship to Project	Contact Details
The Wilderness Society	Environmental conservation group with a particular interest in Wild Rivers	1 <sup>st</sup> Floor, 136 Boundary Rd West End Qld 4101 (07) 3846 1420
John & Sally-Anne Witherspoon	Affected land user	Pallamana Station Charters Towers Qld 4820
Weipa Town Authority	An elected committee with an interest in the Weipa community	PO Box 420 Weipa QLD 4874 (07) 4030 9400
Weipa Chamber of Commerce	An organisation with an interest in business development in the region	PO Box 522 Weipa QLD 4874 (07) 4069 7877

#### Table 9: Interested Persons





# 6.3 CONSULTATION PROCESS

Affected and interested persons will be included in the community consultation program for the Project and will be provided with a copy of the Terms of Reference (TOR) Notice and EIS Notice. The community consultation program will include meetings with affected and interested persons as required. All correspondence with interested and affected persons will be recorded in the Consultation Report as a part of the EIS.

The draft TOR will be released for public comment, and to interested and affected persons, and advisory bodies for at least 30 business days. Anyone can make comments on the draft TOR to the QEPA. At the end of the comment period, copies of all comments received by the QEPA will be given to the proponent. CAPL will then prepare the following:

- A written summary of the comments;
- A response to the comments; and
- Proposed amendments to the TOR as a result of the comments received.

The above information must be provided by CAPL to the QEPA within 20 business days of receiving copies of the documents. However, a longer period of time can be agreed between CAPL and the QEPA. The QEPA will then prepare and publish the final TOR based on the responses from CAPL within 20 business days.

CAPL will then undertake the necessary assessments, research and consultations to prepare the EIS, in accordance with the TOR. The EIS will support an application for Project approvals, in particular an Environmental Authority (EA).

CAPL will submit the completed EIS to the QEPA. The QEPA will then assess the EIS and decide whether or not it adequately addresses the published TOR. If it does, CAPL must then publish an EIS Notice and give a copy of the EIS Notice to each affected and interested person. The submission period for public comment will be set by the QEPA and must be at least 20 business days. Copies of the EIS will be made available to all interested and affected persons and Advisory Bodies. The QEPA will accept all properly-made submissions received during the submission period. The QEPA will provide CAPL with a copy of all the submissions received on the EIS. CAPL must then prepare a response to the submissions and make any necessary amendments to the submitted EIS.

The QEPA will prepare and give an EIS Assessment Report to CAPL. This Assessment Report will consider the final TOR, the submitted EIS, all properly made submissions, CAPL responses to submissions and the standard criteria in preparing the EIS Assessment Report. The Assessment Report will, among other things, recommend any relevant conditions that will be necessary for the Project to proceed.





# 7.0 **REFERENCES**

Forest & Sea Consulting (2007) *Preliminary Environmental Report, Bauxite Mine and Marine Operations*. May 2007.

GHD (2007) Scoping Study Report for Wenlock Bauxite Deposit. March 2007.

GHD (2007b) Report for Wenlock Bauxite Project Beneficiation and Tailings Study. August 2007

QEPA (2003) *Guideline 12 – The EIS Process for Non-standard Mining Projects*. Environmental Protection Agency Queensland.

Whitcher I.G. and Horsburgh J.R. (1970) *Bauxite Reconnaissance Cape York Peninsular Queensland*. CRA Exploration Pty Ltd **CR3670** 



