

# Assessment Report

for the Public Environmental Report

**Centrex Metals Ltd**

**Port Spencer (Sheep Hill) Deep Water  
Port Facility - Stage 1, Eyre Peninsula**

December 2012



**Government of  
South Australia**



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**Port Spencer (Sheep Hill) Deep Water**  
**Port Facility - Stage 1, Eyre Peninsula**

December 2012

**Department of Planning, Transport and Infrastructure**

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# **1 INTRODUCTION**

## **1.1 SUMMARY**

This Assessment Report (AR) assesses the environmental, social and economic impacts of the proposal by Centrex Metals Ltd (Centrex or the ‘proponent’) to develop Stage 1 of a new deep water, privately owned multi-user port - Port Spencer (the ‘proposal’ or the ‘Port’). The entire Port proposal would be developed in four stages, with Stage 1 constructed for export of hematite ore and grain. Stage 2 is proposed to comprise facilities for the export of magnetite ore, including additional storage areas, small desalination plant and dewatering plant at the Port and the processing of magnetite at a processing plant central to several mines (including a slurry pipeline to the Port). A workers accommodation village at Tumby Bay is also proposed as part of Stage 2.

Future Stages 3 and 4 would be for expanded magnetite, hematite and grain storage areas. Sites could also be established for the export of minerals by other companies or for the export of other rural products. These would need to be the subject of separate approval processes, potentially through a rezoning of the land after the Port is constructed.

The proposed development would be located on the east coast of Eyre Peninsula, South Australia. The site is 210km north-west of Adelaide, 70km north-east of Port Lincoln, 21 km north-east of Tumby Bay and 20km south-west of Port Neill.

The location of the project was dependent on a number of factors, including sea water depth to accommodate Cape class vessels (without dredging), within a reasonable proximity to both the shore and Centrex’s mineral reserves on the Eyre Peninsula and potential social and environmental sensitivity.

While this AR is intended to be a “stand alone” document, the detailed information on which it is based is contained in the Port Spencer Stage 1 Public Environmental Report (PER)-February 2012; general public, the District Council of Tumby Bay and State Government agency comments on the PER and Centrex’s responses to these comments in the Response Document (RD) - November 2012. It also relies on some further specific information, comments and advice provided by the proponent and relevant South Australian Government agencies. Discussions with the Australian Government Department of Sustainability, Environment, Water, Population & Communities have also been held on matters related to the *Environment Protection and Biodiversity Conservation Act 1999*.

## **1.2 BACKGROUND**

The proponent for this project is Centrex Metals Ltd, a publically listed South Australian iron ore exploration and mining company who have extensive tenement holdings over iron ore resources and exploration targets on Eyre Peninsula (Southern Gawler Craton Mining Province).

As stated in the PER, due to increased resource demands, largely driven by Asia (particularly from China), there is a need within the industry for efficient transportation options and associated infrastructure that is cost-effective and environmentally responsible. The project offers an alternative port and shipping option to Port Lincoln that would be more centrally located for the southern and mid regions of the Eyre Peninsula, which would reduce transport distances and

improve the time taken to move the product to the market for both the mineral and agricultural businesses.

It should be noted that the proponent initially titled the proposal as the “*Sheep Hill*” *Deep Water Port Facility*. After the release of the Guidelines for the PER, the proponent renamed the proposal *Port Spencer Stage 1*.

### **1.3 ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCEDURES**

Environmental Impact Assessment (EIA) is the process of identifying the potential environmental impacts of a proposal and appropriate measures that may be taken to minimise those impacts. The main purpose of EIA is to inform decision-makers of the likely impacts of a proposal before decisions are taken. The process also allows the community to make submissions on the proposal based on the environmental documents presented for assessment.

Procedures for EIA for Major Developments or Projects in South Australia are set out in Sections 46, 47 and 48 of the *Development Act 1993*.

On 7 December 2010, Centrex wrote to the then Minister for Urban Development and Planning requesting a Major Development declaration for a development directly associated with the establishment and operation of a deep water port facility and associated elements.

On 6 January 2011 the former Minister for Urban Development and Planning made a declaration in the Government Gazette, that the proposed ‘Sheep Hill’ Deep Water Port Facility on Eyre Peninsula be assessed as a Major Development, under the provisions of Section 46 of the *Development Act 1993*. In making the declaration the Minister formed the view that the proposed development was of major environmental, social and economic importance and that a declaration was appropriate or necessary for the proper assessment of the proposal.

The proponent’s development application for Stage 1 was subsequently referred to the Development Assessment Commission (DAC) to determine the level of assessment that should apply to the proposed development [Environmental Impact Statement (EIS), Public Environmental Report (PER) or a Development Report (DR)] and to set the Guidelines (i.e. issues to be addressed).

After considering the proposal, DAC determined that a Public Environmental Report (PER) was the required level of assessment for the Stage 1 proposal and set the Guidelines, which were publically released by the Minister for Urban Development, Planning and the City of Adelaide on 1 June 2011. Pursuant to Section 46C of the Act, the proponent must comply with the Guidelines when preparing the PER for Stage 1.

The proponent prepared a PER, which was released by the Minister for Planning and placed on public exhibition from Friday 9 March to Friday 27 April 2012. During this seven week period, submissions were invited from the public. Submissions were also sought from the Tumby Bay District Council and relevant Government Agencies. A public meeting was held in Tumby Bay by the Department of Planning, Transport & Infrastructure on 4 April 2012, to explain the assessment process and the proposal. The aim of the meeting was to provide an opportunity to answer questions that would assist the public in preparing submissions. Approximately 40 members of the public attended the meeting and representatives from Centrex Ltd, Eyre Iron Ltd (the mining company) and consultants Golder Associates were in attendance to present the proposal, answer questions and note the issues raised by the public.

In response to the PER, a total of 13 formal submissions were received from the public and State Government agencies. The District Council of Tumby Bay submitted a letter of support for the proposal. The submissions were referred to Centrex for a response, in accordance with Section 46(7) of the *Development Act 1993*.

Following the public exhibition period, the proponent lodged a Response Document (RD) to the submissions on the PER with the Minister on the 27 November 2012.

Pursuant to Section 46C(8) of the Act, in this AR the Minister has taken into account the PER, the public submissions and Centrex's response to them, the advice of the Tumby Bay District Council, the comments from Government agencies, and other matters the Minister considered appropriate.

This AR provides advice to the Governor, who is the final decision-maker on the proposed development. Pursuant to Section 48(5) of the Development Act, when making a decision on the proposed development, the Governor must have regard to the provisions of the appropriate Development Plan and Regulations (so far as they are relevant), the Building Rules (if relevant), the Planning Strategy, the objects, general environmental duty and relevant environment protection policies under the *Environment Protection Act 1993* (if the development involves a prescribed activity of environmental significance), the proponent's PER and the Minister's AR and any other matters considered relevant by the Governor. Pursuant to Section 48(7) of the Development Act, the Governor may specify any conditions that should be complied with if a development authorisation is granted.

## **2 THE PROPOSED DEVELOPMENT**

### **2.1 THE SITE AND LOCALITY**

Centrex proposes to establish a multi-user, deep water export port on 105 hectares of land at a location initially named by the proponent as ‘Sheep Hill’, between the coastal townships of Port Neill and Tumby Bay (Refer to Figure 1 - Locality Plan). Stage 1 of the proposed Port, comprising 48 hectares of the site, is primarily for the direct shipment of approximately 2 million tonnes of hematite ore and 1 million tonnes of grain per annum. The subject land was chosen following investigation of a number of other alternative sites (including the use of existing ports) from Port Adelaide through to Thevenard.

The subject land is undulating and largely cleared of vegetation, being historically used for agricultural activities (with few buildings or structures on it). The shore line is located on the eastern boundary of the site. There are existing transport routes to the site and access to the Lincoln Highway (Refer to Figure 2 – Site Plan).

The surrounding land uses immediately adjacent the subject land includes grazing and crop farming activities (plus 3 farming residences). Degraded native vegetation is present along the coast. Rogers Beach is located immediately north of the project site and the Lipson Cove beach/ Lipson Island Conservation Park is located approximately 1 km south of the closest project boundary (and 1.5 km from the proposed jetty). There are rocky outcrops on the headland between both beaches. The Sir Joseph Banks Group Marine Park is located 5 km south of the site. The port would be located in the Port Neill Aquaculture exclusion area.

### **2.2 THE SUBJECT LAND**

A detailed description of the subject land, including allotments and parcel references, is contained in the PER (Section 5.2). The majority of the site is held under Freehold Title by Centrex. A proportion of the land is held by the Crown as:

- Coastal strip held by the Minister for Environment & Heritage
- Seabed held by the Minister for Transport.

The submission from DEWNR (refer to RD Section 3.3) clarified that the Crown coastal reserve has been extended further inland and expanded to include a greater part of Rogers Beach.

The subject land also incorporates portions of public roads, as these are to be affected by the proposal, including upgrades to Swaffers Road, Lipson Cove Road and junctions with the Lincoln Highway. Transport routes from the Wilgerup mine also affect roads within the District Council of Cleve.

### **2.3 NATURE OF THE PROPOSAL**

Centrex proposes to establish a multi-user deep water export port (Port Spencer) between the coastal townships of Port Neil and Tumby Bay (Refer to Figure 3 – Conceptual Layout Plan). Stage 1 is primarily for the direct shipment of hematite from the company’s mines on Eyre Peninsula (initially from the Wilgerup mine near Lock). The facility would accommodate Cape class vessels and be suitable for the export of 2 million tonnes of iron ore and 1 million tonnes of grain per annum. Ore would be transported from the mine in B-Double trucks using the Birdseye

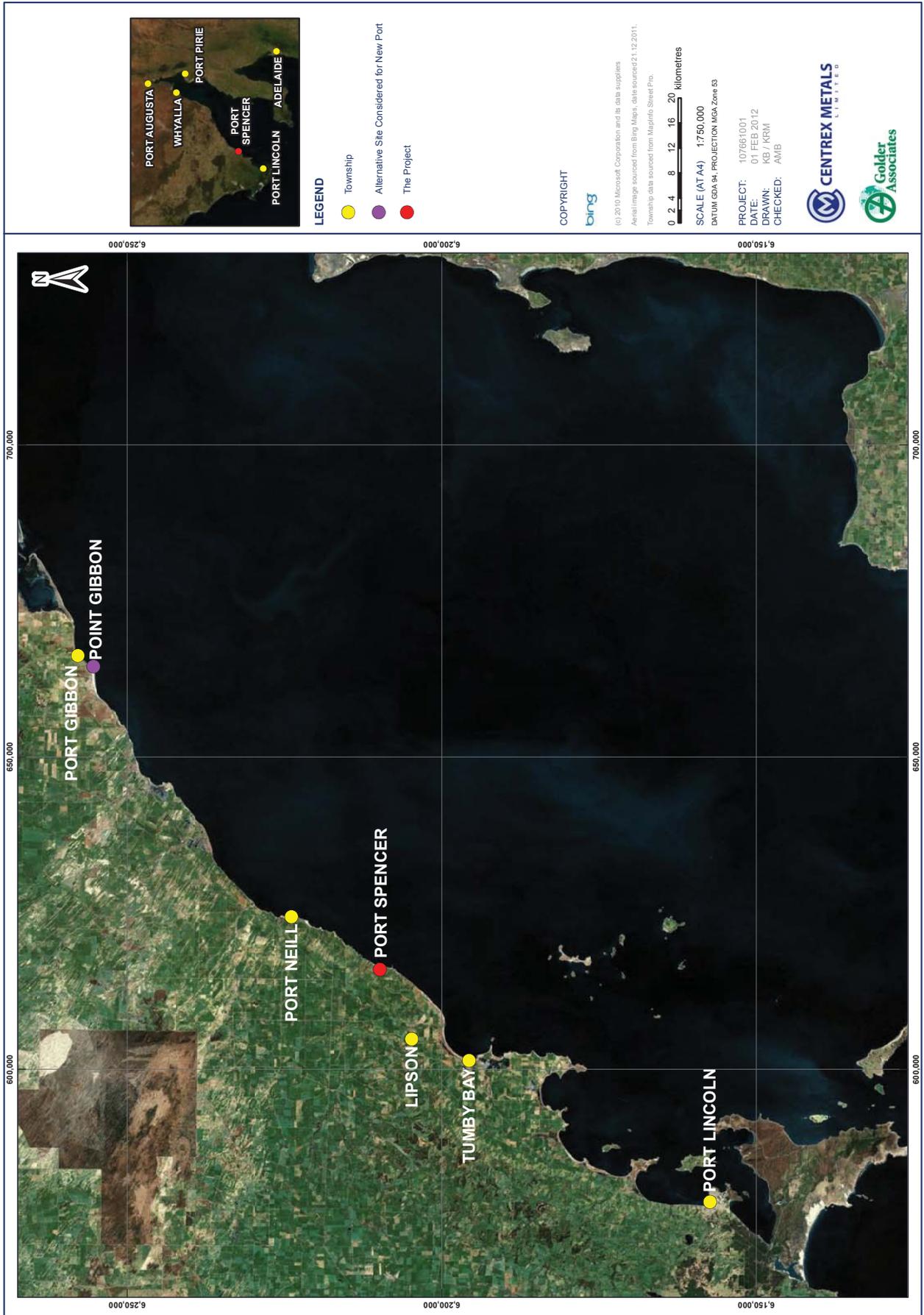


Figure 1 - Location Plan

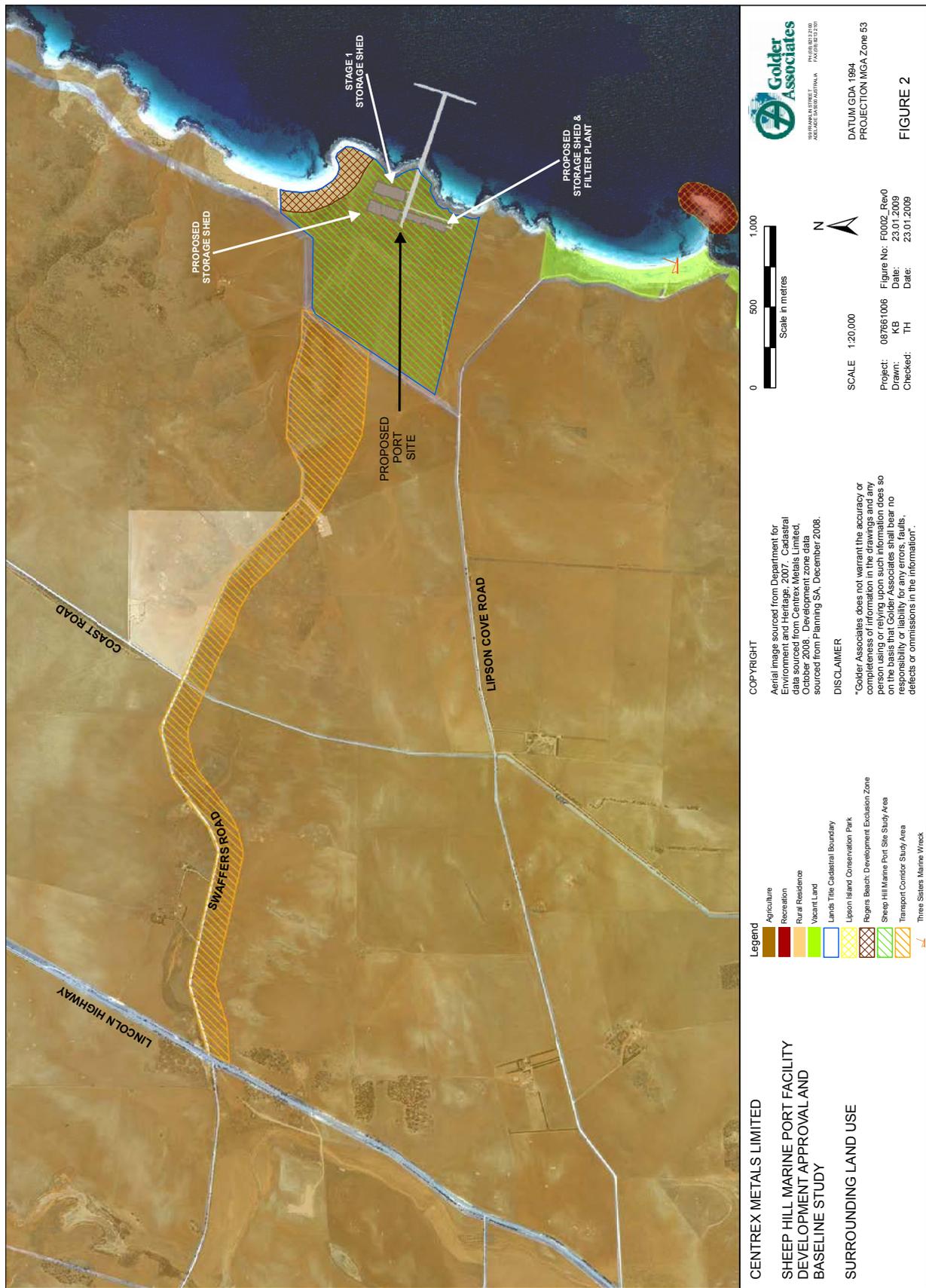


Figure 2 - Site Plan

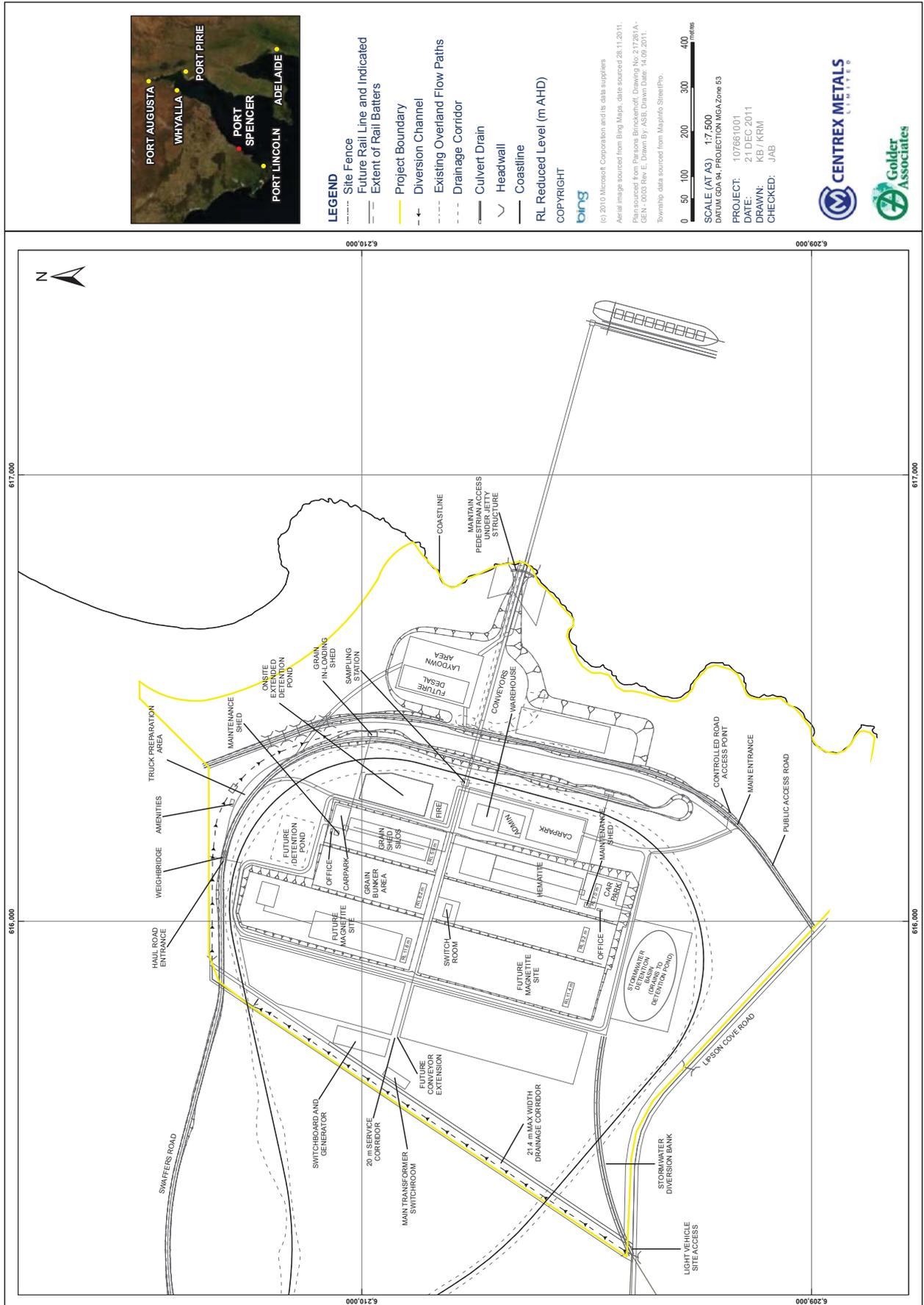


Figure 3 - Proposed Development Concept Plan

Highway to Rudall, then an upgraded Balumbah-Linnard Road to the Lincoln Highway. Access to the Port from the Lincoln Highway would be via an upgraded Swaffers Road.

A future Stage 2 is proposed for the processing of magnetite and would require a processing plant near the mines (and slurry pipeline to the Port) and additional storage areas and a small desalination plant at the Port. Stage 2 would have capability to export up to 20 million tonnes of iron ore per annum. Sites could also be established for the export of minerals by other companies or for the export of rural products, such as grain (possibly including rail access). A workers village is also proposed to house port construction and mine workers.

The entire Port project involves a capital investment of around \$250 million. Apart from the construction workforce (at its peak 200 people), approximately 70 people will be employed as a result of the development, comprising 30 staff to operate the project and 40 people employed by the operators of the grain and hematite operations on-site.

### **Overview of the Proposed Development**

The Port Spencer proposal is to be constructed with a view to exporting Centrex's iron ore from the Eyre Peninsula and providing the mining industry with effective access to international markets. Stage 1 involves the following components:

- Establishment of a Port, comprising a multi-user bulk commodity export facility accommodating Panamax (65,000 to 90,000 tonne capacity) to Cape Class (165,000 to 200,000 tonne capacity) vessels, suitable for export of ore from a single berth configuration and single ship loader.
- Establishment of a road transport and infrastructure access corridor from the Lincoln Highway, utilising the alignment of Swaffers Road.
- Establishment of an ore transport route from the Wilgerup Mine.
- The proposed Port may also serve as a multi-use export gate for grain and other mining companies on the Eyre Peninsula.
- Detailed design and construction of a jetty, out loading materials handling system and ship loader, site access, establishment of on-site services and site preparation for fully enclosed receipt and storage facilities.

More specifically, the Stage 1 proposal (Refer to Figure 4 – Conceptual Representation) comprises the following:

- 515 metre long jetty structure (including separate, enclosed conveyor galleries and ship loaders for ore and grain).
- Hematite and grain storage areas (sheds and silos/bunkers).
- Supporting Port infrastructure (administration office, amenities building, on-site septic system, warehouse, equipment storage sheds, site car parking etc.).
- Generator plant (including electricity transformer and switch room).
- Fuel, bulk diesel and chemical storage tanks.
- Stormwater retention and drainage facilities.
- Fire service tanks and pump systems (including emergency procedures for fire response and internal site fire breaks).
- Haul road and infrastructure access corridor from the Lincoln Highway to the Port, using an upgraded Swaffers Road (5 km in length).

- Truck weighbridge station.
- Light vehicle access via an upgraded Lipson Cove Road, with access to Lipson Island Conservation Park maintained.
- New public access road to Rogers Beach.

The PER (Section 4) provides a detailed description of each of these components.

## **2.4 CONSTRUCTION STAGING AND OPERATION MANAGEMENT**

Construction won't commence until all necessary approvals have been granted. The development is expected to be staged over an orderly 24 month construction period, as outlined in the PER (Section 1.2).

The PER (Section 7) outlines how site construction activities would be conducted and controlled. These would be managed through a Construction Environmental Management and Monitoring Plan (CEMMP), which covers a range of strategies proposed to minimise environmental impacts. An Operational Environmental Management and Monitoring Plan (OEMMP) would address post construction impacts. The PER indicates that the Environmental Management Plans are an internal management tool to facilitate the adoption of environmentally responsible work practices that aim to minimise adverse environmental impacts. It also assigns responsibility and reporting requirements for environmental management throughout the project. Mitigation measures for the construction phase and operational phase are more specifically outlined in the PER (Section 7.3.2.1).

The CEMMP would include a suite of management plans for:

- Air Quality Management
- Waste Management
- Revegetation and Rehabilitation
- Weed and Pest Management
- Construction Soil Erosion and Drainage Management
- Energy Efficiency
- Maritime Water Quality Management

The OEMMP would include a suite of management plans for:

- Air Quality Management
- Waste Management
- Revegetation and Rehabilitation
- Weed and Pest Management
- Construction Soil Erosion and Drainage Management
- Energy Efficiency and Site Water Management
- Maritime Pest Management
- Maritime Water Quality Management
- Emergency Response and Incident Management.



Figure 4 - Proposal Conceptual Representation

## **Construction Activities**

The schedule of site construction activities is not comprehensively outlined in the PER. However, the PER (Section 7) does detail construction activities that relate to each issue (such as air emissions, stormwater management etc.). It is expected that the following activities would occur:

### *Initial Works*

- Establishment of a site compound, including laydown areas
- Site preparation, including vegetation clearance and stripping/stockpiling of topsoil
- Establishment of access roads
- Initial stormwater management measures, especially diversion drains and storage ponds

### *Road Works*

- Establishment of transport corridor and sealing of Swaffers Road, including upgraded intersections with other roads and stormwater control measures. A separate access road for residents is also likely to be constructed.
- Sealing of Lipson Cove Road, including upgraded intersections with other roads and stormwater control measures.
- Upgrading the intersection of Swaffers Road the Lincoln Highway, including realignment of the Berryman Road connection.
- Construction of overtaking lanes on the Lincoln Highway.
- Sealing of the Murdinga – Melonga Road (from the Wilgerup mine to the Birdseye Highway) and the Balumbah- Kinnard Road (from Rudall to the Lincoln Highway), including upgraded intersections with other roads (and rail crossings) and stormwater control measures.
- Construction of a public access road from Lipson Cove Road to Rogers Beach, including stormwater control measures for local catchment drainage.

### *Port Construction Works*

- Establishment of site and building levels.
- Permanent stormwater management infrastructure progressively installed.
- Construction of internal roads and parking areas.
- Construction of storage facilities and associated infrastructure
- Construction of Administration buildings
- Provision of site infrastructure

### *Jetty Construction Works*

- Headland earthworks to establish a level pad at a lower height.
- ‘End-over-end’ construction of jetty structure (including pile driving/drilling)
- Installation of associated infrastructure (including conveyors), lighting and navigation aids.

Road works associated with Swaffers Road would need to be completed prior to major construction works commencing, with other road works completed before operation of the Port.

Screening vegetation along Lipson Cove Road would need to be planted during early construction, with adequate site preparation and weed/rabbit control undertaken in advance. All stockpiles and exposed surfaces would need to be stabilised (such as through wetting down, mulching, use of a cover crop or revegetation). A weather monitoring station would need to be established before earthworks commenced (especially for managing for dust and noise emissions).

## **2.5 INFRASTRUCTURE REQUIREMENTS AND AVAILABILITY**

As outlined in the PER, the infrastructure requirements for Stage 1 include the following components:

- Swaffers Road would be the main heavy vehicle (road train and B- double) haul road and infrastructure corridor for the port. It is currently an unsealed road. The proposed vehicle access road would generally follow the alignment of Swaffers Road from the intersection with Lincoln Highway and be approximately sealed road 5 km long and 0.1 km wide. Light vehicles (up to AUSTRROADS class 2) would access the Port from the south via Lipson Cove Road, which would be upgraded by Centrex. Whilst the PER only considered road transport aspects from the Lincoln Highway to the Port, the RD (Section 5.7) addressed transport requirements from the Wilgerup mine site to the Port.
- The establishment of a shipping lane to cater for Cape class size vessels as there is no current recommended shipping lane for vessels from the Port; however, a suitable path to the main shipping lane that is used to access OneSteel Whyalla has been identified. A study of the seabed in the area to determine an obstruction free shipping lane would-be taken prior to operations.
- The Port would require fuel and chemical storage for hydrocarbon based fuels, oil and grease, hydraulic fluid, brake fluid and coolant for plant and equipment, fumigants for stored grain, and general cleaning aids. These will be contained in appropriately bunded warehouse/storage sheds. Bulk storage of fuels will be stored above ground in a roofed 10,000 litre bunded tank, diesel will be stored in a 68,000 litre bunded tank and the tanks would be in accordance with AS1940:2004.
- Eyre Peninsula's electricity supply network has insufficient capacity currently to supply sufficient electricity for the project. Electricity to the site would require a substantial upgrade of the existing 132 kV Eyre Peninsula transmission line. Connection to the electricity network would be considered by Centrex if an upgrade occurs. Centrex would contribute to the major capital costs of an upgrade and for a spur line from the grid to the site, but not for an upgrade on the line itself. Centrex would use ElectraNet as a power provider, should their "green grid" occur. Requirements for Stage 1 would not exceed 5 Mega Watts of electricity if the site is fully developed. Centrex's power needs would increase to 80 MW over five years and to 200-250 MW within seven years. Due to the time required to upgrade and augment the existing power supply, Centrex would initially use an on-site diesel generator during construction through to connection to the existing electricity grid.
- Stage 1 would require approximately 1 Mega Litre (ML) of water per day for 10 months for initial earthworks and construction. This will decrease to 0.25 during the Ports operation. SA Water has confirmed that the water capacity required is available without negatively impacting on domestic security of supply. A new water pipe line (mains connection) would

be constructed along Swaffers Road to the site connecting into the existing main along the Port Lincoln Highway. Future demands will be supplied by a desalination plant.

- Non- potable water will be collected via the onsite drainage network and collection system. All buildings would be equipped with guttering and downpipes so stormwater can be collected and harvested for wash down of plant and equipment, fire suppression systems and dust suppression. A 135 ML onsite extended detention pond and stormwater retention pond would further manage stormwater for onsite water usage.
- Initially temporary ablution facilities would be installed as there are no on-site sewage connections. Sewage and effluent from the facilities would be dealt with by an approved waste control system. Waste water would be dealt with on site via an environmentally advanced water treatment system.
- The project would contain all hard waste on site. Currently hard waste is collected on a volunteer basis at Lipson Cove and adjoining beaches. A Waste Management Plan would be implemented to control waste on site with disposal of waste contracted to an EPA licensed commercial waste and recycling operator.

More specific information on each of these aspects is provided in the PER.

### **3 EXISTING ENVIRONMENT**

#### **3.1 PHYSICAL SETTING**

Tumby Bay and Port Neill are the nearest towns to the site being 21 km south-west and 20 km north-east respectively. The Sir Joseph Banks Group of islands is 22 km south of the proposed site, with the northern boundary of the Sir Joseph Banks Group Marine Park being 5 km away.

The proposed development is to be located on vacant land on a relatively remote part of the coastline in the region. The area that surrounds the project is undulating and comprises rounded hills to the north, west and south of the site with an elevation of approximately 50 metres, with a series of valleys in between. The land rises along the coastline on the eastern side, where rocky outcrops occur either side of the headland sloping down to sandy beaches. Rogers Beach, which contains a small sand dune area, is to the north of the site and Lipson Cove Beach and Lipson Island to the south. Lipson Island is located in the Lipson Island Conservation Park. Lipson Island is a low lying island with extensive areas of bare rock and some sandy areas. The coastal edge has strips of remnant native vegetation.

As stated in PER, the headland where the proposed jetty will be located rises from the coastline to approximately 25 metres AHD. To the west of the headland the land slopes down towards a valley where the centre of the proposal will be located. This area is approximately 10 metres AHD and from there it rises to Swaffers Road where the rise is continuous, until it reaches a high point at the Coast Road intersection.

The immediate area has a number of small rural holdings. The land has been degraded through agricultural and pastoral land uses is largely devoid of native vegetation. Wheat cultivation occurs currently over most of the area, with less than half the site lying fallow. There are no significant trees present and remnant native vegetation is restricted to the coastal zone. There is no built infrastructure, except for a small telecommunications tower/hut (which will not be affected), only fencing.

#### **3.2 GENERAL CLIMATE**

The Port Spencer site has a semi-arid or temperate climate with, cool wet winters and hot dry summers. The PER describes the climate of the area as being complex and influenced by the sea breezes, land breezes and high ground to the west interacting with the regional scale winds.

Records from the North Shields area (Port Lincoln Automatic Weather Station, approximately 70 kms south-west from Port Spencer) were used to determine the temperatures, rainfall and wind expected at the site. Due to similarity in coastal location, wind patterns have been taken from Port Lincoln. Wind direction in the spring and summer months is mainly from the south-east. However, in autumn and winter it can be from all directions, though predominantly from the north-west through to the west.

The locality receives approximately 385mm mean annual rainfall, which falls mainly in winter. Temperature figures for the area indicate a mean monthly summer temperature of 25.9 degrees centigrade and a mean monthly winter temperature range of 7.1 degrees centigrade.

### **3.3 GEOLOGY AND HYDROGEOLOGY**

The geological and hydrological setting of the proposed development is adequately discussed in the PER (Section 5.3; Appendix D). The site was investigated by a soil study to determine soil profiles to determine erosion and hazard potential. The study inferred the soil profiles were fairly uniform with Sodosols (have sufficient sodium to be used for plants) and Tenosols (have a weak vertical profile) being the predominant types. The hydrogeological conditions within the site are also adequately described in the PER (Sections 5.4 and 5.5; Appendix E).

The geology of the site is characterised by its location in the Kalinjala Shear Zone. The PER describes it as a large scale crustal structure on the Eyre Peninsula, which separates the Donington suite granites to the east from meta-sedimentary schist, quartzite, dolomite marble and banded iron formations of the Hutchison Group to the west. There is granite, granite gneiss and schist rocks beneath the site and exposed at the adjacent beaches. The general geology of the area is fractured rock basement overlain by unconsolidated sediments.

The PER describes how precipitation falls mainly in the winter months, with evaporation rates being high relative to rainfall. There is a single groundwater aquifer, in the form of a fractured rock aquifer, which due to its placement adjacent marine environment is likely to be more saline.

Groundwater depths range from shallow (1.7 m deep) to deep (9 m deep) and water tables occur across the site where soils are typically fine to coarse clayey sand and silt. There is 910 hectares of catchment area and no impervious surfaces, with runoff draining to Rogers Beach. Groundwater flow is generally in the direction of the coast and appears to be flowing from the fractured rock system.

There is evidence of large channel incision and erosion from Swaffers Road, running down to a farmhouse at the end of the road. Generally the overall catchment shows little erosion.

### **3.4 COASTAL PROFILE & COASTAL PROCESSES**

The Port Spencer site is located within the Spencer Gulf on a relatively remote part of the Eyre Peninsula coastline. The coastal profile is dominated by rocky headlands (including bare rock outcrops and in some instances large boulders) and sandy beaches, with patches of degraded remnant vegetation. The beaches range in width from 20 to 80 metres. A rocky reef extends 50 to 70 metres either side of the headland that is the site of the proposed jetty. The semi- arid terrain and low annual rainfall (350mm), results in little freshwater runoff reaching the Gulf.

Coastal processes include wind, waves, currents, tides and floods which influence the distribution of sediments in the coastal zone, which in turn shape the coastal areas.

Spencer Gulf is a shallow embayment with an average depth of approximately 20 metres and has a generally smooth sea floor and associated substrates characteristic of cool water and high salinity carbonate sedimentation. This salinity is more prevalent during summer and varies across the Gulf, generally increasing from the west to the east. Tides vary, but generally are two metres, excepting at neap (or dodge) tides when tidal movement ceases for 24 hours at 14 day intervals. Wave height is typically 1.0 metres in gulf with higher waves having been recorded at 1.8 metres. The Port site is protected from strong swells. However, the Eyre Peninsula can experience high winds that affect wave height. The largest waves at the Port are generated by

winds from the south-east with the largest wave height being 3.6 metres (which is not a common occurrence).

The PER (Appendix K) states that sediment samples were taken at the proposed jetty location to identify seabed characteristics, which were defined as fine to medium (with some gravel content), silts and minor amounts of clay. There were no exceedences of contaminants found to be in the sediments, as they were all below the surrogate detection limits.

### **3.5 OCEANOGRAPHIC CHARACTERISTICS**

Studies were undertaken to understand the coastal environment and wave dynamics in the area to identify possible impacts, in terms of the existing marine environment and how they would affect the proposed jetty and shipping movements. The PER, (Section 5.12) states that the types of oceanographic processes driving water movement in Spencer Gulf, and between gulf waters and the Southern Ocean, are thermohaline currents, tidal streams, water movement associated with long period sea level oscillations (i.e. swell), wind driven currents and residual currents.

Gulf thermohaline currents are brought about by horizontal pressure gradients resulting from density variations in the water. Density variations are caused by salinity and temperature differences that result from the effect of evaporation over the region. Evaporation is high in the summer months. Salinity is higher at the head of the Gulf than it is around the mouth area where the environment is less sheltered.

A number of factors affect long period tides in the gulf, from annual solar, semi-annual lunar, monthly/fortnightly cycles and metrological affects caused by seasonal variations, barometric pressure, wind speed/direction, salinity and temperature. Residual currents (large velocity currents) occur in the Gulf independent of metrological conditions.

Tidal currents are the more sustained currents within the Gulf. Water exchange between the upper and lower Gulf is limited, as the upper gulf is much shallower. Neap tides are just one of the characteristic features of the Gulf along with larger spring tides associated with large tidal streams and mixing (this is in the absence of storm conditions).

Port Spencer is closer to the mouth of the Gulf where wave energy is moderate. Wave energy is very low further north in the upper regions of the Gulf. The waters at the head of the gulf are more saline than those at the mouth, making it an inverse estuary. The movement of the water within the middle to the lower Gulf moves in a clockwise direction. Current speeds were recorded between 0.34m/s and 0.69 m/s with larger current speeds at the top of the column. Due to intense horizontal mixing, temperatures remain even at any one time of the year.

### **3.6 TERRESTRIAL AND COASTAL ECOLOGY**

The proposed Port is located within the Eyre Hills, which is part of the Eyre York Block Bioregion. The land is highly modified, due to previous vegetation clearance for agriculture. A number of surveys were undertaken for the PER (Appendix I) to determine the flora and fauna existing on the site. Paddocks not being utilised for wheat cultivation are dominated by weed or agricultural species. Invasive species made up 33% of the total species composition. Remnant native vegetation still exists in patches along the coast or in narrow strips along road reserves.

The surveys undertaken found there are 3 distinct types of plant associations in the area. They are Low Shrubland, Tall Open Shrubland, (both mapped by the then Department of Environment and

Heritage) and fallow paddock. The Shore *Westringia* Tall Open Shrubland associated with Rogers Beach would be protected by the proposed development exclusion zone. Whereas the nitre bush tall open shrubland had little conservation value, was highly degraded and a habitat for rabbits. Low Shrubland within the coastal strip was also found to be degraded but remain important to the region (due to low remnancy rates). The project infrastructure has been sited to minimise any clearance from this area. The only Low Shrubland affected was where the jetty and conveyor infrastructure crossed over it.

The spring field survey for fauna identified 43 species (26 bird, 7 reptile, 1 frog, 6 mammal and 3 butterfly species). No flora or fauna species identified in the surveys were listed under the *National Parks and Wildlife (NPW) Act 1972* or the Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*. There were no rare or threatened species or threatened ecological communities found in the project area. However, eight introduced species were found.

Lipson Island was included in the PER field surveys and was identified as having significant value as a bird rookery for a number of species listed under the NPW Act and the EPBC Act. It is also a nesting site for the little Penguin (*Eudyptula minor*), as well as other nesting birds (e.g. the Black-faced Cormorant (*Phalacrocorax fuscescens*), the Silver Gull (*Larus novaehollandiae*) and the Crested Tern (*Sterna bergii*)). Migratory birds also use the island. These birds are also preyed upon by raptor species, including the White-bellied Sea-eagle and Eastern Osprey. The only introduced species were the Rock Pigeon (*Columba livia*) and the Common Starling (*Sturnus vulgaris*). Lipson Island supports no significant flora.

### **3.7 MARINE ECOLOGY**

The marine species recorded during the marine field surveys (PER Appendix J) relate to the area within and around the site (especially the jetty location). The site comprises small rocky headlands which lie between intertidal sandy beaches to the north and south, dispersed with outcrops of granite, basalt and other boulders. The PER states that typical species found in South Australian intertidal communities were present. However, there were no significant intertidal shellfish beds, marine mammal haul out sites or seabird habitats.

Typical species of temperate subtidal communities were present in the shallower water (i.e. comprising rocky reefs, seagrass and sandy substrate habitats). The PER describes the benthic macro-infauna of the seagrass habitat being dominated by the presence of crustaceans, annelids and to a lesser extent molluscs, whereas, the sandy mid benthic sites were dominated by annelids.

Importantly there were no endangered or threatened species listed under the NPW Act or EPBC Act. The only species of interest was a pair of common male/female Crested Three-fin (*Trinorfolkia clarkei*), recorded in the rocky reef area. The Leucosiid Crab (*Cryptocnemus vincentianus*), which has been poorly recorded for the State, was found in seagrass habitat within the vicinity of the proposed jetty.

### **3.8 SOCIO-ECONOMIC CHARACTERISTICS**

The Port Spencer proposal is located within the District Council of Tumby Bay. Tumby Bay is the main service centre for the area. Agriculture is the main industry and means of employment. It is also the main contributor to the District economy. Other contributing factors to the economy are tourism, fishing, aquaculture and mining. The PER indicates the project would open up the Eyre Peninsula to a resources based industry.

A baseline study undertaken in 2009 has assisted Centrex in how to effectively utilise the skills of local communities, develop opportunities for local business and at the same time, “*respect the lifestyle and values enjoyed by the residents of the Lower Eyre Peninsula*”. The potential export of grain would be dependent on the viability of the project.

As stated in the PER, potential positive benefits from the proposal for the communities closest to the development, depending on the phase of development, are:

- The construction phase would have the largest workforce requirements.
- The construction phase would result in an increased demand on local services and accommodation.
- Centrex is committed to employing and procuring locally where possible.
- The project offers significant export potential for the mining and the agricultural sectors in the region which in turn may positively contribute to economic and employment development.

### **3.9 HERITAGE**

An Archaeology survey was undertaken for the project site (including Swaffers Road). The survey did not identify any European heritage sites of significance listed under the South Australian Register, or recognised by the Department of Environment, Water and Natural Resources (DEWNR) or the District Council of Tumby Bay.

The survey did identify the actual site of the ‘*Three Sisters*’ maritime wreck (which clarified an incorrect location record on the heritage register). The wreck is located approximately 1.5 km south of the jetty in the Lipson Island Conservation Park. There are no listed maritime heritage sites within close proximity to proposed or existing shipping lanes. The proposed Port is not expected to impact on any heritage values.

DEWNR advised that it is a requirement under the *Historic Shipwrecks Act 1981* to notify its Heritage Policy Unit of any newly discovered wrecks and all relics recovered from wrecks (including any snagged shipwreck artefacts).

Other non-indigenous items of historical interest are located within the Port area and relate to past agricultural and pastoral development. A shearing shed (comprising a random rubble construction with galvanised iron and timber frame lean-to) and associated yard located on the south side of Swaffers Road, various refuse dumps (with abandoned farm machinery), a former water reserve and a former stock route. Lipson Cove Jetty, Swaffers Shearing Shed and the Wallaby Sam Monument have been listed in the PER (Table 5-10) as cultural heritage items. The PER states that these last four sites have heritage significance.

The PER provides environmental management objectives that speak of avoiding disturbance or damage to any registered heritage sites. Standard procedures would be developed to address the discovery of heritage places, though in this case the likelihood of finding any on site would be low.

## **4 CONFORMITY WITH LEGISLATION AND POLICIES**

Section 48(5) of the *Development Act 1993*, requires that, before the Governor considers a proposal that has been declared a Major Development, the Governor must have regard to (amongst other things) the provisions of the appropriate Development Plan and the regulations (so far as they are relevant) and the Planning Strategy. Other matters considered relevant by the Governor can also be taken into account.

The Crown Solicitor has advised that in respect of applications being assessed as Major Developments under the Act, the appropriate Development Plan and Planning Strategy are those current at the time of the decision, as Section 53 of the Act does not apply to the Major Development provisions of the Act.

### **4.1 DEVELOPMENT PLAN**

#### **4.1.1 Development Plan Provisions**

The relevant Development Plans are the Tumby Bay District Council Development Plan consolidated 24 November 2011 and the Land Not Within a Council Area (Coastal Waters) Development Plan consolidated 8 March 2012, which should be considered in relation to the proposed development.

In regard to the Tumby Bay (DC) Development Plan, the subject land is located partly within each of the following Zones:

- **General Farming Zone:** The majority of the project and associated infrastructure are proposed in this Zone, including conveyors, warehouse, administration buildings, grain shed silos, hematite shed, warehouse, grain bunker area, weighbridge, detention ponds, amenity sheds, maintenance shed, carpark, truck preparation area, haul road, and services.
- **Coastal Zone :** The part of the jetty structure (including conveyors) adjacent the shore and associated laydown area, site works, coastal protection works and pedestrian access under the jetty are proposed in this Zone.

Council Wide Objectives and Principles of Development Control in the Eyre part of the Tumby Bay (DC) Development Plan encourage a number of outcomes, which include the following:

- orderly and economic development
- a proper segregation of living, working and recreation areas
- a proper location of public and community facilities
- preserve and manage environmentally important features of coastal areas
- maintain and improve public access to the coast
- protect the physical and economic resources of the coast from inappropriate development
- development should not be undertaken on land liable to inundation by tidal, drainage or flood waters or where it will create or aggravate coastal erosion
- development should ensure the satisfactory disposal of effluent
- development should incorporate a stormwater management scheme
- development in Bushfire Protection Areas should be designed and constructed to achieve the appropriate standards of fire safety

The Development Plan indicates that industrial development should not significantly impair the character and amenity of the surrounding landscape or lead to deterioration of health and living standards and should not generate conditions likely to cause pollution of the environment or unduly impair the amenity of the locality. Industrial development should only take place in a manner that minimises significant adverse impact on adjoining uses due to hours of operation, traffic, noise, fumes, smell, dust, paint or other chemical over spray, vibration, glare or light spill, electronic interference, ash or other harmful or nuisance creating impacts. Industrial development should take place in environmentally acceptable areas and that they should be developed in an orderly manner.

The site boundary also extends into the coastal area where the policies for the Land Not Within a Council Area (Coastal Waters) Development Plan apply. This area of the subject land would encompass the eastern part of the jetty structure and “L shaped” ship berthing extension of the jetty. This Development Plan states that industrial development should take place in suitable areas. The Plan contains Objectives and Principles of Development Control for the environmental protection of coastal and marine areas, the retention of public access and the protection of sites of cultural, heritage or scientific significance. Development should only be undertaken on land that is not subject to coastal hazards and does not require public expenditure on protection of the development or the environment. Adequate financial guarantees for construction, operation, management and maintenance are also prescribed in the Plan.

#### **4.1.2 Assessment Against the Development Plans**

##### **Tumby Bay (DC) Development Plan**

Consideration of the proposed development of a deep water marine port against the policies for each of the two zones within the Tumby Bay Development Plan suggest that the types of land uses proposed are generally not envisaged by the Plan. In particular:

- The Coastal Zone aims to protect and conserve the coast to maintain biodiversity and scenic values.
- The General Farming Zone seeks the promotion of general agricultural activities on large land holdings
- Long term protection of primary production from incompatible land use is sought
- Reinforcement of the existing rural character of the area is encouraged

An assessment against the Council Wide policies of the Tumby Bay Development Plan suggests that the proposal is generally compatible with the policies that relate to economic and orderly development and employment generation, which originate from the proposed development’s potential to encourage employment growth (particularly during the construction phase). The proposal will generate substantial employment (particularly during the construction phase), whilst broadening and diversifying the employment and economic base of the region. In relation to the environment policies, the proposed works are likely to generate disturbance of the coastal and marine environment. There would also be impacts on the visual amenity of the coast through the introduction of an industrial type of development, particularly a jetty structure and ore/grain storage structures.

Other impacts would include the generation of additional traffic (including heavy vehicle and light vehicle movements) and noise associated with the proposed activities. Further discussions would be undertaken with the Council and Department of Planning, Transport and Infrastructure

through the detailed design phase to reach agreement on the scope of potential traffic improvements required, particularly as it relates to providing turning/acceleration lanes for heavy vehicles and overtaking lanes on the Lincoln Highway.

### **Land Not Within a Council Area (Coastal Waters) Development Plan**

The proposal has the potential to create a number of onsite and offsite impacts on a range of environmental elements in the areas covered by this Development Plan. These include impacts associated with an increase in the frequency and size of visiting shipping vessels. This has the potential to impact on the immediate marine environment and the surrounding ocean environment which includes a number of offshore islands in the vicinity of the subject site.

The key potential impacts to marine flora and fauna are expected to relate to jetty, including disturbance of the sea floor during construction and potential pest or invasive species from visiting vessels during operation. This impact is expected to be limited to a small area of direct influence and would not damage any areas or species of conservation significance.

The objectives for the Coastal Waters Zone include the following provisions:

- Orderly and economic development.
- A proper distribution and segregation of living, working and recreational activities.
- The conservation preservation and enhancement of scenically attractive areas.
- The conservation and preservation of terrestrial and marine flora, fauna and scenery.
- Sustain and enhance the natural coastal environment.

The provisions recognise that there is a need for development and that such development should be orderly, economic and be suitably separated from living and recreational areas. It is also implicit that development could take place in coastal areas and certain types of development are envisaged. At the same time the Plan seeks to ensure development does not damage the coast unduly or unnecessarily. The overriding intention of the Plan is to retain the scenic qualities of the Zone and to retain the significant elements of the coastal environment, including flora and fauna.

#### **4.1.3 Rezoning the Land**

This assessment and any possible development approval is primarily related to the establishment of a port facility for the export of iron ore by the proponent, and to a lesser extent the export of grain by a separate party. It is anticipated the proponent would only construct facilities for its own purposes. Separate allotments are expected to be created by the proponent for other users of the facility. Any approval for facilities for the export of grain, or mineral resources by another company, is likely to be the subject of a separate application and assessment process. In this instance there would be merit in considering a rezoning of the land (i.e. through a Development Plan Amendment process) to establish zones and policies to facilitate the orderly assessment of such proposals by Council itself.

### **Conclusion**

The proposed Stage 1 development introduces a port and jetty facility into the Coastal Waters and Coastal Zones, where development of the type proposed is not an envisaged use. The proposal is consistent with a number of the Zone policies which relate to coastal hazards and

design measures to minimise visual and traffic impacts. The relationship of the proposal to other Zone policies that relate to the protection and enhancement of the environment, particularly impacts on the coastal and marine environment, needs to be carefully managed. It is considered that the introduction of intense human activity in an area which is considered to be environmentally sensitive has to be managed judiciously, should the project be approved.

The proposal is also not entirely consistent with the intent of the General Farming Zone. This is the Zone in which the majority of the development will be situated. The proposal introduces intensive human activity into a Zone intended for agricultural and farming activities. The scale and nature of development goes far beyond what the Development Plan envisages, although the establishment of an alternative grain port would benefit the agricultural industry. The proponent has included measures which when implemented, will seek to minimise (as far as is practical) the impacts of noise, traffic, disturbance and visual intrusion.

As with the Zone Policies, the proposal is also at odds to a degree with several Council Wide policies relating to conservation, preservation and enhancement of the environment. In relation to policies that relate to industrial development, economic development and community benefit, the proposal can be considered to be consistent on the basis that it would generate economic and community/social benefits, through creation of employment and increased investment/spending in the region. In regard to policies relating to the appearance of development, it is considered that the appearance of buildings and structures is reasonably consistent with the relevant policies. In broad terms, the proposal is also considered to be consistent with policies relating to infrastructure provision, bushfire protection measures, landscaping, traffic, parking and public access.

It is concluded that, on balance, whilst somewhat at variance with a number of zone and Council wide policies, the proposed development is considered to have sufficient value and benefit such as to warrant a positive assessment.

## **4.2 PLANNING STRATEGY**

The South Australian Planning Strategy provides broad strategic direction for the State. The subject site is subject to a range of broad strategies (such as Economic, Environment & Resources and People Towns & Housing Infrastructure) and those specifically relating to the Eyre and Western Region Plan, which supersedes the relevant sections of the previous Planning Strategy for Regional South Australia (last updated in 2007).

It is considered that the overall development of a common port and export facility is consistent with the general objectives contained in the Planning Strategy. The objectives encourage economic development, particularly in the resources sector and focussing on the natural and mineral resources of the region. Specific policies relevant to coastal development encourage the expansion of mineral production and export, in environmentally acceptable areas. A further policy seeks the provision of reasonable public access in new waterfront development.

The Eyre and Western Region Plan - A Volume of the Planning Strategy (April 2012), is one of seven regional volumes that make up the South Australian planning Strategy. The Eyre and Western Region Plan seeks to build on traditional industries and develop new industries in response to local, regional and international market opportunities. In particular mining and resource processing and the export of these products are seen as industries that should be further

developed. However, such development needs to ensure that the coastal and marine environment is suitably protected.

The Eyre and Western Plan seeks to:

- Balance the social, economic and environmental demands of the region.
- Maximise the region's competitive advantages in renewable energy, mining, tourism and aquaculture.
- Manage natural resources and protect vulnerable environments and species.
- Manage and facilitate existing and planned infrastructure to maximise economic development and job growth.

The Port Spencer Stage 1 proposal satisfies the strategies for the Eyre and Western Region through the establishment of a port and export facility to support the development of mineral production and agricultural production in the region. The development of a mineral and grain export facility or 'hub' would provide improved infrastructure and associated support services for the future expansion of these industries.

Regional confidence and employment is also promoted through the establishment of the proposed port facility and the provision of support facilities necessary to support the development proposed. There will be flow-on economic benefits for businesses in the local area, particularly Tumby Bay (and Port Neill and Port Lincoln).

The proposal is considered to be compatible with the relevant objectives of the Planning Strategy.

In conclusion, the proposal responds to a need to provide a mineral and grain export facility, and is consistent with the overarching objectives contained in the Planning Strategy for Regional South Australia and the Eyre and Western Region Plan, and is considered to be consistent with the provisions relating to resource development and economic development.

In relation to environmental issues, the proposal would involve some disturbance to the environment and would result in a minor loss of some flora and fauna in the area affected by the proposed jetty structure. Appropriate measures to mitigate further environmental impact are necessary in order to meet the strategies relating to protection and enhancement of biodiversity.

The Eyre and Western Region Plan recognises that some development will take place in coastal and sensitive areas but seeks to ensure an appropriate balance is achieved between environment protection, preservation of the regions assets and the need for appropriate development together with the resultant economic benefits which result from development that utilises the region's natural competitive advantages.

### **4.3 BUILDING RULES**

This AR does not include a specific assessment of the development against the provisions of the Building Rules under the *Development Act 1993*. If the Governor grants a provisional development authorisation (pursuant to Section 48 of the Act), further assessment and certification of the proposed development against the Building Rules would be set as a 'Reserved Matter' for further decision-making. However, a full development authorisation (equivalent to a development approval under Part 1 of the *Development Act 1993*) would only be made by the

Governor or (his delegate) *after* a private certifier or the relevant Council has assessed and certified that any work that constitutes 'building work' under the Act, complies with the Building Rules (and has supplied this information to the Minister, as required by Regulation 64 of the Development Regulations 2008). The Building Rules certification must be consistent with any provisional development authorisation and would ensure safety (including fire safety) and structural stability of construction.

The following structures would need Building Rules Consent (and a Certificate of Occupancy) to be obtained, prior to the commencement of operations on the site:

- Jetty structure, including ship berthing extension.
- Conveyors.
- Ore in-loading shed and storage sheds.
- Grain in-loading shed and storage silos/bunkers.
- Administration building, office building and amenities building.
- Warehouse.
- Maintenance shed.
- Switchboard and generator building.
- Main transformer switch room and weighbridge.
- Chemical and fuel/oil storage facilities.

In addition, several components of the development (including signage, stormwater management, monitoring programs and operational protocols) would be required to meet the relevant Australian Standards , EPA Guidelines/Codes and other relevant engineering standards or best practices. All construction and building work is expected to meet the provisions of the Minister's Code: Undertaking Development in Bushfire Protection Areas, where appropriate and applicable.

#### **4.4 ENVIRONMENT PROTECTION ACT**

The proposed development involves activities of environmental significance, as defined in Schedule 1 of the *Environment Protection Act 1993*, as detailed below.

- Bulk Shipping Facility: the conduct of facilities for bulk handling of agricultural crop products, rock, ores, minerals, petroleum products or chemicals to and from any wharf or wharf side facility (including sea-port grain terminals), being facilities handling or capable of handling these materials into or from vessels at a rate exceeding 100 tonnes per day.
- Petroleum Production, Storage or Processing Works or Facilities: The conduct of works or facilities at which petroleum products are stored in tanks with a total storage capacity exceeding 2,000 cubic metres.

When proposals involve activities of major environmental significance the Governor, before making a decision on the proposed development, must have regard to the objects of the Act, the general environmental duty and any relevant environment protection policies. The objects of the Act are:

- *To promote the principles of ecologically sustainable development;*
- *To ensure that all reasonable and practicable measures are taken to protect, restore and enhance the quality of the environment having regard to the principles of ecologically*

*sustainable development, and to prevent, reduce, minimise and, where practicable, eliminate harm to the environment.*

In addition, proper weight should be given to both long and short term economic, environmental, social and equity considerations in deciding all matters relating to environmental protection, restoration and enhancement. The Environment Protection Authority (EPA) is required to apply a precautionary approach to the assessment of risk of environmental harm and ensure that all aspects of environmental quality affected by pollution, and waste are considered in decisions relating to the environment.

The following Environment Protection Policies are applicable:

- *Environment Protection (Water Quality) Policy 2003.*
- *Environment Protection (Air Quality) Policy 1994.*
- *Environment Protection (Noise) Policy 2007.*
- *Environment Protection (Waste to Resources) Policy 2010.*
- *Environment Protection (National Pollutant Inventory) Policy 2008.*

The EPA's comments are summarised in Section 5 of this report.

## **4.5 OTHER MATTERS**

### **4.5.1 South Australia's Strategic Plan**

The Governor has regard to any other matters considered relevant. In this context, an assessment has been carried out with reference to the State Strategic Plan. The State Strategic Plan (Government of South Australia 2011) seeks to widen opportunities for all South Australians through the pursuit of seven strategic objectives:

- Premium Food and Wine from our Clean Environment.
- Growing Advanced Manufacturing.
- Realising the Benefits of the Mining Boom.
- Creating a Vibrant City.
- Safe Communities, Healthy Neighbourhoods.
- Every Chance for Every Child.
- An Affordable Place to Live.

As stated in the PER (Section 3.3.1) the relevant targets in relation to the proposed development of Port Spencer are:

- *Target 37: Increase the value of South Australia's export income to \$AUD25 billion by 2020.*

- *Target 41: Exploration expenditure in South Australia to be maintained in excess of \$AUD 200 million per annum until 2015.*
- *Target 42: Increase the value of minerals production and processing to \$AUD 10 billion by 2020).*

Development of the Port Spencer proposal supports a number of the objectives. In terms of growing prosperity, the priority of the Strategic Plan is sustained economic growth resulting in rising living standards, with all South Australians sharing in the benefits through more and better job opportunities and access to quality services. The proposal (if approved) would result in new facilities for the shipping of mineral products and grain. In addition the increased workforce base (both construction and ongoing) would have a positive impact on support industries and the general economic well-being of the region. On this basis, the proposal is consistent with the Strategic Plan aim of growing prosperity.

The Strategic Plan also deals with building communities through the maintenance and development of viable regional population levels and reduction of unemployment rates. The establishment of the proposed commercial facilities (and eventual workers accommodation) would assist in maintaining regional population levels in the area and as indicated above increase jobs in the area.

The establishment of the Port would assist in improving the targets by increasing the value of mineral production and exports in the Eyre Region. This would be the first port constructed in South Australia for many years.

It is concluded that the proposed development is consistent with the thrust of the State Strategic Plan. Likewise the proposed development supports the thrust of the *Regional Plan of the Eyre Peninsula*, which is included in the Strategic Infrastructure Plan for South Australia 2004/5-2014/15.

## **4.6 OTHER RELEVANT LEGISLATION**

### **4.6.1 Harbors and Navigation Act**

The *Harbors and Navigation Act 1993* applies to coastal and inland waters of the State and has relevance for the proposal in regard to the provision of boating facilities and the management of boating activities (especially navigation, safety and pollution control). The government agency responsible for administering the Act, the Department for Planning, Transport & Infrastructure (DPTI), has considerable experience in design matters for port facilities and shipping activities and would be responsible for auditing certification processes for such structures on behalf of the Governor (or its delegate).

In addition, prior to the use of the facility for shipping purposes, the Port would need to be defined under the *Harbors and Navigation Act 1993* as a harbor and a port, and the proponent would be required to enter into a port operating agreement with the Minister for Transport and Infrastructure. The port may be a compulsory pilotage area. Usage of the name 'Port Spencer' would also be subject to formal approval, pursuant to the *Geographical Names Act 1991*.

The proponent would need to ensure satisfactory oil spill and fire fighting facilities and contingencies are in place prior to operation of the port, having regard to the South Australian Marine Spill Contingency Action Plan and the *Pollution of Waters by Oil and Noxious*

*Substances Act 1987*. In addition, the proponent would need to comply with the MARPOL (Convention for the Prevention of Pollution from Ships) requirements. Consultation with the EPA would need to be undertaken to address pollution and waste management requirements.

As foreign vessels would use the facility, then compliance would be required with the Australian Quarantine Inspection Service (AQIS) and Australian Customs Service.

Whilst the general design of the port is consistent with these requirements, further consultation with the Department for Planning, Transport & Infrastructure, which administers the *Harbors and Navigation Act 1993*, would need to be undertaken to address these aspects at the detailed design stage.

#### **4.6.2 Native Vegetation Act**

Under the Regulations of the *Native Vegetation Act 1991* the proponent is exempt from the requirement to obtain approval for vegetation clearance if the proposal has been the subject of a PER and the comments of the Native Vegetation Council (NVC) on the PER are included in the relevant Assessment Report. The NVC has been formally consulted and its comments have been considered in the preparation of this report. No statutory approval for vegetation clearance is required from the NVC, although suitable offset provisions for such clearance needs to be to the satisfaction of the NVC.

Under Regulation 5(1)(c) of the Native Vegetation Regulations, native vegetation may, subject to any other Act or law to the contrary, be cleared if-

- (i) *the clearance is incidental to a proposed development to which section 48 of the Development Act 1993 (the Major Developments Process) applies; and*
- (ii) *an environmental impact statement, public environmental report or development report; and an Assessment Report, relating to the development have been prepared under that Act; and*
- (iii) *the Minister responsible for the administration of the Development Act 1993 referred the environmental impact statement, public environmental report or development report to the Native Vegetation Council for comment and report and –*
  - (a) *the Council provided comments which were included (wholly or substantially) in the relevant Assessment Report; or*
  - (b) *the Council failed to provide comments within 8 weeks after receiving the Minister’s invitation for comment and report; and*
- (iv) *the Governor has granted his or her consent to the proposed development under section 49 of the Development Act 1993; and*
- (v) *the clearance is undertaken in accordance with that consent; and*
- (vi) *the clearance is undertaken in accordance with a management plan that has been approved by the Council that results in a significant environmental benefit on the property where the development is being undertaken, or the owner of the land (or a person acting on his or her behalf) has, on application to the Council to proceed with clearing the vegetation in accordance with this provision, made a payment into the Fund of an amount considered by the Council to be sufficient to achieve a significant environmental benefit in the manner contemplated by section 21(6) of the Act.*

The Act also includes within the definition of native vegetation, native plants growing “in or under waters of the sea” where the “waters of the sea” includes “any water that is subject to the ebb and flow of the tide”.

Accordingly, if the Governor approves the development, the proponent will need to negotiate with the NVC a suitable form of compensation in the form of a Significant Environmental Benefit (SEB), prior to the clearance or modification of native vegetation in the development area. In the event that the project is approved the applicant will need to seek direction from the Council on how to achieve the required SEB.

#### **4.6.3 Aboriginal Heritage Act**

The Aboriginal Affairs and Reconciliation Division (AARD) of the Department of Premier and Cabinet (DPC), which administers the *Aboriginal Heritage Act 1988*, requires that in the event archaeological items are uncovered during earthmoving, it be contacted immediately. The proponent would need to ensure construction contractors are aware of this requirement.

The proponent would need to consult with appropriate representatives of the relevant Aboriginal Groups in regard to any known sites of significance in the area and any native Title Claims over the sea bed and subjacent land.

#### **4.6.4 Natural Resources Management Act**

The *Natural Resource Management (NRM) Act 2004* seeks the sustainable and integrated management of the State’s natural resources and make provision for the protection of the State’s natural resources.

The PER acknowledged that the Natural Resource Management legislation is of relevance to this proposal in that it incorporates laws relating to animal and plant control. However, the NRM Act has a wider remit to facilitate integrated and sustainable natural resource management. The proponent would need to consult with the Eyre Peninsula NRM Board over arrangements to manage water and the land, including minimising the risk of spreading weeds during works, which would need to be incorporated into proposed construction and operational Environmental Management and Monitoring Plans (EMMP’s)

#### **4.6.5 Commonwealth Environment Protection & Biodiversity Conservation Act**

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), came into operation on 16 July 2000. The Act establishes an environmental assessment and approval system based on matters of national environmental significance that is separate and distinct from State systems. The Act enables proponents to seek a determination from the Commonwealth Environment Minister regarding whether or not their action is a ‘controlled action’ and therefore, subject generally, to Commonwealth assessment and approval processes.

The proponent submitted a referral form, with the relevant details on the likely impacts of the proposal, to Australian Government Department of Sustainability, Environment, Water, Population & Communities (SEWPaC) on 17 October 2012 for a determination as to whether the EPBC Act applied.

The Commonwealth Minister for Sustainability, Environment, Water, Population and Communities determined the proposal to be a ‘controlled action’, under Section 75 of the Act, due

to potential impacts on the Southern Right Whale (*Eubalaena australis*) and the Fairy Tern (*Sternula nereis nereis*). The controlled action requires assessment by 'Preliminary Documentation', with the proponent needing to provide additional information on these matters, prior to public consultation and decision-making by the Commonwealth Minister.

## **5 CONSULTATION**

The PER was placed on exhibition from 9 March to 27 April 2012, with a total of 13 submissions received. The proponent's Response Document addressed all the comments made in submissions, with a copy of each submission provided as an appendix the document.

### **5.1 PUBLIC**

Three submissions were received from the public, including one from a non-Government organisation (Tumby Bay Residents and Ratepayers Association Inc.). The main issues raised in public submissions included:

#### **Economic**

- Economic viability of the Port and related mining projects.
- The speculative possibility of the Port catering for commercial third party access.
- The cost benefit analysis of transport route options was requested and the likely costs to the State and local councils.
- Discrepancy in figures for Free Eyre grain output.
- Why a wind farm option was not looked at and the cost benefit analysis of solar array was not provided.
- Impacts on fishing and aquaculture in the area.

#### **Social**

- Inadequate community profile of the area (including profile of the work skills, family makeup etc associated with the Port).
- Whether there was adequate education facilities for families associated with the anticipated work force and steps needed to mitigate this.
- Further information on the likelihood of fly in/fly out potential at the Tumby Bay Airfield.
- Lack of consultation with the Indigenous community.
- Native Title does not appear to have been addressed.
- A social and demographic impact statement is required for the influx of workers to the construction village.
- Concerns were raised limiting or revoking access to Rogers Beach.
- The impact on vistas from tourist spots (i.e. Lipson Cove).

#### **Environmental**

- Potential for ballast water to be contaminated.
- Additional control locations for water sampling and marine sediment chemistry should be provided in the aquaculture areas and the marine parks to allow for adequate monitoring.
- Lack of discussion on emergency response capacity of Tumby Bay in relation to the Port.
- Need to precisely identify what imports would be associated with the port and the measures to prevent cross contamination.
- Light pollution impact on Lipson Island was not considered.
- Port Management Plan should include those relevant measures indicated in Appendix K.

- Impact and protection of areas of environmental significance within the locality and, as such, should be referred under the EPBC Act.
- Lack of information on the location of the desalination plant (technical information and the impact from salinity concentration levels on marine life and vessel stabilisation).
- Diesel emission assessment should be undertaken as part of occupational safety requirements, due to potential health hazards.
- The environmental footprint extends further from the site and has not been taken into consideration.
- The potential for hematite dust to cause environmental, economic and health impacts.
- Noise impacts on residences, due to heavy vehicle movements from the mines to the port and the extent of the noise survey (whether adequate and whether the noise modelling and performance targets taken into account).
- Impact of heavy vehicle transport/noise/dust on other users (e.g. school buses, communities) not been taken into account.
- Lack of discussion on other site alternatives.
- Shipping lane needs to be disclosed.
- Potential impacts to the nearby marine park at Lipson Island Conservation Park
- Native vegetation needs to be considered and protected.
- Inconsistencies of climatic data (especially lack of site specific data).
- Traffic survey did not take into account peak periods of use from existing uses (e.g. grain harvesting and holiday times).
- The potential for use of triple road trains.
- Queried the potential risk of import and export of marine pests into the local marine conservation parks and aquaculture areas.
- The use of onshore explosives and the impacts on existing buildings around the Port, on wildlife on Lipson Island and on private property at Tumby Bay. The PER does not discuss the use of explosives in the marine environment.
- Whether the unloading of docks was open ended or fully enclosed.
- The adequacy of fuel and chemicals storage.
- That diesel generator fuel consumption figures (in context with the operation of the development) should have been provided to determine the greenhouse gas footprint for the Port.
- Further investigations on marine mammals needs to be undertaken.
- Need for oil spill response preparedness/management.
- Questions whether Port approval means mine approval.
- Potential of construction and operational impacts.

## **5.2 COUNCIL**

The District Council of Tumby Bay lodged a letter in support of the proposal.

## **5.3 GOVERNMENT**

A detailed summary of the key comments provided by Government Agencies is included below:

### **Environment Protection Authority**

- Marine ecology and water monitoring.

- Need for a definitive statement that site contamination does not pose a risk to human health.
- More conservative modelling needed on potential air quality.
- Additional data required to complete the baseline for marine and intertidal assessment.
- Seeks input into the Construction Environment Management and Monitoring Plan (CEMMP) and the Operational Management and Monitoring Plan (OMMP).
- An access road management and maintenance plan needs to be developed to minimise generated dust at the site.
- Additional seasonal data is required for the baseline for the marine and intertidal assessment.
- Air quality needs to be monitored around the Port (especially for PM10 and PM25 levels), including predicted impacts and performance criteria.
- The CEMP needs to include a marine mammal exclusion zone and a safety observation zone.
- Chlorophyll and soluble iron background concentration in the water need to be established for monitoring purposes.

**Department of Environment and Natural Resources (now Department of Environment, Water and Natural Resources)**

- Clarification required as to the native flora present on Lipson Island.
- Recognition that Lipson Island is a biodiversity hot spot.
- Queried why Baited Remote Underwater Video (BRUV) had not been used as part of the survey methodology in determining species identification.
- Need to contact SARDI for a species list for benthic in-fauna as the list in the PER is limited.
- Requests levels to AHD on drawings for all structures.
- Request to participate in the Construction Environment Management and Monitoring Plan (CEMMP) and the Operational Management and Monitoring Plan (OMMP).
- There needs to be more detail regarding the type of monitoring program for sediment deposition in the project area.
- Incorrect allotment numbers, boundaries and size of Crown coastal reserve.
- Incorrect use of 2005 mining SEB guidelines (need to use NVC 2007 policy and methodologies).
- If dredging is required, then more information needs to be submitted by the proponent.
- The proponent needs to liaise with the relevant land managers and relevant agencies.
- Comments on Rogers Beach being a public beach accessible through private land incorrect (not a private beach as stated in the PER).
- Patina Conservation Park is northwest of the site (not northeast).

**Department for Water (now Department of Environment, Water and Natural Resources)**

- The Environment Management and Monitoring Plan (EMMP) and Environmental Management System should include the construction, operational and decommissioning stages of the project life cycle.
- Clear definition of terms surface water, stormwater, catchment and site catchment need to be provided throughout the document.
- The EMMP should include regular monitoring and maintenance of the diversion channel and stormwater drainage systems so they remain fit for purpose.

- Baseline monitoring should be included on the site of pre-development of water quality, quantity and surface discharge, with ongoing monitoring to determine impacts to the site and surrounds.
- Excavation of the diversion channel should not extend within 2 metres of the depth of groundwater.

### **Zero Waste**

- No comment

### **SA Tourism Commission**

- Supported the development as a contribution to the management of mining related heavy vehicle movements on Eyre Peninsula.

### **Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE)**

- That the development supports Targets 37 and 42 of South Australia's Strategic Plan and provides potential economic benefit to the State and Regional economies.
- Supports the proposal as both a vital export solution for Centrex and a catalyst for other major resource developments on the Eyre Peninsula.

### **Primary Industries and Regions SA (PIRSA)**

- Questions the potential loss of shore fishing access for recreational fishing and for commercial Marine Scale-fish, Spencer Gulf Prawn and Blue Crab Fishery, due to the development.
- The shipping lane needs to consider the Tumby Bay aquaculture zone.
- Retention of staff in the fishing industries would be impacted upon by the development.
- Monitoring programs for marine ecology are not clear, including frequency of monitoring and its relationship to risk assessment.

### **Department of Planning, Transport and Infrastructure**

- That over dimensional, over mass or special vehicle movements require permits from DPTI.
- The proposed development will require DPTI participation in transport route selection and management.
- A Port Operating Agreement will be required and will need to be negotiated between the Port Operator and the Minister for Transport. A risk assessment plan, emergency plan, maritime security plans and rule books may also be required.
- A hydrographic survey will need to be undertaken to demonstrate the Port facility is adequate for deep sea vessels. This will also see whether dredging is required. Plan drawings of Port Spencer are required to be submitted to the Hydrographer of the Navy so they can be inserted into navigation charts.

### **Australian Maritime Safety Authority (AMSA)**

- The provision of waste reception facilities do not appear to have been considered at the Port. Adequate waste reception facilities for ships are of major significance as waste cannot be discharged at sea. New regulations are effective January 2013 and the Port will need to comply.

### **Eyre Peninsula Natural Resources Management Board**

- The submission raised issues the same as those raised by the Department of Environment and Natural Resources.
- Marine mammal collision potential if vessels are travelling through marine parks. Specifics need to be detailed as to the particular travelling route and what parks are affected.

## **5.4 RESPONSE DOCUMENT**

It is considered that the Response document comprehensively addressed all comments and concerns raised in public and government agency submissions related to Stage 1 proposal. In particular, additional information and clarification was provided on the following aspects:

- alternative port location options
- vessel anchoring points and shipping routes
- marine spills
- road transport requirements and impacts from the mine site to the port facility
- making a referral in relation to the Commonwealth EPBC Act

Other matters related to the proposal beyond Stage 1 were also responded to, in order to clarify how they relate to this assessment and the project overall.

## 6 ASSESSMENT OF THE MAIN ISSUES

The need for a deep water port facility on eastern Eyre Peninsula is a critical requirement for the development of the region's mining potential, particularly for the bulk export of iron ore. The region's agricultural industry would also benefit from the establishment of an alternative grain storage and shipment facility. The proposed site is strategically located and is on part of the coast that has not been identified as being important for conservation (i.e. avoids existing or prospective marine protected areas) or aquaculture/fishing (i.e. avoids existing or prospective Aquaculture Zones). The facility will not only have substantial employment and economic benefits during construction and operation, but will have regional benefits through the facilitation of mineral resource development. There would also be indirect benefits for local and regional economies through the multiplier effect. Road upgrades would be required to ensure road safety and efficient traffic movements.

The construction of a deep water port facility at "Sheep Hill" will establish an industrial land-use on a stretch of the coast that is predominantly natural/pristine in character (apart from the coastal towns of Tumbay Bay, Port Neill and Cowell). This will impose a level of human disturbance and activity on an area that is relatively undisturbed and quiet. The jetty structure (as associated vessel movements) will be a permanent, prominent feature of the coastal landscape. Vessel movements and loading activities will be a long-term disturbance factor for the coastal and marine environment, with the greatest environmental risk being the potential for a fuel/oil spill. Increased activity (especially noise, vehicle movements and light spill at night) would affect the amenity and recreational value of the nearby Lipson Cove.

A number of public submissions on the PER expressed views that the PER should address all potential users of the Port (especially transport issues for grain and other minerals), the construction workers village and the Centrex mines. It should be noted that this assessment addresses the impacts and implications of Stage 1 only, comprising the Port facility and the transport of ore from the mine site. The proposed Stage 2 will be the subject of a separate assessment. Whilst initially identified in the PER, a rail line to the Port does not form part of the proposal. This was accommodated on the plans in a conceptual manner to ensure it could be catered for in the future (if proposed by another party).

The proponent intends to develop a multi-use port, that primarily caters for the export of its ore. It would be a private port, rather than a public port. However, other users may wish to build their own facilities (i.e. on land leased from Centrex). Whilst grain storage and loading forms part of the proposal, the suitability of the site for grain facilities is only being assessed from a conceptual perspective (i.e. as a suitable change in land use). Centrex has entered into a partnership with Free Eyre Ltd to investigate the option of establishing grain export infrastructure at the Port. If considered viable, then Free Eyre Ltd would need to seek the capital and any other detailed approvals necessary to build such facilities. The same would apply for other mining companies that may wish to build similar facilities on the site. Infrastructure requirements, access, visual effects and hazards/risks associated with such uses are broadly addressed in this report (and are expected to be similar to those that apply to the Port proposal).

It is considered that the PER provided a comprehensive description of the proposal, the character of the receiving environment and surrounding region (physical, biological, social and economic aspects). Adequate investigations have been undertaken to predict the potential impacts that could arise from the proposal. In particular, the PER (Section 7.3) detailed satisfactory mitigation measures that would be implemented to avoid, minimise and manage any adverse

effects from the development (if approved). Suitable monitoring programs would be established to measure the effectiveness of mitigation measures.

## **6.1 NEED FOR THE PROPOSAL**

The PER (Section 2) described why the proposal is needed, the benefits of the proposal and potential alternatives (including the ‘Do Nothing’ option).

### **6.1.1 Justification**

The PER (Sections 2.1 – 2.3) detailed the project objectives, justification for the project and the implications of not proceeding with the proposal. Reasons why a port facility is needed were stated as:

- To provide an export route to market for Centrex’s hematite and magnetite products arising from proposed mine developments of Eyre Peninsula.
- To develop a socially acceptable, environmentally responsible and economically viable export route to market for Centrex related mining products.
- To provide for a multi-user port option for third party iron ore and other export products from the Eyre Peninsula (with grain the main secondary product).
- To positively contribute to the economic development of the Eyre Peninsula.

Due to increasing world demand for iron ore (primarily for steel making in Asia), the volume of mineral exports from Australia has substantially grown each year, with mineral resources on Eyre Peninsula attracting significant investment in exploration. Several companies now hold numerous mineral tenements in the region, with Centrex having extensive tenement holdings (over 20 deposits/prospects covering an area of 2,000 km<sup>2</sup>). However, there is a need for a deep water port facility on the central Eyre Peninsula coast for this export potential to be realised. The viability of the Port requires the development of at least one of Centrex’s magnetite projects. Port operation will commence with the direct shipment of hematite ore (i.e. without the need for beneficiation or processing) to provide an early financial return. The proposal provides a significant regional opportunity to develop an alternative port and shipping option to other ports in the Gulf (particularly Port Lincoln), and a localised option for the southern and mid –regions of Eyre Peninsula, providing efficient transport and shipping of ore.

A number of the public submissions expressed views that a ‘whole-of-project’ approach to assessment was necessary to ensure viability of the port (esp. to include prospective mines). It was considered that a port facility should not be approved if the demand for the facility was not a certainty (i.e. export product availability). The staged approach was also questioned.

It is considered appropriate that the assessment of proposed mines be processed under the *Mining Act 1971*, rather than the *Development Act 1993*. It should be noted that Centrex have an approved Mining Lease for the Wilgerup haematite deposit that would supply the Port. The proponent has indicated that if the Port is approved, then construction is unlikely to commence until further mines have been approved.

In response to submissions, the RD (Section 4.1) provided a more detailed description of the proposed shipping lanes and anchoring points. In particular, ships accessing the port would follow a pathway that avoids the Sir Joseph Banks Group Marina Park boundary. Vessels would access the Spencer Gulf main shipping lane to enter/exit the gulf. A bathymetric survey has

identified a suitable anchoring area located 6km offshore. A seabed survey would be undertaken to determine suitability for Cape Class vessel anchors.

### **6.1.2 Alternative Sites**

A number of public submissions considered that the PER did not investigate a wide enough range of alternatives to the proposed site. In particular, a potential site 7 km to the north at Cape Hardy was viewed as being more suitable, as it was significantly further way from Lipson Cove and would still provide deep water access.

In response to submissions, the RD (Section 2.3) further considered the advantages and disadvantages of the proposed site, compared with others in the region (including Cape Hardy, sites on eastern Eyre Peninsula, Lucky Bay, existing ports in the upper Spencer Gulf and the Port of Darwin). The proposed site was still considered the most suitable due to a number of factors, including:

- distance from Centrex mines and infrastructure required to transport ore to the port
- water depth to accommodate Cape Class vessels (including loading capacity, loading times and flexibility compared with Panamax sized vessels)
- site topography
- environmental and social impacts
- infrastructure requirements (including road accessibility)

## **6.2 ENVIRONMENTAL ISSUES**

An industrial type of development such as port facility has the potential to have a number of impacts on the surrounding environment including:

- Effects from construction activities, especially land disturbance from earthworks (vegetation clearance, soil erosion and dust), destruction and disturbance of terrestrial/marine habitat and fauna species, noise and increased heavy vehicle traffic.
- The establishment of a site on the coast in a rural landscape where there will be a high level of human activity and potential disturbance (i.e. compared with the current levels).
- The establishment of a prominent visual feature on the landscape (especially the jetty structure on the coast).
- Risk of pollution (especially fuel/oil spills from vessels).
- The introduction and/or spread of pest or nuisance plants and animals (particularly marine pest species).
- Disruption to local farming communities during construction and operation.
- Reduced amenity and recreational/tourism values of coast (especially local beaches)

The establishment of an export port would also lead to regular shipping movements to and from the facility, including the need for offshore anchoring points. Vessels accessing the port would also increase the volume of current shipping traffic moving into the Spencer Gulf, using the existing shipping channel. Shipping traffic would also increase along the export route from the Gulf to Asian ports, including passing through the Great Australian Bight Marine Park.

The proposed site lies on the coast, with the land based facilities positioned within the base of a gentle valley. The jetty structure starts on a rocky headland and extends out 500 metres into Spencer Gulf. The subject land is used for farming, being cleared of native vegetation and

dominated by pasture and weed species. The local area has a low population density, comprising farming holdings, with the nearest resident being 500m from the site boundary.

The stretch of the coast in this locality is relatively natural/pristine and is generally free from human disturbance. There is generally low accessibility to public, due to most of the coast being private land used for farming and a lack of public roads that lead to the coast. The area is generally quiet, apart from farming activities. In close proximity to the site, Lipson Cove is used for recreation (inc. semi-formal camping) and tourism.

The proposed site is located on part of the coastline that is not within a marine park, aquaculture zone, commercial fishing ground or other important conservation or economic area. The Sir Joseph Banks Marine Park lies 5km south of the site and also includes the Lipson Island Conservation Park (listed on the Register of the National Estate), which lies 1km to the south. The Port Neill Aquaculture Zone lies approximately 10 kms to the north.

### **6.2.1 Coastal Environment**

The coastal environment is characterised by small rocky headlands separated by small sandy beaches. The intertidal and coastal habitats are considered typical of those found along eastern Eyre Peninsula. The coastal strip has been highly modified by farming and remnant vegetation is predominantly restricted to the narrow coastal cliff top (comprising degraded low shrubland). Rogers Beach comprises tall open shrubland communities associated with the surrounding dunes and adjoining small drainage basin. This part of the site provides the only reasonable area of habitat, but would not be directly affected by the proposal. There are no other habitats, nor communities of particular conservation significance on the site. The site has a low level of public usage or recreational fishing pressure, except for locals and visitors to Lipson Cove.

### **Coastal Processes**

The proposal's coastal location, being within the relatively sheltered embayment of the Spencer Gulf, is subject to low - moderate wave energy. The dominant currents are tidal driven and most waves are generated by winds from the south-east. The seabed drops away to deep water within a short distance from the shoreline. The site is not subject to any substantial longshore drift of sand that could be affected by the establishment of a jetty structure. Thus, local beaches would not be detrimentally affected by any changes to natural sand loss or accretion rates.

The wave and current characteristics of the site would provide regular flushing of the site (especially after dudge tide periods) to ensure any localised turbidity or minor spills (such as ore, grain or hydrocarbons) would be diluted and dispersed.

The rocky headland and the seabed would be affected during construction due to earthworks. Approximately 20 metres depth of rock at the highest point of the top of the headland would be removed (through rock breaking and limited blasting) and the piles for the jetty would be driven into the substrate and rocky base. Jetty construction could result in the disturbance of marine sediment and turbidity, which would be controlled by the use of silt curtains. During operation, the jetty structure would only result in minor, localised changes to water circulation patterns that would not affect the profile of local beaches.

The PER (Appendix L) and RD (Section 6.2.8) stated that a monitoring program for marine sediment transport would be developed, in consultation with regulators, and implemented prior to

construction. The Department of Environment, Water and Natural Resources (DEWNR) advised that such a program should also address sediment (sand) management strategies (i.e. if required as a result of monitoring). Thus, a Beach Profile Monitoring and Sediment Management Plan should be prepared, in consultation with DEWNR and the Coast Protection Board, and incorporated into Environmental Management and Monitoring Plans.

### **Rogers Beach**

Rogers Beach comprises a beach/dune system, with a small swamp behind dunes that is the discharge point for drainage from the local catchment. The beach is used for public recreation, but at low levels, due to public access not being clearly defined or well known (i.e. perceived to be on private property). The beach is relatively natural/pristine and supports a pair of Hooded Plovers (a threatened species in decline). The dunes also contain sites of Aboriginal heritage significance.

There is the potential for increased use of the beach by workers/staff and greater access by the public (via new access road) that could increase the use, and hence level of disturbance, of the beach.

A beach profile monitoring site would need to be established to measure whether the jetty has any effect on natural sand movements. This should be addressed in a Beach Profile Monitoring and Sediment Management Plan. The possible inland migration of the dunes, due to sea level rise/storm surge, would also need to be monitored. In addition, due to encroachment of the development, the small drainage basin swap may need to be artificially expanded and revegetated to sufficiently handle run-off.

The beach is not part of the development site and it is proposed to establish an exclusion zone around the beach. A new public road would be established to maintain access to the beach. However, this road terminates at the site boundary and it uncertain how the road would link with the beach (or how parking would be managed). Thus if the Port is approved, a Management and Monitoring Plan for Rogers Beach should be prepared, in consultation with the District Council of Tumby Bay, the Department of Environment, Water and Natural Resources and the Eyre Peninsula Natural Resources Management Board (especially to address access/parking, camping, environmental protection, erosion, weeds/pests, rubbish and the need for educational signage).

### **Lipson Cove and Lipson Island**

Lipson Cove and Lipson Island are located 1km south of the site (1.5km from the jetty) and comprise a natural sandy beach between rocky headlands, with a small intertidal island. The surrounding area has been cleared for agriculture and only the fore dunes remain. Council has designated the area for semi-formal camping, recreation and tourism.

Lipson Island is a designated Conservation Park due to its value as a bird rookery/roosting and breeding site, especially for several species of conservation significance (including the Little Penguin).

Lipson Cove and Lipson Island would not be directly affected by the proposal, although being within close proximity of the site means the area may to be affected by disturbance during construction and operation. In particular, the presence of human activity may deter fauna species that inhabit the island from feeding around the immediate vicinity of the port facility. Any loud,

sudden noises from land based blasting/rock breaking or marine based impact piling during construction may disturb fauna (including short term habitat displacement if severe enough). Monitoring would need to be undertaken to determine whether any disturbance is significant enough to affect resident populations. It is noted that the local Little Penguin is a species with an overall declining population in South Australia and as such, may be susceptible to any changes to the surrounding environment.

Any substantial oil or chemical spill at the port site could have a significant effect on individual animals, their habitat or their food sources. Thus, suitable design and management measures would need to be adopted to minimise spill risk. Contingencies for the control and mitigation of any spill would also need to be put in place. In particular, a spill kit may need to be stationed at Lipson Cove for ready deployment in the event of a spill to protect the island.

Due to the conservation significance of the Lipson Island Conservation Park, it is considered that a monitoring program would need to be prepared and implemented to measure any detrimental impact the port facility may have on associated terrestrial and marine ecosystems. The collection of such data would also be beneficial for identifying any potential impacts on the Sanctuary Zone of the Sir Joseph Banks Group Marine Park.

In conclusion, it is unlikely that the conservation value of Lipson Island (and status of the Conservation Park) would be detrimentally affected in the long term by the proposal, except if a substantial oil spill was not adequately controlled.

## **6.2.2 Marine Environment**

### **Marine Ecosystems**

The local marine environment includes sub-tidal and benthic communities, comprising habitat and species typically found along eastern Eyre Peninsula and the lower Spencer Gulf. These communities are relatively natural/pristine, with no marine pest species recorded. Only low levels of boating and fishing activities occur (both recreational and commercial), especially given there are no boat ramps or aquaculture operations nearby. Within the immediate vicinity of the site there are no areas high conservation value, such as biodiversity 'hotspots', seabird/migratory wader habitat or marine mammal breeding or haul out sites. Whilst there have been conservation listed species recorded for or near the site, these species are generally transitory (i.e. using the area as part of a wider foraging/feeding territory, as passage through to other key habitats in the region or along a migratory pathway).

The nearby Lipson Cove and Island is the closest key biodiversity area to the site. The island provides an important bird rookery and a foraging site for raptors (including the White-bellied Sea-eagle and Eastern Osprey) and pinnepeds (the Australian Sea-lion and New Zealand Fur-seal). The sheltered waters of the bay are occasionally used by dolphins and the Southern Right Whale.

During construction and operation, a substantial increase in human activity and disturbance may cause modifications to fauna behaviour (primarily, avoidance of the area). Some species/individuals may adapt to the changed environment or benefit from it (such as 'artificial' reef communities colonising the jetty structure). The PER (Section 6.11.1.7) considered that marine species may be affected by pile driving activities (i.e. noise, vibration and sonic waves) up to 500 m from the site.

During operation, the jetty and berthed vessels could lead to a minor loss of habitat (or loss of condition) from shading, increased sedimentation, altered hydrodynamic conditions and noise). Regular use of the area by large vessels would also present a potential risk of a substantial fuel/oil spill. The introduction of regular shipping activities by vessels from foreign ports will present a risk of marine pest species becoming established and potentially spreading, which could have a detrimental effect on local and regional ecosystems if not adequately monitored and controlled.

## **Water Quality**

### *Run-off*

The existing marine environment has water quality that is relatively natural/pristine, except possibly for low levels of contaminants associated with sediment, nutrients and chemicals contained in run-off from agricultural land. The gentle valley within which the proposal is located drains through the site and discharges to Rogers Beach, via a vegetated clay basin behind the dunes/beach. The establishment of large areas of hard surfaces (including buildings and the sealing of Swaffers Road) and fuel/chemical storages has the potential to substantially increase the amount of run-off and contaminants discharged to the marine environment, that could affect marine water if not appropriately managed. A chemical or fuel leak or spill could also find its way into the local drainage system. The proposed stormwater management strategy (refer to Section 6.2.8) provides adequate measures to maintain the natural hydrology and to ensure any contaminated run-off does not affect marine water quality.

### *Accidental Spills/Leaks*

The establishment of an ore and grain loading jetty for large vessels introduces a risk to the marine environment from accidental spillage of products or a spill of hydrocarbons that could affect water quality. This could range from a long term impact from regular small spills to a catastrophic event where a major fuel/oil spill occurs. A long term accumulation of pollutants could also result from small leaks from vessels or the leaching of anti-foulant paints (such as tributyl tin).

Whilst the risk of a substantial fuel/oil spill has been predicted to be low, it is risk nonetheless that could have a significant impact on the marine environment. Although the Spencer Gulf is a sheltered embayment, there is a probability than a spill could occur due to weather conditions and/or human error/mechanical failure. In 1992 a major spill occurred in the top of the Gulf at Port Bonython that caused significant damage to the environment. The fuel tank of the oil tanker *Era* was ruptured by the bow of a tug boat during berthing during high winds. Approximately 300 tonnes of bunker fuel was released that could not be fully controlled by dispersants and containment booms, due to high winds and unfavourable tides/currents. The RD (Section 4.2) states that a Cape Class vessel can carry up to 2,000 tonnes of fuel oil (although compartmentalisation may minimise spill risk).

The PER (Appendix K) considered that any spill or long-term (chronic) releases would eventually be broken down, removed from the environment by natural processes or diluted to levels below concentrations of concern. The potential for accidental releases of hydrocarbons from shipping activities was considered low. In addition, the shipping industry is regulated by

governments to ensure ship safety and environmental protection. The PER considered the potential for shipping accidents to be low.

The PER (Section 6.11.3) stated that the accidental release of iron ore into seawater would not result in increased phytoplankton growth (i.e. algal blooms) as the iron would be poorly soluble. In addition, the moderate energy of the coast would flush out any particulates and oxygenate marine waters, mitigating any adverse effects from releases of iron ore dust and small spills. The EPA expressed concern that in-situ marine water chlorophyll and soluble iron background concentrations had not been determined in the PER. The RD (Section 6.2.5) stated that background chlorophyll and iron levels would be established as part of an overall water quality monitoring program (including bi-monthly and 12 monthly data collection) at the site and reference sites, prior to the start of construction. This data would be collected as part of the water quality sampling program needed for a desalination plant, which is proposed to be part of Stage 2 of the Port project. Baseline chlorophyll and iron levels would need to be included in the proposed Maritime Water Quality Management Plan (which would be included in the EMMP's).

The PER (Section 6.11.4; Appendix K) did not investigate the impacts of grain spillage to the same extent as for iron ore. The introduction of fine organic matter into the marine environment is identified as potentially having a greater impact than the grain itself (such as decreased oxygen levels, increased suspended particulates and increased nutrients). Any impacts are predicted to be similar to those of other grain ports (eg. Wallaroo, Port Pirie and Port Lincoln) and unlikely to result in unacceptable environmental effects, given accidental spills would be readily minimised and mitigated.

### **Sir Joseph Banks Group Marine Park**

The northern boundary of the Sir Joseph Banks Group Marine Park is located 5 km south of the port site. The park includes a Sanctuary Zone on the landward part of the northern park boundary. The main risk to the park would be the potential for a significant fuel/oil spill (including the use of chemical dispersants to control a spill). It is considered that there is an adequate separation distance from the port to the Park to enable a spill to be adequately controlled to avoid it affecting the Park.

### **Off-site Impacts**

A vessel anchorage and Port access zone is proposed to be established 6 km off-shore from the site. The RD (Section 4.1) stated that two anchor points would be created, with a shipping lane 5 km from, and directly parallel with, the northern boundary of the Sir Joseph Banks Group Marine Park. A bathymetric survey was undertaken to determine suitability of the zone from a depth perspective. A hydrographic study of the seabed would be undertaken to ensure the anchorage zone and shipping lanes are obstruction free and suitable for Cape Class vessel anchoring. This would also need to include an environmental survey.

Vessels entering/leaving the anchorage zone would travel directly to the existing shipping lane in the middle of the Gulf. Vessels would avoid travelling through any Marine Park, Aquaculture Zone or commercial fishing ground.

The main issues associated with the anchorage zone and shipping lane are the risks of a fuel/oil spill and collision with marine mammals. The RD (Section 5.11.8) considered the species most at risk from vessel strike, due to their likelihood of regular occurrence, are the Southern Right

Whale, Bottlenose Dolphin and Common Dolphin. Collisions between cetaceans and all vessels have the potential to occur wherever there is an overlap between cetacean and boating activities. According to the International Whaling Commission (IWC), there have only been two records of ship strike in South Australia between 1953 and 2009. One was involved a Southern Right Whale near Cape Jervis (in 2001) and the other a Pygmy Right Whale near the Lincoln National Park (in 2008). Thus, the risk of vessel strike is expected to be very low.

In regard to the cumulative risk of increased shipping in the Gulf, the RD (Section 4.1.2) states that Stage 1 of the Port facility would result in an increase in shipping traffic of an additional 27 Panamax vessels per year (or 12 Cape Class vessels). Compared with the current volume of 267 vessels that travel the Gulf (from the ports at Port Bonython, Port Pirie, Wallaroo and Whyalla), this would contribute an increase of approximately 4.5% (Cape Class) – 10% (Panamax). Thus, the Port is unlikely to significantly increase the already low frequency of marine mammal collisions.

However, it should be recognised that most vessels strikes are likely to go unreported. The Australian Government, the IWC and the International Maritime Organisation are currently investigating management measures to further minimise this risk.

### **6.2.3 Native Vegetation Communities (Terrestrial and Marine)**

The proposed site has largely been cleared of native vegetation for agricultural purposes. Remnant vegetation is restricted to the narrow coastal strip, with the most significant stands associated with Rogers Beach. Most of the vegetation has limited habitat value, being dominated by weed species and affected by human disturbance. No threatened species have been recorded for the site. Offshore, the sandy substrate supports seagrass communities dominated by *Posidonia angustifolia* and *P. sinuosa* (Tapeweed). Closer to shore, these seagrass beds are mixed with *Amphibolus antarctica* (Wireweed). Around the headlands, shallow sub-tidal rocky reefs support macroalgal communities. Offshore vegetation communities are considered to be typical of those found along eastern Eyre Peninsula.

The PER (Section 5.9.2, 5.11.2 and Appendix K) provided an adequate, detailed description of the native vegetation communities and species for terrestrial and off-shore parts of the site.

#### **Terrestrial Vegetation**

The PER (Section 6.9.1.1) calculated that only 6.67 hectares (ha) of native vegetation would need to be cleared, comprising:

- 0.77 ha of Ruby Saltbush/Yanga Bush Low Shrubland on the coastal strip
- 2.01 ha of Dillon Bush Tall Shrubland on the claypan behind Rogers Beach
- 3.89 ha of scattered roadside vegetation along Swaffers Road

This small loss of native vegetation would be compensated for by establishing a suitable off-set through a Significant Environmental Benefit (SEB), as required under the *Native Vegetation Act 1991*. A total SEB area of 15.66 ha has been estimated as a requirement. An additional SEB area of 5.35 ha would be required to off-set marine vegetation clearance (refer to the Marine Vegetation Section below). The PER (Section 7.3.7.1) estimated a total SEB area of 21.02 ha and detailed measures proposed to achieve the off-set, including:

- Rehabilitation of the Low Shrubland cliff top community through revegetation and weed/pest control.
- Revegetation of the headland south of the jetty to re-establish Low Shrubland and Tussock Grassland communities, in addition to the re-establishment of Low Mallee vegetation along Lipson Cove Road.
- Possibly native vegetation management of the Rogers Beach area.

DEWNR advised that the proposed location of the off-set adjacent the proposed development area may compromise the ability to meet the objectives of an SEB, primarily the achievement of a 'significant environmental gain'. In particular, potential dust and pollution disturbance from on-going activities may inhibit the regeneration of native species. This would need to be addressed during negotiations with the Native Vegetation Council (if the proposal is approved).

The PER (Section 6.9.1.1) stated that a Native Vegetation Management Plan would be prepared to detail how rehabilitation, revegetation and weed/pest control would be undertaken.

### **Marine Vegetation**

Construction of the jetty structure would require minor clearance of seagrass and macroalgae communities around the piling footings. The PER (Section 6.11.1.1) conservatively estimated that 4,702 m<sup>2</sup> of seagrass meadow habitat and 1,930 m<sup>2</sup> of rocky reef habitat would be affected during construction. Additional impacts may also result from increased turbidity from pile driving and drilling activities, although this would be minimised through the use of silt curtains (or a deep water sediment disposal area). Off-sets for marine vegetation would be achieved through a terrestrial SEB, due to difficulties with revegetating marine communities. The PER (Section 7.3.7.1) estimated that a total SEB terrestrial off-set area of 5.35 hectares would be required.

It is considered that additional minor loss of seagrass and macroalgae may occur due to scouring (or 'blow-outs') around the pilings. Such minor levels of clearance would not have a significant effect on marine ecosystems and would be adequately compensated for by the proposed terrestrial off-sets.

### **6.2.4 Native Fauna Communities (Terrestrial and Marine)**

#### **Terrestrial/Coastal Fauna**

The PER (Section 6.9.1.3) identified that, during construction activities (especially vegetation clearing and earthworks) and traffic movements on Swaffers Road, individuals of fauna species may be injured or killed (particularly for less mobile species, such as lizards and frogs). Such loss from local population was stated as being of low significance.

Whilst there are no species of conservation significance recorded for the site, the loss of fauna during the operation could potentially reduce local biodiversity in the long-term (especially given existing low population numbers due to a lack of native habitat). Common species that make up 'road-kill' could also include birds and snakes. Injuries and mortalities of fauna would result from the transport of ore from the mine site.

The coastal headlands and beaches are likely to be used as part of the foraging range for raptor species, especially the Wedge-tailed Eagle, Peregrine Falcon (NPW Act – Rare species), White-bellied Sea-eagle (EPBC Act - Migratory species/NPW– Endangered) and Eastern Osprey (EPBC – Migratory & Marine/NPW - Endangered). The Fairy Tern (EPBC – Vulnerable & Marine/NPW - Endangered), Crested Tern (listed as Marine), Pacific Golden Plover (NPW – Rare) and Sooty Oystercatcher (NPW – Rare) may also use the coast for roosting and feeding. This small potential loss of feeding habitat is unlikely to have an effect on local or regional populations.

A pair of Hooded Plover (NPW - Vulnerable) is known to reside at Rogers Beach and are likely to be nesting there. The species is sensitive to human disturbance (including destruction of nests or mortality of chicks from vehicle movements) and predation from Silver Gulls (which breed at Lipson Island). Protection of this species would need to be addressed in a Management and Monitoring Plan for the beach.

Due to the potential occurrence of a number of threatened species in the area, it is considered that targeted monitoring of the wider environment should be undertaken to detect any impacts on terrestrial and coastal fauna. This would need to be addressed in the Environmental Management and Monitoring Plans.

## **Marine Fauna**

The proposed site and surrounding area does not provide critical or significant habitat for any threatened species. However, some species are likely to be transient and may pass through the site as part of a wider foraging territory or migration path. Species of conservation significance that are known to use the site, and may be affected in a minor way, include:

- Australian Sea-lion (EPBC Act listed Vulnerable species) – colony on islands of the Sir Joseph Island Banks Group and feeding range likely to extend to the site.
- Great White Shark (listed as Vulnerable) - common to the Gulf and may pass in the vicinity of the site (and through shipping channels).
- Southern Right Whale (listed as Endangered/Migratory) – occasional visitor to the Gulf and may pass in the vicinity of the site (and through shipping channels).
- Humpback Whale (listed as Vulnerable) – occasional visitor to the Gulf and may pass in the vicinity of the site (and through shipping channels)
- Blue Whale (listed as Endangered) – occasional visitor to the Gulf and may pass in the vicinity of the site (and through shipping channels).
- Green Turtle (listed as Vulnerable) – occasional visitor to the Gulf and may pass in the vicinity of the site (and through shipping channels).
- Leatherback Turtle (listed as Endangered) – occasional visitor to the Gulf and may pass in the vicinity of the site (and through shipping channels).
- Common Dolphin (listed as Marine) - common to the Gulf and may pass in the vicinity of the site (and through shipping channels).
- Indian Ocean Bottlenose Dolphin (listed as Marine) - common to the Gulf and may pass in the vicinity of the site (and through shipping channels).
- Bottlenose Dolphin (listed as Migratory) - common to the Gulf and may pass in the vicinity of the site (and through shipping channels).

The Little Penguin (listed as Marine) and White-bellied Sea-eagle (and possibly Fairy Tern and Eastern Osprey) also use the marine waters for feeding.

The PER (Section 6.11.1.4) identified that direct mortality of individuals of marine fauna may occur directly beneath where jetty piles are installed (especially sessile or slow moving species). The small area of disturbance is likely to have a minor impact on marine fauna during construction.

Underwater noise during construction would result from pile driving (pulsed sound/shock waves from impact and vibration) and pile drilling (continuous sound), which may result in physical and/or behavioural effects on sensitive fish and marine mammal species. The subject locality would have low level of background noise, due to an absence of significant noise sources. Thus, any substantial increase in noise levels would be more pronounced. Pile driving activities could generate high levels of underwater noise that has the potential to result in mortality or injury to some fish up to 500m from the source (especially reef fish). The PER (Section 6.11.1.7; Appendix G) included underwater noise modelling that indicated impact pile driving would have the greatest effect on some fish (injury or mortality) at distances up to 470m. However, it was anticipated this localised impact would have no effects at the population level.

Marine mammals may be more sensitive due to their use of underwater noise for communication and echolocation. Based on modelling, it was predicted that impact pile driving, vibration pile driving and pile drilling could result in physical injury or behavioural changes to marine mammals within close range of the source (i.e. up to 30 m, 50 m and 25 m respectively). In particular, Southern Right Whales are transient in the region and could be susceptible to pile driving activities. This could temporarily affect distribution, migration and behavioural patterns during the construction period. Other marine mammals (especially pinnepeds and cetaceans) are likely to avoid the site during construction periods. This is expected to have a minor effect on populations as the site does not provide critical habitat for marine mammals. The PER (Section 7.3.10) states that pile driving impacts on marine mammals would be addressed in the Construction Environmental Management and Monitoring Plan (CEMMP) and describes a range of 'best management practice' and 'best available technology economically achievable' measures that could be adopted.

*Underwater Piling Noise Guidelines* (Department of Transport, Energy & Infrastructure, 2011) prescribes a framework for management and mitigation that includes implementing:

- Safety Zones – including observation and shut down zones based on likely noise levels produced during piling.
- Standard management and mitigation procedures – such as the timing/duration of piling, methodology, shut down procedure and compliance reporting
- Additional management and mitigation procedures – such as increased safety zones or increased observation efficiency during poor visibility conditions.
- Underwater noise impact assessment – such as modelling based on monitoring data collected during construction.

Due to the greater impacts of impact pile driving, vibrational pile driving or pile drilling should be preferentially used where possible. It should be noted that underwater rock blasting would not be undertaken. The submissions by DEWNR and the EPA suggested a 1,000 metre safety observation zone (with the EPA also suggesting a 600m mammal exclusion zone) be required.

These aspects would need to be considered in the preparation of the CEMMP.

During operation, the main impact would be disturbance from shipping activities (mainly during loading operations). Initially, an iron ore vessel would be in port every 18 days (i.e. 2 per month or 20 vessels/yr). In the long-term, this frequency would increase to a vessel every 4-5 days (i.e. 7 per month or 50 vessels/yr). Thus, the port would eventually be in continuous use. This level of activity is likely to deter sensitive species from using the local area, which would result in a minor loss of potential feeding habitat. The PER (Section 6.11.2.6) considered that the potential for negative impacts on the marine environment from artificial lighting associated with the jetty would be low and localised.

Due to the occurrence of a number of threatened species in the area, it is considered that monitoring of the wider environment should be undertaken to detect any impacts on marine fauna. This should be addressed in the Environmental Management and Monitoring Plans.

In particular, the Plan should specifically address potential impacts of construction and shipping activities (i.e. from the shipping channel to the Port, including the anchoring area).

### **6.2.5 Pest Plants and Animals (Terrestrial and Marine)**

The proposed site has been highly modified for agriculture and land not used for cropping is generally infested by a wide range of weed species. The PER (Section 5.9.1.4) identified a total of 19 introduced species, comprising 33% of all species recorded for the site. Declared plants include African Boxthorn, Horehound and Onion Weed. Construction activities would need to be managed to ensure weed species are not spread further around the site or to other sites. In particular, disturbed soils and stockpiles would be the most prone to weed infestation. As part of proposed rehabilitation and revegetation works for the coastal headland and beaches, effective weed control will be essential to ensure the success of such works.

Introduced animal species are also prevalent on the site and include rabbits, house mice, cats, foxes, starlings and rock pigeons. Increased human habitation of the site could potentially encourage pest species that would be attracted to food sources or shelter provided by the facility. In particular, the rock pigeon population could increase due to grain storage and handling. Silver Gull numbers could also increase due to the proposal, especially if attracted to waste or stormwater retention basins/ponds. As part of the rehabilitation and revegetation works for the coastal headland and beaches, rabbits would be controlled to minimise grazing pressure (and soil disturbance from burrowing).

The PER stated that a Weed and Pest Management Plan would be implemented.

There were no marine pest species recorded for the site. The RD (Section 5.11.7.2) clarified that the record of the listed marine pest Asian Mussel in the PER was false. The low level of disturbance of the seabed during jetty construction would have limited potential for marine pest species (such as the European Fan-worm) to become established. The introduction of marine pest would be of greater risk during operation, via ballast water or bio-fouling from shipping. The PER (Section 7.3.10.1) stated that ballast water management procedures would be implemented in compliance with national requirements. The RD (Section 5.11.7) stated that a Maritime Pest Management Plan (including a monitoring program) would also be implemented for the construction and operational phases. This aspect would also be included in the Emergency Response and Incident Management Plan.

The RD (Section 5.11.7) further predicted the Port would pose a low Biosecurity risk to aquaculture and fisheries and stated that Port operations would comply with all Australian Quarantine & Inspection Service (AQIS) requirements for shipping and ballast management (as well as Biosecurity Australia requirements for the Port). These would be included in relevant management plans.

### **6.2.6 Hydrogeology**

The gentle valley within which the proposal is located, drains through the site and discharges to Rogers Beach, where water would pond in the vegetated clay basin behind the dunes/beach. Due to the agricultural use of the land, most rainfall and run-off would generally soak into the permeable soils or be taken up by crops/pasture. Only during heavy or prolonged rainfall events would surface flows be generated that would discharge to the marine environment.

The proposal would establish large areas of hard surfaces from which substantial volumes of run-off would be generated, including storage sheds, silos/bunkers, office buildings/carparks and roads. Run-off from these areas would need to be suitably managed to ensure any potential sources of contamination (especially fuel/chemical spills) do not reach the marine environment. In particular, the sealing of Swaffers Road could generate substantial volumes of run-off (potentially contaminated) or that would need to be managed. In addition, volumes of run-off discharged to the marine environment should not exceed those that occur naturally (i.e. maintained to pre-development levels). The proposal would also affect local drainage patterns, requiring the site to be engineered to divert run-off around the site to suitable collection or discharge points.

The PER (Section 4.6; Figure 4.2) provided a conceptual stormwater management design for the site, including associated infrastructure. Furthermore, the PER (Section 6.3 and Appendix F) provided more details on the surface water conceptual design and management strategy. The proposed strategy considers existing catchment conditions for the 100 year storm event and incorporates Water Sensitive Urban Design objectives and measures to maintain a natural water balance, reduce flooding/erosion risks and to use stormwater as a resource. Stormwater management would also be addressed in a Soil Erosion and Drainage Management Plan (SEDMP) for the construction stage. Potential contamination of stormwater, such as from a build up of pollutants or an accidental spill, would also need to be addressed (including monitoring and management strategies)

The proponent has adequately investigated the surface water characteristics of the site and potential impacts related to how the modifications to the site would affect the natural hydrology and discharges to the marine environment. The proposed stormwater management strategy provides adequate measures to mitigate impacts (especially flooding and erosion risks), to maintain a natural water balance and to use stormwater as a resource. The groundwater characteristics of the site have also been adequately investigated. Groundwater is not of a suitable quality to be used as a resource and there is only a low risk of contamination by seepage of chemical or hydrocarbon spills/leaks through the soil, which can be suitably managed.

In conclusion, the proposal would establish an industrial site on an undeveloped part of the coast, within in a rural landscape, which will introduce a high level of human activity and disturbance to the area (including shipping activities). In particular, the jetty structure would be

a prominent visual feature on the coastal landscape. The land based part of the site has been degraded by agriculture and has low environmental values, except for Rogers Beach (which is not within the development footprint, but would be indirectly affected). The coastal and marine environment is relatively pristine, but the site is not significant from a conservation perspective. However, several threatened fauna species (mainly birds and marine mammals) either use the site as part of a wider feeding territory or are transitory. The greatest environmental concern is the potential risk of a fuel/oil spill from shipping on the nearby Lipson Island Conservation Park (especially due to its close proximity) and the Sir Joseph Banks Group Marine Park (especially due to its high conservation values).

During construction a range of standard impacts of varying degrees could occur due to land disturbance from earthworks (vegetation clearance, soil erosion and dust); destruction and disturbance of terrestrial/marine habitat and fauna species; weeds and pests; dust and noise; wastes and litter; and increased heavy vehicle traffic. These impacts would be localised and temporary in nature and can be satisfactorily managed and mitigated through standard practices. The greatest risk is the potential disturbance or death/injury to marine fauna from pile driving activities during jetty construction, especially on protected marine mammals (pinnipeds and cetaceans). Specific construction methods and protocols would need to be adopted to minimise this risk.

It is considered that these impacts and risks can be suitably minimised and managed, primarily through measures and monitoring programs proposed in the Environmental Management and Monitoring Plan for the construction and operational phases.

### **6.3 CONSTRUCTION AND OPERATIONAL EFFECTS**

#### **6.3.1 Construction**

During the two year construction period, there are a range of standard impacts associated with a large infrastructure proposal that are likely to occur, including:

- Earthworks that disturb soils and change the topography of the land (and natural drainage), which would require the control of wind and water erosion.
- Generation of air emissions, which would require the control of including dust, noise and pollutants.
- Increased traffic (particularly heavy vehicles), which can have an impact on road safety and cause disruption to local traffic movements (especially farming related).
- Disturbance to the coastal and marine environment.

#### **6.3.2 Operation**

The most significant impacts during operation of an export port facility are likely to be:

- Increased heavy vehicle traffic from the mine and worker traffic to the Port.
- Noise from the operation of the Port.
- Increased shipping traffic around the Port and within the Gulf.
- Visual impact of a prominent jetty structure and shipping traffic on the coast.

- Reduced amenity at Lipson Cove due to the establishment of an industrial facility on a relatively natural coastal landscape (especially visual impact, noise, shipping activities and light haze at night).
- Potential risk of a fuel/oil spill.

#### **6.4 RISK & HAZARD MANAGEMENT**

The PER (Section 7.2) included a detailed qualitative risk assessment to assess the potential environmental and socio-economic impacts associated with the construction, operation and decommissioning of the port facility. A residual risk assessment was undertaken after the consideration of key mitigation measures. The introduction of marine pests associated with ballast water and hull fouling of visiting ships was the only potential impact assessed as having a high residual risk (this is addressed in Section 6.2.5).

##### **Fuel/Oil Spill Risk**

Whilst the residual risk of a fuel/oil spill was predicted to be low, it is considered that the consequences of a spill (even a minor one) would be significant, especially given the close proximity of the Lipson Island Conservation Park (especially the population of Little Penguins) and to a lesser degree the Sir Joseph Banks Group Marine Park (especially the sanctuary zone). The PER (Section 7.2) states that spills and leaks would be addressed by the Emergency Response and Incident Management Plan (including a marine water monitoring program). Spill response procedures would adhere to the requirements of the *National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances* (AMSA 2007).

The RD (Section 4.2) further clarifies that an Oil Spill Contingency Plan (OSCP) would be implemented and details the aspects that would be addressed in the Plan. The OSCP would be consistent with the South Australian Marine Spill Contingency Action Plan. It is considered the OSCP should also address contingencies and facilities for environmental clean-up operations (including capture, cleaning and rehabilitation procedures for wildlife). The Port operator would be responsible for developing the OSCP and be required to respond to spills exceeding 10 tonnes and for those that fall outside of Port limits. Appropriate spill kits, equipment and response materials would be maintained during construction and operation (including staff training). The OSCP and spill kits would need to be in place prior to construction commencing. A spill kit should also be provided at Lipson Cove once the Port is operational. The RD also notes that spill response equipment is available at Port Lincoln.

##### **Fire Risk**

Fire risk, whether associated with the facility or a threat to the facility, was not addressed in the risk assessment (nor in the PER). Whilst part of the site (S.389 in the south eastern corner) is located in Medium Bushfire Risk Area, the majority of the site is within a General Bushfire Risk Area (as identified in the Development Plan). Thus, it is considered that a Fire Management Plan should be prepared for the site and incorporated into the CEMMP and OEMMP.

#### **6.5 VISUAL AMENITY**

The PER (Section 6.14) included a visual amenity study to identify potential landscape quality/value impacts arising from the proposal.

The relatively remote coastal landscape, with gently undulating hills, rocky headlands and sandy beaches is natural in appearance. There are no other industrial type developments situated along this particular portion of coastline from Port Lincoln to Whyalla. The proposed development will establish a prominent visual feature along a natural (almost pristine) coastline. Whilst this part of the coast is generally privately owned farmland and not readily accessible to the public, the development would still maintain access to Lipson Cove and Rogers Beach. Both places, though to a lesser degree Rogers Beach, are used by the public for recreation and tourist pursuits. Therefore, the visual amenity from those locations would be the most affected. The Lipson Island Conservation Park is located 1.5 km south of the project jetty and would also be affected by the visual impact. There are 10 farming residences within a 5 km radius of the site whose visual amenity would be affected to some degree, whether within direct view or when working or travelling around the area. Natural topography and existing vegetation around properties and along roadsides provide some screening. The siting of the storage facilities in the base of the valley would reduce the height of structures, reducing the visual impact.

The existing rural and coastal views would be altered by the grain silos, conveyors, ship loader, jetty, vessels and other facilities (all large structures, making them more evident in a rural landscape). Silos are not uncommon in rural locations and are generally an acceptable part of wheat growing communities. The jetty will be the most prominent feature when viewed from Lipson Cove, as the land based infrastructure is naturally screened by headland. The proponent has sought to provide a number of design measures to mitigate visibility impacts such as planting of screening vegetation between 2-4 metres in height on Lipson Cove Road (along the southern boundary), low level lights (domed/focused) at the Port, Port facilities coloured in earthen tones and infrastructure built behind the headland, all of which would provide adequate mitigation as far as is practicable.

View-shed modelling and analysis was undertaken for the operations phase, which identified areas across the landscape that can be seen from different viewpoints, capturing views from the recreational/tourist areas, accessible public areas and wider views over rural landscapes and from the sea. There were five viewpoint locations with Rogers Beach and Lipson Cove included. The existing landscape was rated, based on scenic quality and user sensitivity, at each key viewpoint. A contrast rating and GIS analysis were also used. The PER defined visual amenity as *a measure of visual quality of the landscape experienced by residents, workers or visitors* and that *the perception of the landscape can vary greatly depending on the type of user viewing the landscape*.

The PER (Table 6-19) calculated the magnitude of visual effect to be moderate from Lipson Cove Beach and Rogers Beach, low from Lipson Cove Road and the ocean and negligible from Swaffers Road. The PER (Figure 6-9) identified the view-shed as extending approximately 2.5km from the centre of the site (i.e. extending no further than Coast Road). The PER generally considered the impact on the visual amenity as not of high significance. The site would be most visible from Rogers Beach, but it is not well used by the public (possible perception that it is a private beach). The PER implies that this impact would be marginal. The PER stated there would be a slight visual impact during the construction period, which would be temporary in nature.

Whilst the visual representations in the PER (especially Figure 6-12) provided a good picture of what the development could look like, it should be noted that depth perception with the human eye from the actual location is usually greater than that when viewing a flat, two-dimensional image. Thus, the visual effect is likely to be greater than that presented in the PER. Thus, the

visual impact from Lipson Cove may be greater than predicted. In addition, it is likely the jetty will be visible outside of the view field analysis area, due to the uninterrupted views further up and down the coast. No mention was made in the PER as to whether the facility would be visible from Port Neil or Tumby Bay. The visual contrast ratings are acceptable. Lipson Cove Beach would have the higher user sensitivity.

The impact from the storage/unloading area will be lessened, as it would be constructed on the lowest point of the project area, taking advantage of the undulating land form (i.e. lower down in the valley) to minimise its impact on the views from surrounding locations. The surrounding hills will still be visible. The Cape Class and Panamax vessels will have a greatest impact on the visual amenity when they are berthed at the jetty. At close range, vessels would accentuate the visual impact of the jetty. Whilst the industrial nature of the proposal is difficult to disguise, the PER provides practical measures to lessen the visual impact as far as practicable, which are considered to be acceptable.

In conclusion, the visual effects of the proposal on the environment are considered to be one of the most significant impacts on the locality. An industrial development would be established in a rural area, along a part of the coastline that is devoid of development and relatively natural/pristine. Whilst the land based components of the proposal would be suitably screened using the natural topography and vegetation plantings, the jetty structure and associated shipping activities would result in some loss of landscape quality. This impact would be greatest from Lipson Cove/Island (and to a lesser degree Rogers Beach), which would have reduced amenity value (and potentially tourism and recreational values). The jetty would also be very noticeable at night, due to lighting of the facility and from vessels.

## **6.6 EFFECTS ON COMMUNITIES**

### **6.6.1 Construction and Operational Workforce**

The construction period for the proposal is estimated in the PER (Section 6.15.4) to be 27 months, during which time the construction workforce would need to be accommodated. The PER (Section 6.15.4.2) states there are limited accommodation options currently in nearby Tumby Bay or Port Lincoln for short to medium stay personnel. It is likely that a high percentage of these workers would be Fly in – Fly Out (FIFO) who would require housing. The proponent is currently negotiating with the Tumby Bay Council for a site near the township to be operated as a workers village. This is likely to be operated by a third party, as is often common for mining camp developments. The village is likely to also support mine personnel for the Eyre Iron Joint Venture if that proceeds.

The workers village proposed for Tumby Bay is not part of the application for Stage 1 and is proposed to form part of a future application. However, accommodation for the incoming workers would be available at the time that construction commences on the Port proposal. It is likely that workers would fly in through the Port Lincoln airport which has the appropriate capacity for flights (and a new airport is currently being constructed) and would easily deal with the needs on any FIFO workers in conjunction with the proposed development. The Tumby Bay airstrip is generally only used for local private planes and emergency services, such as the Royal Flying Doctor Service.

The proponent has indicated that it would attempt to recruit local applicants and business to construct the Port project, but this may not be possible in all cases depending on the skills being

sought. The smaller ongoing workforce of 70 employees could source ongoing accommodation at Port Lincoln or in surrounding towns. This is not considered to be an assessment issue for this proposal.

In terms of the social impacts of the influx of the construction and operational workforces, these can be managed with the establishment of the proposed construction village (Stage 2). Recruitment of local or regional staff to the project where possible, is acknowledged and supported.

### **6.6.2 Surrounding Land Owners and Land Uses**

There are approximately 10 residences within a 5km radius of the site that part of farming properties (grazing and cropping). The proposal is unlikely to affect the farming activities of local landowners, although disruption may occur during busy periods (such as harvesting) due to traffic impacts from the development on local roads. The proponent has advised that the proposed upgrade of Swaffers Road may include a realignment to move the road further away from nearby residences. In addition, a separate access road may be provided for residents as part of the design.

A new public road would be provided to maintain access to Rogers Beach. As the new road would be on private land, the proponent would need to make arrangements to ensure public access is maintained.

Lipson Cove and Lipson Island to the south is a relatively popular attraction for tourists and visitors. The Island is a wildlife refuge for Little Penguins and seabirds. The Lipson Cove area has some limited visitor facilities, including toilets and a semi-formal camping area. It is a scenically attractive area. There is likely to be a significant visual impact of the Port on the Lipson Cove area and, together with the effects from Port operations, would reduce the current untouched nature and amenity value of the area. This may reduce the attractiveness and enjoyment of the area for visitors.

### **6.6.3 Aboriginal Heritage and Native Title**

The PER (Section 6.13) states there are no registered sites of Aboriginal Heritage within the disturbance footprint of the site. It was recognised that the area does have mythological significance to the local traditional owners. Unregistered sites of significance to the Barngala and Nauo people occur in the dunes adjacent to Rogers Beach. It is considered that the protection of these sites should be addressed in a Management Plan for the beach and surrounding area (refer to Section 6.2.1 of this AR).

Native Title implications for Crown Land associated with the coastal strip and the seabed would be addressed through the land tenure process that would be undertaken by the Department for Planning, Transport & Infrastructure under the *Harbors and Navigation Act 1993*.

### **6.6.4 Tourism and Recreation**

The main location of importance for public recreation and tourism is Lipson Cove to the south of the site, and to a lesser degree, Rogers Beach immediately to the north of the site.

The Response (Section 5.2.4) considers that light spill from the jetty would not be likely to cause disturbance to campers at Lipson Cove. However, it is likely that the light haze created by the

jetty would be noticeable, when compared with the current situation (which would impact on the natural experience of the location).

The establishment of a jetty across the coastal reserve would effectively inhibit public access from Lipson Cove to Rogers Beach. However, the proposed public road from the Lipson Cove Road to Rogers Beach would provide improved public access to the beach.

## **6.7 ECONOMIC ISSUES**

### **6.7.1 Employment**

As outlined in the PER (Section 6.15.3), there is expected to be a peak construction workforce of more than 200 people and an ongoing operational workforce of up to 70 people (30 of the 70 would be directly employed by Centrex and approximately 40 would be employed by the operators of the grain and haematite operations on-site).

Ongoing indirect employment opportunities would also result from the development of the Port and associated mines (not the subject of this assessment). The proposed development of the village site at Tumby Bay would necessitate the provision of services to the village including catering, cleaning and other requirements.

Development of the Port would support local businesses in nearby Tumby Bay, Port Neill and, to a lesser extent Port Lincoln.

The economic benefit of the Port proposal is positive both for the immediate area and for the Eyre Region, due to the benefits for prospective mine developments. Additional employment opportunities would be available in the region if mining is expanded through the operation of Port Spencer. This is a positive outcome for the region and supports the targets of the State Strategic Plan. The Department of Manufacturing, Innovation, Trade, Resources and Energy (DMITRE) is fully supportive of the development in relation to the opportunities it creates for mine expansion on the west coast of South Australia, particularly for iron ore.

### **6.7.2 Investment**

Section 6.15.2.1 of the PER provides details on an estimated \$AUD 250 million (plus or minus 30%) development cost for the Stage 1 proposal. The PER (Table 6-21) calculates the expected value of products to be exported from Stage 1 at \$AUD 357 million, with significant improvements in export earnings in future stages. This is predicated on the approval and operation of existing and future mines in the region.

This is a significant positive investment impact for the Eyre region and for South Australia, with flow on effects for mine development in the region.

### **6.7.3 Fishing and Aquaculture**

The PER (Section 6.11.2.7) concluded that commercial fishing activities are carried out in other regions of the Gulf away from the proposed site. In addition, the site is within the Port Neill Aquaculture Exclusion Zone. Thus, the creation of a port would not impact on fishing nor aquaculture activities.

Based on available literature, the PER considered the site is not noted to be an area of intense recreational fishing. The PER (Section 6.11.2.8) states that the port would not allow fishing on or around the jetty. It is considered that increased fishing pressure from workers and visiting boat crews would also need to be managed. The establishment of a public access road to Rogers Beach could potentially increase recreational fishing activity in this area, as access to this beach is currently limited (i.e. often perceived as being inaccessible).

The Department of Primary Industries and Regions South Australia (PIRSA) advised that the PER identified Abalone and Blue Throated Wrasse on the proposed site (in the reef areas and fringing seagrass meadows), which are commercially valuable fish species. An issue was raised that increased recreational fishing pressure and loss of access to the jetty/anchorage areas could potentially affect commercial fishers. Given the small footprint of the development, it is considered that the proposal would have minimal impact on the commercial fishery. Recreational fishing is only likely to increase marginally and would have a very localised effect on fish stocks.

In addition, PIRSA advised that shipping lanes and anchoring points should avoid aquaculture zone areas (existing, proposed and prospective). The closest such zones are the Tumby Bay Policy Area and the Lower Eyre Peninsula Policy Area (centred around Port Lincoln), which would not be affected as vessels would enter/exit the Spence Gulf via the existing shipping channel that avoids this area.

## **6.8 TRAFFIC AND VEHICLE MOVEMENTS**

Traffic and vehicle movements in relation to this proposal were generally outlined and considered in the PER (Appendix H). The Port would generate traffic for the export of both iron ore and grain products. The truck traffic will be in the form of road trains and B-double vehicles. Stage 1 of the project is expected to export approximately two million tonnes of haematite and one million tonnes of grain per annum. The haematite will be initially sourced from Centrex's Wilgerup mine site, located to the north-west of the proposed port.

Two possible routes were considered in the PER for the transport from the mine site, although Route 1 (via Murdinga – Melonga Road, the Birdseye Highway, then south into the Balumbah-Kinnard Road at Rudall to the Lincoln Highway near Port Neill, then south to Swaffers Rd) is now the preferred option addressed in greater detail in the RD (Section 5.7.1). Ongoing negotiations are occurring with the District Council of Cleve on the necessary level of road upgrades required (including rail crossings). The upgrade of the Balumbah- Kinnard Rd from Rudall has already been commenced by Council, as part of its long-term plans to seal the road. The proponent has advised that it is committed to contribute to complete the upgrade of this road. Sealing of the road would minimise potential dust and noise impacts on residents along the road.

Heavy vehicles will be required to access the Port through Swaffers Road to the north of the site, the report indicates that some 70 heavy vehicles (140 movements per day) are required to deliver the haematite to the storage facilities on site. This would equate to a truck passing any particular point along the route every 10 minutes. Thus, there would be a continuous procession of trucks along the route, 24 hours per day and 7 days per week. A further 40 vehicles per day could be expected to transport grain to the site originating from both north and south of the port site.

On inspection, the intersection with Lincoln Highway and Swaffers Road is a sharp (almost) hairpin left hand turn off the Highway with steep batters on each side of the road. There is also a

drainage line (and small swamp area) on the northern side of Swaffers Road, which will influence design parameters for the upgrade of the corner. Sealed channelized turning lanes, as discussed in the PER (Appendix H) would be appropriate. The Response Document (Section 5.7.6) identified the likely need for overtaking lanes on the Lincoln Highway, midway between Balumbah – Kinnard Road and Swaffers Road.

The final design details of the relevant road upgrades/improvements (including passing lanes) and intersection improvements would need to ensure convenient and efficient vehicle movements, whilst meeting relevant road safety standards. Designs would need to be subject to DPTI (Transport Services)/Council approval and be undertaken at the cost of the proponent. Road maintenance requirements would also need to be negotiated with the relevant road authority. This aspects would be the subject of a ‘Reserve Matter’ as part of any development authorisation (if approved by the Governor).

In addition, DEWNR advised that road upgrades required for transport or road safety purposes may affect native vegetation, including threatened species listed under the *Environment Protection and Biodiversity Conservation (EPBC) Act* or the *National Parks and Wildlife Act 1972*. Proposed road works that could necessitate the removal, trimming or disturbance (including the effects of changed drainage patterns) of native vegetation would need to address approval requirements under the EPBC Act and the *Native Vegetation Act 1991* (including an SEB off-set). This aspect should be included in the Native Vegetation Management Plan.

Pursuant to the *Road Traffic Act 1961*, the proponent will need to seek approval from DPTI, as delegated by the Minister for Transport, for authority to access the construction site with vehicles that do not fall within the definition of ‘General Access Vehicle’. This might include such things as construction equipment and vehicles carrying large indivisible construction materials. The proponent will also need to give consideration to application for access to enable Restricted Access Vehicles to have regular access to a network of roads to facilitate the Port’s business. This might include access for Road Trains or B-Doubles to transport commodities to and from the Port. If the road network required is not already Gazetted as an approved route for the type of vehicle required, then an application must be made to DPTI to amend the Gazetted route.

An important initial step, as outlined in the Heavy Vehicle Access Framework, is to have an assessment of the route undertaken by an Authorised Route Assessor, at the applicant’s cost. This process will identify any upgrades required to make the route safe and suitable for the type of vehicle access requested. As part of the approval/s, the proponent will be required to prepare a list of final transport infrastructure improvement needs upon completion of a full route assessment and the proponent’s resolution on double road train/triple road train option. This list should identify the scope, timing and estimated cost of the required improvements. Based on the list, the proponent will be required to enter a Deed of Agreement with DPTI regarding delivery of the infrastructure identified in the list of improvement needs. DPTI will require the assessment of proposed routes any road improvements that are required to cater for the movement of heavy vehicles associated with the mine and Port to be funded by the proponent.

## **Grain and Other Minerals**

The potential impacts on transport networks and road safety from the delivery of grain and minerals from other mines to the port would depend upon the location of the product, volume/frequency deliveries and mode of transport. Similar issues to those that have been assessed in this report would need to be addressed for any future proposals. This may be

undertaken as part of a development approval process for facilities (i.e. further storage and loading structures), as part of a mine approval process (under the *Mining Act 1971* through DMITRE) and/or for road transport route approvals for Restricted Access Vehicles through DPTI (Transport Services).

## **6.9 PORT MANAGEMENT**

The Response Document (Section 5.8.1) provided confirmation from DPTI that Port Spencer would be a 'Port', as defined in the *Harbors and Navigation Act 1993*. Procedures would be applied, as required under that Act, covering all of the safety, operations and emergency plans necessary for the Port. Vessels types, movements and pilotage would also be included in port management plans. Seabed access and use and operation of the shipping channel would also be considered by DPTI under the *Harbors and Navigation Act 1993*.

Management of Port Spencer would be subject to the requirements of the *Harbors and Navigation Act 1993* and would be subject to detailed negotiation with DPTI.

## **6.10 INFRASTRUCTURE**

### **6.10.1 Water and Power Supply**

The main utility infrastructure requirements would be for power and water, for which the site is poorly serviced to cater for such an increase in demand.

The PER (Section 4.6) estimated that Stage 1 would require approximately 1 ML of water per day for initial earthworks (10 months), 0.15 1 ML/day for jetty and site infrastructure construction (following 15 months) and 0.25 ML/day during operation. This would be provided by the SA Water supply via a new pipeline along Swaffers Road. Stormwater run-off and rainfall would be collected for non-potable water uses, such as dust suppression, wash-down and fire suppression. The PER (Section 6.3.2) described a range of water sustainability measures that would be adopted to minimise water use and to utilise stormwater as an alternative non-potable water source. The PER (Section 7.3.5.1) stated that a Site Water Management Plan would be developed to address surface and stormwater management. It is considered the Plan should also address water sustainability.

The PER (Section 4.7) estimated that Stage 1 electricity requirements would not exceed 5 MW, which would be supplied via on-site generators, until the existing Eyre Peninsula transmission line was upgraded to warrant a connection to the grid. This is because the existing power line servicing Eyre Peninsula does not have sufficient capacity to meet demand. The need for upgraded electricity infrastructure, especially to service the mining industry, is currently being investigated by ElectraNet. Overall, Centrex would potentially require up to 200-250 MW of power within 7 years to meet demand for its mines and Stage 2 of the project. The PER (Section 7.3.3) stated that energy efficiency and conservation measures would be assessed during the detailed design stage and implemented where practicable.

### **6.10.2 Waste Management**

During construction and operation of the Port, waste streams would be generated from materials packaging, chemical storage and general litter from the workforce. During operation, the main waste stream would be generated by visiting ships. Litter escaping from the site would not only

affect the amenity of the area, but can also pose a significant threat to coastal and marine fauna species if not suitably controlled.

The PER (Section 6.8) adequately identified all waste streams that would be generated during construction and operation. In particular, the waste management hierarchy of “avoid, reduce, reuse and recycle” (as per South Australia’s Waste Strategy 2011-2015) has been adopted. Based on this approach, Waste Management Plan for the construction, operation and decommissioning phases would be prepared and implemented (including principles of continuous improvement through review).

Adequate waste reception facilities for ships trading with Australia would need to be provided at the Port to meet the obligations under the International Convention for the Prevention of Pollution from Ships (MARPOL). The International Maritime Organisation (IMO) *Guide to Good Practice for Port Reception Facility Providers and Users* (MEPC.1/Circ.671) should be used as a basis for this aspect of the Plan. The ANZECC *Best Practice Guidelines for Waste Reception Facilities at Ports, Marinas and Boat Harbours in Australia and New Zealand* would also need to be addressed.

In conclusion, it is considered that the proposed arrangements for provision of water, power and sewerage are adequate to meet potential demand from the development. Initially, power would be generated on-site by diesel generators, but a permanent connection to an upgraded electricity network is planned. Long-term water supply demand would be met by a desalination plant (proposed to be assessed as part of Stage 2), predominantly for magnetite based operations. Energy and water demand would be supplemented by alternative sources (especially stormwater harvesting), where practicable.

## **7 PROPOSED MANAGEMENT AND MONITORING OF ISSUES**

The proposed management and monitoring requirements of the proposal are based on a qualitative risk assessment in the PER (Section 7.2), that identified the risks of potential impacts and prescribed measures required to avoid, minimise and mitigate impacts. The PER (Section 7.1) establishes an environmental framework that details management requirements for the construction and operational phases. In particular, an ISO 14001:2004 compliant Environmental Management System for operation of the facility would be implemented. This would need to be adopted by a suitably experienced commercial port operator that would be appointed to manage the port. The PER (Section 7.3) details the environmental objectives and mitigation measures that need to be met to minimise potential impacts, including monitoring requirements to ensure the objectives are met. It is expected that such a system would include regular review and, where needed, adaptive management.

Whilst the full details are not provided at this stage, the PER does demonstrate the proponent's commitments to sound environmental management. Prior to construction commencing, these aspects would need to be further detailed, with input from technical experts within relevant Government agencies. Some monitoring requirements would need to be commenced in advance of construction (or existing data collection continued), in order to establish an adequate baseline upon which to measure the impact of any changes to the environment.

### **7.1 CONSTRUCTION AND OPERATIONAL ENVIRONMENTAL MANAGEMENT AND MONITORING PLANS**

If approved, Construction and Operational Environmental Management and Monitoring Plans (EMMP's) would need to be produced, based on the environmental framework detailed in the PER for each stage of the development. The EMMP's provide the 'umbrella' document, under which specific Management Plans sit. The construction contractor should be responsible for preparing an Environmental Management Implementation Plan (EMIP) that would document how the management requirements outlined in the Construction Environmental Management and Monitoring Plan (CEMMP) would be implemented during construction. An Operational Environmental Management and Monitoring Plan (OEMMP) should also be prepared by the proponent, for implementation by the port operator.

The Construction Environmental Management and Monitoring Plan would include the following plans:

- Air Quality Management Plan
- Waste Management Plan
- Revegetation and Rehabilitation Plan
- Weed and Pest Management Plan
- Construction Soil Erosion and Drainage Management Plan (SEDMP)
- Energy Efficiency Plan
- Maritime Water Quality Management Plan (including monitoring program)

The Operational Environmental Management and Monitoring Plan include the following plans:

- Air Quality Management Plan
- Waste Management Plan
- Revegetation and Rehabilitation Plan

- Weed and Pest Management Plan
- Construction Soil Erosion and Drainage Management Plan (SEDMP)
- Energy Efficiency Plan
- Maritime Pest Management Plan
- Site Water Management Plan
- Maritime Water Quality Management Plan (including monitoring program)
- Emergency Response and Incident Management Plan (including maritime and terrestrial response processes and procedures).
- Oil Spill Contingency Plan

It is considered that, in addition to these plans, the following management plans would also need to be prepared and incorporated in the CEMMP and OEMMP where relevant:

- Fire Management Plan
- Rogers Beach Management and Monitoring Plan
- Beach Profile Monitoring and Sediment Management Plan

In order to detect any changes to the site or the surrounding environment, and to measure the effectiveness of mitigation measures, targeted monitoring should be addressed in the Environmental Management and Monitoring Plans. The various management plans proposed above would include monitoring, which would require a suitable baseline to be effective. As recommended in the PER (Appendix K – Section 23), a Multiple Before/After-Control/Impact (MBACI) methodology should be adopted. An adaptive management approach would need to be adopted, including the consideration of further mitigation strategies for instances where monitoring detects any unpredicted impacts.

As part of any development approval, these plans would be listed as ‘Reserved Matters’ and would need to be satisfactorily completed, in consultation with relevant Government agencies (and possibly Council), prior to any works commencing.

### **Lipson Cove, Lipson Island and Wider Coastal and Marine Environment**

Due to the near proximity and conservation significance of the Lipson Island Conservation Park and, to a lesser degree the Sir Joseph Banks Group Marine Park (especially the Sanctuary Zone), the proposed monitoring regime should be expanded to encompass these areas. Due to the occurrence of a number of threatened species recorded (or likely to occur) around the proposed Port site, it is considered that targeted impact monitoring of the wider environment would need to be undertaken to detect any effects on terrestrial, coastal and marine fauna populations (especially NPW Act and EPBC Act listed species). If monitoring detects any detrimental changes to the environment, then further mitigation measures would need to be implemented. Environmental data collection would need to be undertaken to establish control sites for impact monitoring and for use as an adequate baseline to measure any impacts (especially if a fuel/oil spill should occur).

In particular, the EMMP’s would need to address potential impacts of jetty construction and shipping activities (i.e. from the shipping channel to the Port, including the anchoring area).

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The PER (Appendix J) describes the issues and actions that would need to be considered.

## 8 CONCLUSIONS

### 8.1 ENVIRONMENTAL ISSUES

The proposal would establish an industrial site on an undeveloped part of the coast, within in a rural landscape, which will introduce a high level of human activity and disturbance to the area (including shipping activities). In particular, the jetty structure would be a prominent visual feature on the coastal landscape. The land based part of the site has been degraded by agriculture and has low environmental values, except for Rogers Beach (which is not within the development footprint, but would be indirectly affected). The coastal and marine environment is relatively pristine, but the site is not significant from a conservation perspective. However, several threatened fauna species (mainly birds and marine mammals) either use the site as part of a wider feeding territory or are transitory. The greatest environmental concern is the potential risk of a fuel/oil spill from shipping on the nearby Lipson Island Conservation Park and the Sir Joseph Banks Group Marine Park. The extent of risk that shipping activities could also pose to marine mammals (especially from collisions if vessels cross migratory paths) would be investigated by the proponent as part of the EPBC Act referral process.

During construction, a range of standard impacts would occur due to land disturbance from earthworks (vegetation clearance, soil erosion and dust); destruction and disturbance of terrestrial/marine habitat and fauna species; weeds and pests; dust and noise; wastes and litter; and increased heavy vehicle traffic. These impacts would be localised and temporary in nature and can be satisfactorily managed and mitigated through standard practices. The greatest risk is the potential disturbance or death/injury to marine fauna from pile driving activities during jetty construction, especially on protected marine mammals (pinnepeds and cetaceans). Specific construction methods and protocols would need to be adopted to minimise this risk.

There are no significant nor important surface water (watercourses, lakes or wetlands) or groundwater resources associated with the site and pollutant sources and stormwater would be managed to ensure there would be no contamination of local aquifers and the marine environment.

It is considered that these impacts and risks can be suitably minimised and managed, primarily through measures and monitoring programs proposed in the Environmental Management and Monitoring Plans for the construction and operational phases.

The visual effects of the proposal on the environment are considered to be one of the most significant impacts on the locality. An industrial development would be established in a rural area, along a part of the coastline that is devoid of development and relatively natural/pristine. Whilst the land based components of the proposal would be suitably screened using the natural topography and vegetation plantings, the jetty structure and associated shipping activities would result in a loss of landscape quality. This impact would be greatest from Lipson Cove beach (and to a lesser degree Rogers Beach), which would have reduced amenity value (and potentially tourism and recreational values). The jetty would also be very noticeable at night, due to lighting of the facility and from vessels.

Further assessment of potential impacts on Nationally threatened fauna species, namely the Southern Right Whale and the Fairy Tern, is being undertaken by the proponent and the Australian Government Department of Sustainability, Environment, Water, Population & Communities as part of the EPBC Act referral process. The outcome of this process may result

additional requirements being included in the Construction and Operational Environmental Management and Monitoring Plans.

## **8.2 SOCIAL ISSUES**

The establishment of a large Port facility would provide significant employment opportunities for the local and regional communities, particularly during the two year construction period. Additional jobs would be created indirectly for local service industries. The nearby township of Tumby Bay would experience the greatest benefit, especially being the site for a proposed workers accommodation village.

The area surrounding the proposed site is rural in nature and has a low population density. Several farming residences would be affected by the development, especially during the construction period. In particular, dust and noise emissions would be suitably controlled. Traffic volumes and frequencies would substantially increase, during both construction and operation. In particular, at full production there would be a near constant flow of trucks bringing ore to the Port (i.e. a truck movement every 10 minutes day and night/every day), with a seasonal spike for grain transport during harvest times. Residents along Swaffers Road would be the most affected, although realignment (including the provision of separate access for residents) and sealing of the road would lessen noise and road safety impacts. Road upgrades would be undertaken to ensure efficient traffic movements and road safety on all affected roads (especially on the Lincoln Highway).

In the long-term, the tourism and recreational values of Lipson Cove beach could be reduced by a loss of amenity value, due to the visual prominence of the jetty and shipping activities (including from lighting at night).

## **8.3 ECONOMIC ISSUES**

The economic benefit of the Port proposal is positive both for the immediate area and for the Eyre Region, due to the benefits for prospective mine developments. Additional employment opportunities would be available in the region, if mining is expanded through the operation of Port Spencer. There would be a significant positive investment impact for the Eyre region and for South Australia, with flow on effects for mine development in the region. Local and regional businesses would benefit from the direct investment (primarily during construction) and flow-on (multiplier) effects, due to substantial demand for construction materials and services. The proposed workers accommodation village (subject to assessment as part of Stage 2) would provide additional economic benefits for Tumby Bay.

Increased employment opportunities from the Port would result in further increased spending in local and regional economies. If the Port becomes a catalyst for expansion of the mining industry on Eyre Peninsula, then additional employment would be generated that would be of economic benefit for other towns in the region. Whilst the Port has a project life of 20 years (and a design life of 50 years), it is likely that it would become a permanent facility (and employment generator) in the long-term, particularly for a range of users/industries.

## **8.4 INFRASTRUCTURE**

It is considered that the proposed arrangements for provision of power, water and sewerage are adequate to meet potential demand from the development. Initially, power would be generated on-site by diesel generators, but a permanent grid connection once the existing electricity

network is upgraded is planned for meeting full demand from the facility. Long-term water supply demand would be met by a desalination plant (proposed as part of Stage 2), predominantly for magnetite based operations. Energy and water use efficiency measures would be implemented and power and water demand would be supplemented by alternative sources (especially stormwater harvesting), where practicable.

## **8.5 RISK & HAZARD MANAGEMENT**

A detailed qualitative risk assessment has been undertaken to assess the potential environmental and socio-economic impacts associated with the construction, operation and decommissioning of the Port facility. A residual risk assessment was undertaken after the consideration of key mitigation measures. It is considered that the main risks include fuel/oil spills on the coastal and marine environment; the introduction and of marine pest species; and fire risk to and from the development. Appropriate measures have been proposed to minimise and monitor all risks associated with the Port.

## **8.6 MANAGEMENT, MITIGATION AND MONITORING**

The proposed management and monitoring requirements of the proposal are based on a qualitative risk assessment, that identified the risks of potential impacts and prescribed measures required to avoid, minimise and mitigate impacts. Construction and Operational Environmental Management and Monitoring Plans (EMMP's) would be prepared and implemented, based on an environmental framework (including an ISO 14001:2004 compliant Environmental Management System). The EMMP's would include a suite of separate Management Plans that address specific issues.

## **8.7 DEVELOPMENT PLAN AND PLANNING STRATEGY**

In regards to the Tumby Bay (DC) Development Plan the proposal is consistent with economic and orderly development policies in the Council Wide provisions of the Development Plan, but is at some variance with the environmental policies. The proposal is also considered to be at variance with a number of policies in the Land Not Within a Council Area (Coastal Waters) Development Plan.

The proposal responds to a need to provide a mineral and grain export facility, and is consistent with the overarching objectives contained in the Planning Strategy for Regional South Australia and the Eyre and Western Region Plan, and is considered to be consistent with the provisions relating to resource development and economic development. In relation to environmental issues, the proposal would involve some disturbance to the environment and would result in a minor loss of some flora and fauna in the area affected by the proposed jetty structure. However, the PER proposes measures to mitigate environmental impacts necessary to ensure consistency with the strategies relating to protection and enhancement of biodiversity.

The Eyre and Western Region Plan recognises that some development will take place in coastal and sensitive areas but seeks to ensure an appropriate balance is achieved between environment protection, preservation of the regions assets and the need for appropriate development together with the resultant economic benefits which result from development that utilises the regions natural competitive advantages.

## 8.8 OVERALL CONCLUSION

The establishment of the Port Spencer development would provide a much needed export port facility on the central Eyre Peninsula east coast that would assist in realising the mining potential of the region. More specifically, it would provide Centrex Ltd with a cost effective means of shipping iron ore from its numerous mineral deposits to export markets. The proposal would have economic benefits to the region (both directly through investment and indirectly through flow-on or multiplier effects), creating significant employment opportunities (mainly during construction). The establishment of the Port would also enable job creation associated with the mining operations. The establishment of an industrial type of development on a relatively natural part of the coast, and within a rural landscape, would result in some impacts on the environment and the community (all of which could be satisfactorily managed).

The main issues associated with the proposed port facility comprise:

- Disturbance to coastal and marine fauna during construction (especially from jetty pile drilling/driving and rock blasting/breaking activities) and operation (mainly from shipping activities).
- Increased traffic on the Lincoln Highway and local roads, especially the impact on travel times and road safety.
- Reduced amenity of Lipson Cove due to the visual and noise impacts of the jetty and shipping activities (especially impacts on landscape quality and recreational/tourism value). The establishment of an industrial facility on a relatively pristine part of the coast would change the natural character of the coastal landscape (especially due to human activities, noise and light pollution at night).
- Potential risk of an fuel/oil spill and the consequent effect on the coastal and marine environment (especially the Lipson Island Conservation Park and the Sanctuary Zone of the Sir Joseph Banks Group marine Park) and the amenity of local beaches (especially Lipson Cove and Rogers Beach).
- Impact upon local residents/farmers (especially from increased human activity and noise and the visual impact of the storage facilities) and disruption to farming activities (mainly due to increased road traffic).

## **9 RECOMMENDATIONS**

Should the Governor grant a provisional development authorisation, the approval should be based on the following requirements:

### **RESERVED MATTERS**

1. Compliance with the Building Rules in relation to all aspects of the proposed Major Development relating to building works (refer to Conditions and Notes to Applicant below).
2. Road upgrades for the Lincoln Highway, Swaffers Road and associated roads (including overtaking lanes, turning lanes and intersections), finalised plans, drawings, specifications and financial arrangements (including Deeds of Agreement with road authorities), which are to be prepared to the reasonable satisfaction of the Department of Planning, Transport & Infrastructure and the District Council of Tumby Bay (refer to Conditions and Notes to Applicant below).
3. Road upgrades for the Lipson Cove Road, finalised plans, drawings, specifications and financial arrangements (including Deeds of Agreement with road authorities), which are to be prepared to the reasonable satisfaction of the District Council of Tumby Bay and the Department of Planning, Transport & Infrastructure (refer to Conditions and Notes to Applicant below).
4. A Road Maintenance and Monitoring Agreement for Swaffers Road and the Lipson Cove Road (including associated intersections) between Centrex Metals Ltd and the District Council of Tumby Bay (refer to Conditions and Notes to Applicant below).
5. Road upgrades for the Balumbah - Kinnarird Road and associated roads (including intersections with the Lincoln Highway ), finalised plans, drawings, specifications and financial arrangements (including Deeds of Agreement with road authorities), which are to be prepared to the reasonable satisfaction of the District Council of Cleve and the Department of Planning, Transport & Infrastructure (refer to Conditions and Notes to Applicant below).
6. Road upgrades for the Murdinga - Murlong Road and associated roads (including intersections with the Birdseye Highway ), finalised plans, drawings, specifications and financial arrangements (including Deeds of Agreement with road authorities), which are to be prepared to the reasonable satisfaction of the District Council of Cleve and the Department of Planning, Transport & Infrastructure (refer to Conditions and Notes to Applicant below).

7. A Road Maintenance and Monitoring Agreement for the Balumbah-Kinnarird Road and the Murdinga - Murlong Road between Centrex Metals Ltd and the District Council of Cleve (refer to Conditions and Notes to Applicant below).
8. The Construction Environmental Management and Monitoring Plan (CEMMP) for the pre-construction and construction phases, the finalised and consolidated version of which is to be prepared to the reasonable satisfaction of the Environment Protection Authority, other relevant government agencies and the District Council of Tumby Bay (refer to Conditions and Notes to Applicant below).
9. The Operational Environmental Management and Monitoring Plan (OEMMP) for the operational phase of the development, the finalised and consolidated version of which is to be prepared to the reasonable satisfaction of the Environment Protection Authority, other relevant government agencies and the Tumby Bay District Council (refer to Conditions and Notes to Applicant below).
10. The Revegetation and Rehabilitation Plan and Vegetation Management Plan, finalised and consolidated versions of which are to be prepared to the reasonable satisfaction of the Native Vegetation Council and the Eyre Peninsula Natural Resources Management Board (refer to Conditions and Notes to Applicant below).
11. A Management and Monitoring Plan for Rogers Beach, which is to be prepared in consultation with the District Council of Tumby Bay and to the reasonable satisfaction of the Department of Environment, Water and Natural Resources and the Eyre Peninsula Natural Resources Management Board.
12. A Beach Profile Monitoring and Sediment Management Plan, which is to be prepared to the reasonable satisfaction of the Coast Protection Board.
13. A Fire Management Plan, which is to be prepared to the reasonable satisfaction of the Country Fire Service.

## **CONDITIONS**

1. No works on any part of the proposed Major Development shall commence until a favourable decision has been notified to the applicant by me or my delegate in respect of all reserved matters and a final authorization issued.
2. A decision on Building Rules compliance will only be made after a Building Rules assessment and certification has been undertaken and issued by the District Council of

Tumby Bay, or a private certifier, in accordance with the provisions of the *Development Act 1993*, and after the Minister for Urban Development & Planning receives a copy of all relevant certification documentation, as outlined in Regulation 64 of the Development Regulations 2008 (refer to 'Notes to Applicant' below for further information).

3. Before seeking a decision in respect of the reserved matters above, the applicant shall finalise and lodge a consolidated 'Construction Environmental Management and Monitoring Plan' (CEMMP). The CEMMP shall cover the pre-construction and construction phases of the proposed Major Development and shall include a Construction Soil Erosion and Drainage Management Plan (SEDMP), Air Quality Management Plan, Marine Water Quality Management Plan (including monitoring program), Waste Management Plan, Weed and Pest Management Plan, Fire Management Plan, Energy Efficiency Plan and Revegetation and Rehabilitation Plan. The matters to be addressed in the consolidated CEMMP shall generally include, but shall not be limited to, the management, mitigation, and monitoring of, and corrective actions/contingency plans in relation to the following matters:

- dust and sediment control
- odour emissions
- surface and ground water management
- site contamination
- waste management (for all waste streams) and overall site clean-up (including litter)
- use and storage chemicals, oil, construction-related hazardous substances and of other materials that have the potential to contaminate stormwater, groundwater or the marine environment (including emergency responses).
- noise emissions (including ongoing noise assessment and monitoring to ascertain the effectiveness of noise control measures)
- Aboriginal heritage requirements in accordance with the *Aboriginal Heritage Act 1988*
- vegetation clearance
- introduced plants and animals
- impacts on seagrass and marine flora
- impacts on the marine environment (especially noise and turbidity).
- visual impacts (including lighting)
- traffic management strategies

- effect on existing infrastructure
  - impacts on adjacent land users
  - site security, fencing and safety and management of impacts on local amenity for residents, traffic and adjacent land users
  - periods and hours of construction and operation in accordance with the requirements of the *Environment Protection (Noise) Policy 2007*
  - community complaints register regarding the above matters.
4. Before seeking a decision in respect of the reserved matters above, the applicant shall finalise and lodge a consolidated 'Operational Environmental Management and Monitoring Plan' (OEMMP). The OEMMP shall cover the post-construction phase of the proposed Major Development and shall include an Air Quality Management Plan, Marine Water Quality Management Plan (including monitoring program), Emergency Response and Incident Management plan (including maritime and terrestrial response processes and procedures), Fire Management Plan, Waste Management Plan, Weed and Pest Management Plan, Maritime Pest Management Plan, Revegetation and Rehabilitation Plan, Vegetation Management Plan, Beach Profile Monitoring and Sediment Management Plan and Site Water Management Plan. The matters to be addressed in the consolidated OEMMP shall generally include, but shall not be limited to, the management, mitigation, and monitoring of, and corrective actions/contingency plans in relation to the following matters:
- dust and sediment control
  - surface and ground water management
  - stormwater management
  - waste management (for all waste streams) and overall site clean-up (including litter)
  - chemical, oil, hazardous substances and fuel use and storage (including management/emergency response plans)
  - safe shipping activities and navigation
  - sand accretion and deposition
  - coastal hazards
  - impacts on seagrass and marine flora
  - impacts on the terrestrial, coastal and marine environment (including Lipson Island)
  - pest plant and animal species (both terrestrial and marine)
  - odour emissions

- noise emissions (including a monitoring program to ascertain the effectiveness of noise control measures)
  - visual impacts (including lighting)
  - revegetation and landscaping (including environmental rehabilitation)
  - traffic management
  - public access
  - public safety
  - impacts on adjacent land users
  - community complaints register regarding the above matters.
5. No construction activities or building works shall commence until an Environmental Management Implementation Management Plan (EMIP) has been prepared, to the reasonable satisfaction of the Environment Protection Authority and the Development Assessment Commission.
  6. All works and site activities shall be undertaken in accordance with the approved Construction Environmental Management and Monitoring Plan, Environmental Management Implementation Management Plan and Operational Environmental Management and Monitoring Plan.
  7. Construction activities shall be suitably managed to minimise and/or mitigate impacts on the community (especially noise and dust) and the natural environment as far as reasonably practicable.
  8. Further engineering designs for the jetty and associated structures shall be prepared and independently certified by a registered engineer, to the reasonable satisfaction of the Department for Planning, Transport & Infrastructure. A certificate as to the structural soundness of the proposed structures shall be submitted to the Development Assessment Commission, prior to the commencement of construction.
  9. Transport routes for the delivery of construction materials shall be selected to the reasonable satisfaction of the District Council of Tumby Bay and the Department of Planning, Transport & Infrastructure.
  10. Stockpiled soils shall be suitably managed to control dust emissions, erosion and weed infestation.
  11. Undeveloped allotments shall be left in a neat and tidy condition, with soil surfaces stabilised to minimise erosion.

12. Water-sensitive urban design measures and practices shall be adopted for the management of run-off, including stormwater capture and reuse.
13. Road designs shall not affect existing natural drainage lines in such a way as to cause flooding.
14. The design of the Swaffers Road upgrade shall avoid any spills of toxic materials from entering the marine environment.
15. Appropriate navigational aids shall be erected in prominent locations, in consultation with the Department of Planning, Transport & Infrastructure, prior to use of the facility for shipping purposes.
16. The proponent shall ensure satisfactory spill and fire fighting facilities and contingencies, determined in consultation with the Department of Planning, Transport & Infrastructure and the Country Fire Service, are in place prior to commencement of operation of the facility.
17. Vegetation screening and landscaping of the site shall commence prior to construction commencing and, when established, must be maintained in good health and condition at all times. A plant must be replaced if or when it dies or becomes seriously diseased within the first growing season after the plant dies or becomes seriously diseased. A weed control program shall also be implemented.
18. The Tumby Bay District Council shall be given seven days notice, prior to the commencement of works, and be provided with the name and contact facilities for the person responsible for coordinating site works covered by this approval.

### **NOTES TO APPLICANT**

1. Approvals will be required for all components of the development not hereby approved, including:
  - the jetty structure and associated loading facilities;
  - storage sheds and other storage structures;
  - fuel and chemical storage tanks;
  - truck weighbridge station;
  - the installation of navigational aids;
  - all administrative and other buildings and
  - any land division to create separate allotments.
2. Further designs and plans (ie. subject to separate applications to the Development Assessment Commission, as the Governor's delegate, or the District Council of Tumby

Bay in the future) will be required should further development approval be sought for additional storage or administrative related buildings or structures.

3. Pursuant to Development Regulation 64, the applicant is advised that the District Council of Tumby Bay or private certifier conducting a Building Rules assessment must-
  - (a) provide to the Minister a certification in the form set out in Schedule 12A of the Development Regulations 2008 in relation to the building works in question; and
  - (b) to the extent that may be relevant and appropriate-
    - (i) issue a Schedule of Essential Safety Provisions under Division 4 of Part 12; and
    - (ii) assign a classification of the building under these regulations; and
    - (iii) ensure that the appropriate levy has been paid under the *Construction Industry Training Fund 1993*.

Regulation 64 of the Development Regulations 2008 provides further information about the type and quantity of all Building Rules certification documentation for Major Developments required for referral to the Minister for Planning.

4. The District Council of Tumby Bay or private certifier undertaking Building Rules assessments must ensure that the assessment and certification are consistent with this provisional development authorisation (including any Conditions or Notes that apply in relation to this provisional development authorisation).
5. Should the applicant wish to vary the Major Development or any of the components of the Major Development, an application may be submitted, provided that the development application variation remains within the ambit of the Public Environmental Report and Assessment Report referred to in this provisional development authorisation. If an application variation involves substantial changes to the proposal, pursuant to Section 47 of the *Development Act 1993*, the applicant may be required to prepare an amended Public Environmental Report for public inspection and purchase. An amended Assessment Report may also be required to assess any new issues not covered by the original Assessment Report and a decision made by the Governor pursuant to Section 48 of the *Development Act 1993*.
6. The applicant's CEMMP and OEMMP should be prepared taking into consideration, and with explicit reference to, relevant EPA policies and guideline documents, including, but not limited to: the Environment Protection (Air Quality) Policy 1994, the Environment Protection (Noise) Policy 2007, the Environment Protection (Water Quality) Policy 2003,

the Environment Protection (National Pollutant Inventory) Policy 2008, the EPA Code of Practice for Materials Handling on Wharves 2007, EPA Bunding and Spill Management Guidelines 2012, EPA Handbooks for Pollution Avoidance and the EPA Stormwater Pollution Prevention Codes of Practice, in addition to other legislative requirements and Guidelines/Australian Standards requiring compliance.

7. The following activities in relation to the components of the development hereby approved and/or requiring future approval will require licenses under the *Environment Protection Act 1993*:
  - Bulk Shipping Facility: the conduct of facilities for bulk handling of agricultural crop products, rock, ores, minerals, petroleum products or chemicals to and from any wharf or wharf side facility (including sea-port grain terminals), being facilities handling or capable of handling these materials into or from vessels at a rate exceeding 100 tonnes per day.
  - Petroleum Production, Storage or Processing Works or Facilities: The conduct of works or facilities at which petroleum products are stored in tanks with a total storage capacity exceeding 2,000 cubic metres.
8. All works and activities must be undertaken in accordance with the General Environmental Duty as defined in Part 4, section 25(1) of the *Environment Protection Act 1993* (which requires that a person must not undertake any activity, which pollutes, or may pollute; without taking all reasonable and practical measures to prevent or minimise harm to the environment), relevant Environment Protection Policies made under Part 5 of the Environment Protection Act 1993, the ANZECC Best Practice Guidelines for Waste Reception Facilities at Ports, Marinas and Boat Harbours in Australia and New Zealand and other relevant publications and guidelines.
9. Pursuant to the *Harbors and Navigation Act 1993*, the proponent will need to enter into a licence agreement with the Minister for Transport over adjacent and subjacent land on terms acceptable to the Minister prior to the commencement of construction. Such agreement will require completion of the works to the satisfaction of the Minister, at which time the responsibility and control of the area will be transferred so as to minimise the Minister's ongoing responsibilities. Under the *Harbors and Navigation Act 1993*, the proponent would also need to apply to the Minister for Transport to have the harbor defined (and gazetted) as a 'Port', including a Port Operating Agreement being negotiated between the port operator and the Minister.
10. Prior to the use of the facility for shipping purposes, the Port will be required to be defined under the *Harbors and Navigation Act 1993* as a harbor and a port, and that the proponent (or port operator) will be required to enter into a port operating agreement with

the Minister for Transport. The port may be a compulsory pilotage area. Usage of the name 'Port Spencer' is subject to formal approval pursuant to the *Geographical Names Act 1991*.

11. Pursuant to the *Road Traffic Act 1961*, the proponent will need to seek approval from the Department of Planning, Transport and Infrastructure (DPTI), as delegated by the Minister for Transport, for authority to access the construction site with vehicles that do not fall within the definition of 'General Access Vehicle'. This might include such things as construction equipment and vehicles carrying large indivisible construction materials. The proponent will also need to give consideration to application for access to enable Restricted Access Vehicles to have regular access to a network of roads to facilitate the Port's business. This might include access for Road Trains or B-Doubles to transport commodities to and from the Port. If the road network required is not already Gazetted as an approved route for the type of vehicle required, then an application must be made to DPTI to amend the Gazetted route.

An important initial step, as outlined in the Heavy Vehicle Access Framework, is to have an assessment of the route undertaken by an Authorised Route Assessor, at the applicant's cost. This process will identify any upgrades required to make the route safe and suitable for the type of vehicle access requested. As part of the approval/s, the proponent will be required to prepare a list of final transport infrastructure improvement needs upon completion of a full route assessment and the proponent's resolution on double road train/triple road train option. This list should identify the scope, timing and estimated cost of the required improvements. Based on the list, the proponent will be required to enter a Deed of Agreement with DPTI regarding delivery of the infrastructure identified in the list of improvement needs. DPTI will require the assessment of proposed routes any road improvements that are required to cater for the movement of heavy vehicles associated with the mine and Port to be funded by the proponent.

12. The applicant is reminded of its obligations under the *Aboriginal Heritage Act 1988* whereby any "clearance" work, which may require permission to disturb damage or destroy Aboriginal Sites, must be undertaken with the full authorisation of the Minister for Aboriginal Affairs and Reconciliation, according to Section 23 of the *Aboriginal Heritage Act 1988*.
13. The applicant, and all agents, employees and contractors, such as construction crews, must be conversant with the provisions of the *Aboriginal Heritage Act 1988*, particularly the requirement to immediately contact the Department of Aboriginal Affairs and Reconciliation in the event that archaeological items (especially skeletal material) are uncovered during earthmoving.

14. The applicant is reminded of its obligations under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, not to undertake any activity that could have a significant effect on any matter of National Environmental Significance, without the approval of the Federal Minister for Sustainability, Environment, Water, Population and Communities.
15. As foreign vessels are allowed to port in the marina the proponent would need to consult with Transport SA (Marine Safety Section) to address any requirements of the Australian Quarantine Inspection Service (AQIS) and Australian Customs Service.
16. The wastewater treatment system shall be designed to ensure that the general obligations of the *Environment Protection (Water Quality) Policy 2003* are met, and to ensure that effluent does not overflow or escape from drains, pipes, sumps, tanks, storage/treatment basins into any watercourse, or into stormwater drains which do not drain into the effluent collection, treatment and disposal system, except where the effluent complies with criteria in the above Policy.
17. The Minister has a specific power to require testing, monitoring and auditing under Section 48C of the *Development Act 1993*.

## 10 REFERENCES

1. Development Assessment Commission, South Australia, *Guidelines for the Preparation of a Public Environmental Report for the Sheep Hill Deep Water Port Facility (Stage 1) on Eyre Peninsula Proposal by Centrex Metals Ltd*, April 2011.
2. Centrex Metals Limited, *Port Spencer Stage 1 Public Environmental Report* (Volumes 1-5). Prepared by Golder Associates Pty Ltd, February 2012.
3. Centrex Metals Limited, *Port Spencer Stage 1: Response to Public Environmental Report Submissions*. Prepared by Golder Associates Pty Ltd, October 2012.

## 11 GLOSSARY

The Act	<i>Development Act 1993</i> and Regulations 2008
AHD	Australian Height Datum
AR	Assessment Report
DAC	Development Assessment Commission
DEWNR	Department of Water, Environment & Natural Resources
DPTI	Department of Planning, Transport & Infrastructure
DMITRE	Department of Manufacturing, Innovation, Trade, Resources & Energy
EMMP	Environmental Management & Monitoring Plan
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
NPW Act	National Parks and Wildlife Act 1972
NVC	Native Vegetation Council
PER	Public Environmental Report
RD	Response Document
SEB	Significant Environmental Benefit
SEWPaC	Australian Government Department of Sustainability, Environment, Water, Population & Communities