Stage 3 Expansion of Abbot Point Coal Terminal
Initial Advice Statement

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1 OVERVIEW OF THE PROPOSED PROJECT

1.1 Scope of this Initial Advice Statement

The Ports Corporation of Queensland (PCQ) is the owner of the Abbot Point Coal Terminal, located at Abbot Point to the north of Bowen on the Central Queensland coast. PCQ are proposing to carry out the Stage 3 Expansion of the terminal in order to increase the handling capacity to around 50 million tonnes per annum (Mtpa).

PCQ will seek gazettal of the project by the Coordinator General as a 'significant project' under the *State Development and Public Works Organisation Act 1971*. Accordingly, this Initial Advice Statement (IAS) had been prepared for PCQ to provide a description of the proposed project and enable scoping of the potential impacts that will be investigated as part of the preparation of an Environmental Impact Statement (EIS). The information in this IAS, combined with the requirements of regulatory agencies and submissions received for other stakeholders and the community, will enable the subsequent preparation of Terms of Reference (TOR) for the EIS.

1.2 Project Location

The existing Abbot Point Coal Terminal is located approximately 25km to the north west of Bowen (Figure 1-1). The existing terminal was commissioned in 1984. The terminal is accessed by a private road (owned by PCQ) from the Bruce Highway and by a dedicated rail line that carries coal from two mines in the Bowen Basin ie. Newlands Mine and Collinsville Mine. On-shore facilities are located within Bowen Shire, while off-shore infrastructure is located within the Port of Abbot Point limits (Figure 1-1). The existing berthing facilities are located approximately 2.8km off-shore. Port limits overlaps with the Great Barrier Reef Marine Park (GBRMP), but the area surrounding the offshore jetty and berth is excluded from the Marine Park.

1.3 The Proponent

PCQ is the proponent for the project. PCQ is a Government Owned Corporation and owns the Abbot Point Coal Terminal. PCQ is responsible for the management and development of 13 ports in Queensland, the largest being the ports of Hay Point, Abbot Point and Weipa.

The Abbot Point Coal Terminal is operated under an operating and maintenance contract with PCQ by Abbot Point Bulkcoal Pty Limited (APB), a subsidiary of Xstrata Coal Pty Ltd.

1.4 Project Scope

The scope of the project encompasses the construction works and subsequent operation involved in the Stage 3 Expansion of the Abbot Point Coal Terminal, which will upgrade the capacity of the terminal to a throughput of up to 50 million tonnes per annum (Mtpa).

The existing terminal has a capacity of 15-18 Mtpa, but PCQ has separately sought approvals to carry out the Stage 2 Expansion of the terminal, which will increase the capacity up to 25 Mtpa. This Stage 2 Expansion is limited to expansion of the stockyard and the speeding up of conveyors. The Stage 2

Expansion is expected to be commissioned in 2007, if appropriate government approvals are obtained. The Stage 3 Expansion will complement the Stage 2 Expansion, but is much larger in scope and involves off-shore works.

The EIS will not study the impacts of the Stage 2 Expansion, which is being studied separately. However, the EIS will cover the impacts associated with the construction of the Stage 3 Expansion, as well as the potential impacts of operation of the terminal for the full capacity of 50 Mtpa, as the net result of both expansions.

Key components of the proposed Stage 3 Expansion are as follows:

i a second rail loop and dump station and associated second inloading conveyor;

ii installation of a new stockyard bund and two new stockpile rows;

iii installation of up to three new stacker reclaimers (or equivalent), with a new yard conveyor and transfer towers;

iv installation of second outloading stream to the offshore berth, using the existing jetty structure;

v installation of second berth and a second shiploader on the new berth;

vi dredging associated with the second berth; and

vii disposal of dredged material either on land or at sea.

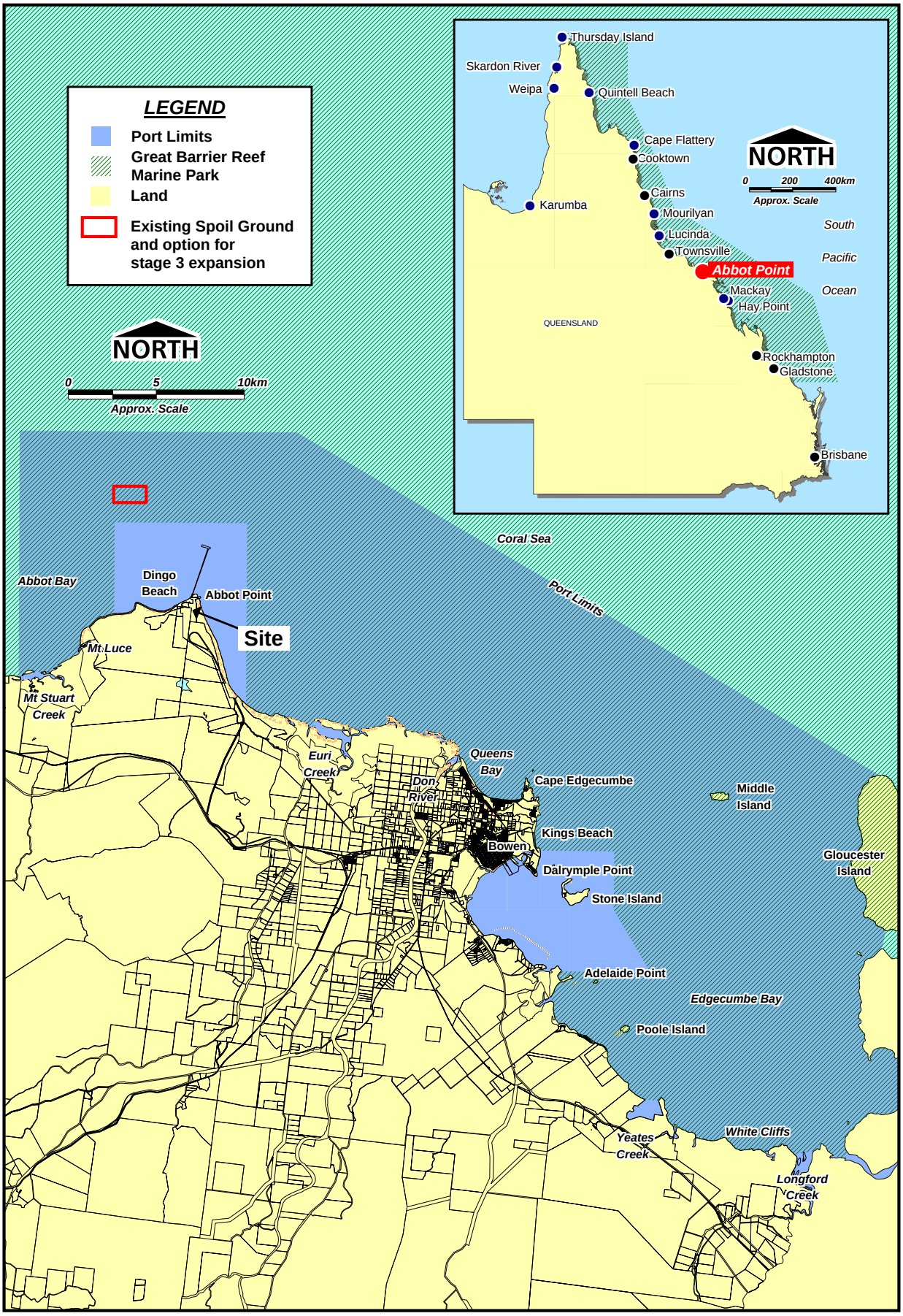
The new berth will be located either immediately to the east or west of the existing berth, dependent on engineering and environmental investigations.

Spoil volume estimates associated with dredging of the second berth are estimated to be around 100,000m^3, on an insitu basis. Two potential disposal sites for the dredged material have been identified:

- a site on land within the terminal area; or
- the sea spoil ground used in 1981 for the original terminal construction. This spoil ground is now within the Great Barrier Reef Marine Park following recent expansion of the Marine Park into the port waters.

Further information, such as the suitability of the dredged material for reuse on land and environmental issues associated with the sites, will be gathered in the EIS to finalise the selection. In addition, other sea disposal sites outside the Marine Park will be investigated in the EIS, however preliminary investigations have not identified any appropriate sites.

The above components are discussed in greater detail in Section 2.



Location - Port of Abbot Point **Figure 1-1**

1.5 Rationale for the Project and Project Background

The demand for export coal from Queensland coal fields has increased significantly in recent years. This demand is expected to continue, leading to increasing pressures on the handling capacity of the all coal terminals in Queensland. The Stage 2 Expansion of Abbot Point provides the needed capacity to support existing local mines shipping through the terminal. A major increase in demand for handling capacity at Abbot Point however is expected from completion of a "missing rail link" that will allow export of coal from mines in the Bowen Basin, other than the Newlands and Collinsville mines. This missing link is being investigated separately by Queensland Rail and approvals for this project are expected to be progressed in parallel with this Stage 3 Expansion EIS. The Stage 3 Expansion of Abbot Point would not proceed if the rail infrastructure project does not proceed.

The Stage 3 Expansion effectively duplicates the existing terminal infrastructure – providing a second rail loop and dump station, a second inloading and outloading conveyor stream, a second berth, a second shiploader and additional stockyard capacity. The terminal was originally designed with this duplication in mind and it provides a terminal with a nominal capacity of up to 50 Mtpa.

The preliminary estimate of the capital cost of the Stage 3 Expansion is $430 million in 2004 dollars. This estimate is based on two new stacker reclaiming machines in the Stage 3 Expansion as identified in the Master Plan for the terminal, with the third new machine being a project option to increase stockpile handling capacity if required, at an additional cost. Approvals are being sought for this optional third machine through the EIS process.

The proposed project as presented in this IAS addresses those issues related to the Abbot Point Coal Terminal site only, namely the upgrade of the infrastructure at the coal terminal, both on shore and offshore, including any shipping or dredging impacts. This EIS is not intended to address any issues outside the terminal site and will not study external issues, such as any changes to coal mines, the provision of the missing rail link, or any requirements to upgrade rail infrastructure on the rail route from these mines to the Port of Abbot Point and any associated impacts. These will be assessed as part of separate evaluation processes undertaken by other organisations.

1.6 EIS Process and Approvals

It is expected that the EIS for the project will proceed under the requirements of the *State Development and Public Works Organisation Act 1971*. This requires the proposed project to be designated by the Coordinator General as a 'significant project" and provides for public and government comment on both the draft Terms of Reference for the EIS and the draft EIS.

Under this arrangement, it is expected that the Department of State Development and Innovation will be the lead agency and State and Commonwealth bilateral arrangements for assessment processes will apply. Other key pieces of legislation that are expected to apply to the project are:

1. *Environment Protection (Sea Dumping) Act 1981 (Cth).*
2. *Environment Protection and Biodiversity Conservation Act 1999 (Cth).*
3. *Great Barrier Reef Marine Park Act 1975 (Cth).*
4. *Integrated Planning Act 1997 (Qld).*

5. *Environmental Protection Act 1994 (Qld).*
6. *Coastal Protection and Management Act 1995 (Qld).*
7. *Fisheries Act 1994 (Qld)*
8. *Aboriginal Cultural Heritage Act 2003 (Qld).*

Key considerations in regard to the above legislation are as follows:

Commonwealth Approvals

Sea Dumping Act

The *Environment Protection (Sea Dumping) Act 1981* (*Sea Dumping Act*) requires a permit to lawfully carry out disposal of dredge spoil at sea (including loading for the purposes of dumping dredge spoil). The Department of the Environment and Heritage (DEH) is the determining authority that administers the *Sea Dumping Act* and issues permits for all sea dumping activities. Australia's *National Ocean Disposal Guidelines for Dredged Material* (NODGDM) outline the application and assessment procedures associated with permits to dispose of material at sea under the Commonwealth *Sea Dumping Act.* The Minister may apply conditions to a permit on approval.

Environment Protection and Biodiversity Conservation Act 1999

In the situation where the project will have, or is likely to have, an impact on a matter of National Environmental Significance (NES), or is undertaken by the Commonwealth or on Commonwealth land, then the activity must be referred under the *Environment Protection and Biodiversity Conservation Act* or *EPBC Act*, and a decision made as to whether the activity is a 'controlled action'. The *EPBC Act* identifies seven matters of national environmental significance; several of which could apply to this project i.e. World heritage properties, Commonwealth marine areas, listed migratory species, and listed threatened species. The offshore works for construction of the new berth and the dredging of the berth pocket has the potential to trigger the Act.

Great Barrier Reef Marine Park Act 1975

If works are carried out in the Great Barrier Reef Marine Park, a permit will be required for the works. The berth construction and dredging are outside the Marine Park, so do not require a works permit. However, if the existing sea spoil ground is reused for relocation of dredged material (one project option), a permit will be required from the Great Barrier Reef Marine Park Authority (GBRMPA). In any case, the GBRMPA may be a referral agency for the project because of the marine works close to the Marine Park.

State Approvals

***Integrated Planning Act 1997* (*IPA*)**

IPA outlines the assessment and approval process (Integrated Development Assessment System (IDAS)) which is used for licences and permits required under, *inter alia*, the *Environmental Protection Act 1994* and *Coastal Protection and Management Act 1995* (*Coastal Act 1995*). The *Fisheries Act 1994* has recently been 'rolled-in' to *IPA*, which will mean that all approvals required under the *Fisheries Act* will now go through the IDAS process. As noted earlier, the EIS is expected

to be undertaken under the *State Development and Public Works Organisation Act 1971* (*SDPWO Act*) and its integrated approach under IDAS.

A development permit under *IPA will* be required. The following may need to be addressed:

- Material change of use for an Environmentally Relevant Activity (ERA) (as defined under the *Environmental Protection Act 1994 (Qld)*). This is likely to result from the duplication of infrastructure and the significant increase in terminal throughput;
- For operational work in a tidal area or in a coastal management district as defined by the *Coastal Protection and Management Act 1995 (Qld);*
- If the expansion was inconsistent with the current approved land use plan for the strategic port land, a material change of use (MCU) on strategic port land;
- Building work completely/partly seaward of a coastal building line;
- Operational work that is tidal work including disposing of dredge spoil in tidal water; and
- If acid sulfate soils are present, State Planning Policy (SPP 2/02) – *Planning and Managing Development Involving Acid Sulfate Soils* will apply.

Other Legislation and Policies

Further Queensland regulatory mechanisms which may need to be considered include:

- For the clearing of vegetation on State or freehold land, the *State Policy for Vegetation Management on Freehold Land* and the *Broadscale Tree Clearing Policy for State Lands* would apply*;*
- For conservation of biodiversity through use of regional ecosystems by the Environmental Protection Agency;
- State and Regional Coastal Management Plans – the State Coastal Plan includes policies which may need to be considered, including the Water Quality policy (including acid sulfate soils and groundwater quality), Coastal Use and Development Policy (including dredging) and Conserving Nature Policy (including Coastal Wetlands and Rehabilitation of Coastal Resources). The State Coastal Plan has the effect of a State Planning Policy;
- *Nature Conservation Act 1992* and *Regulations*;
- *Vegetation Management Act 1999*;
- *Native Title (Queensland) Act 1993*; and
- A*boriginal Cultural Heritage Act 2003* (*ACHA*). This states that a notified Cultural Heritage Management Plan (CHMP) is required if an EIS is undertaken. The *ACHA* also provides information on the nature and content of a CHMP, which is now a document registered by the Minister for Natural Resources and Mines.

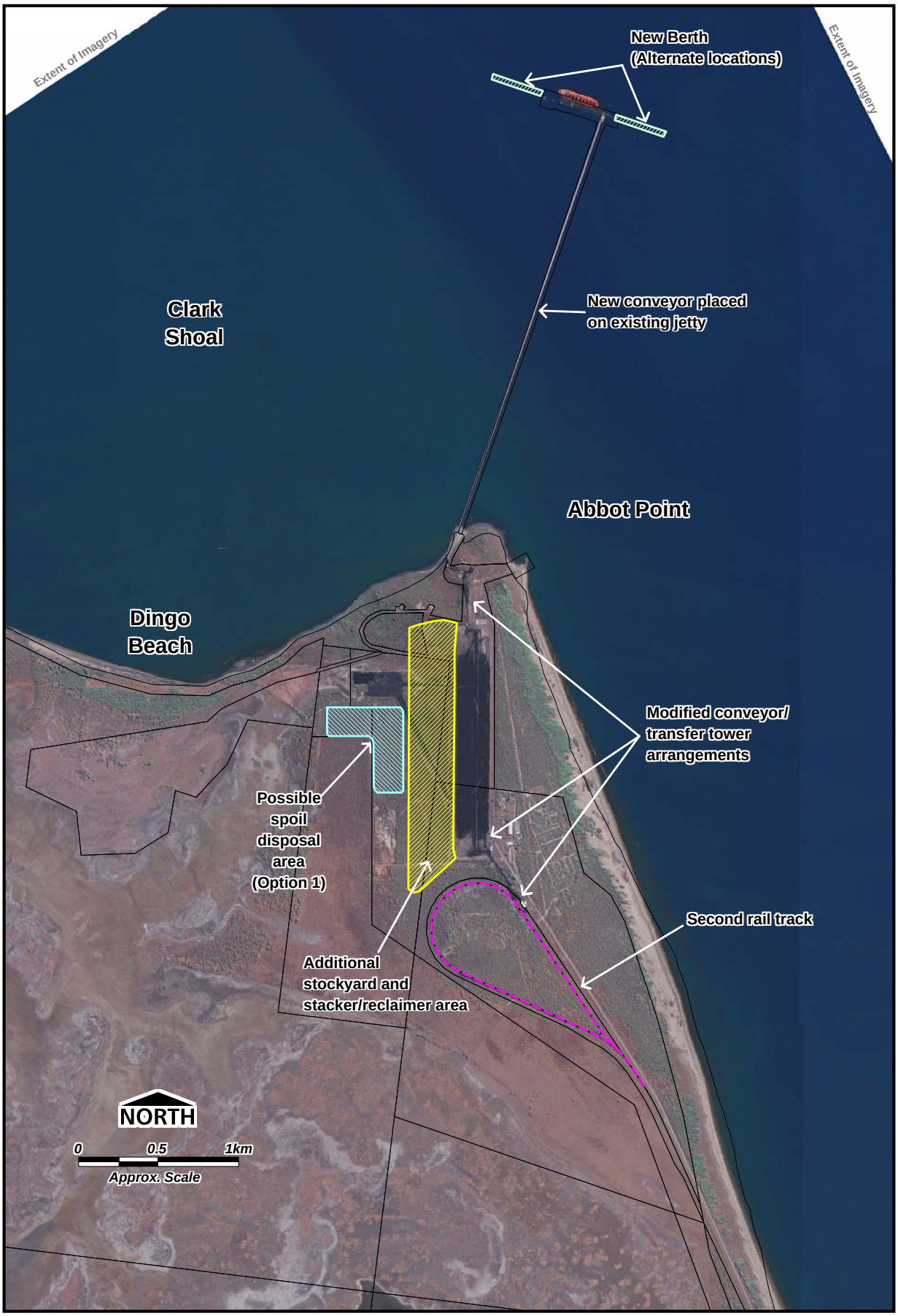
2 PROJECT DESCRIPTION

2.1 Proposed Development

Figure 2-1 presents details on the location and nature of the development proposed for the Port of Abbot Point while Figure 2-2 and Figure 2-3 present the details of the planned expansion at the ultimate extent of the works for Stage 3.

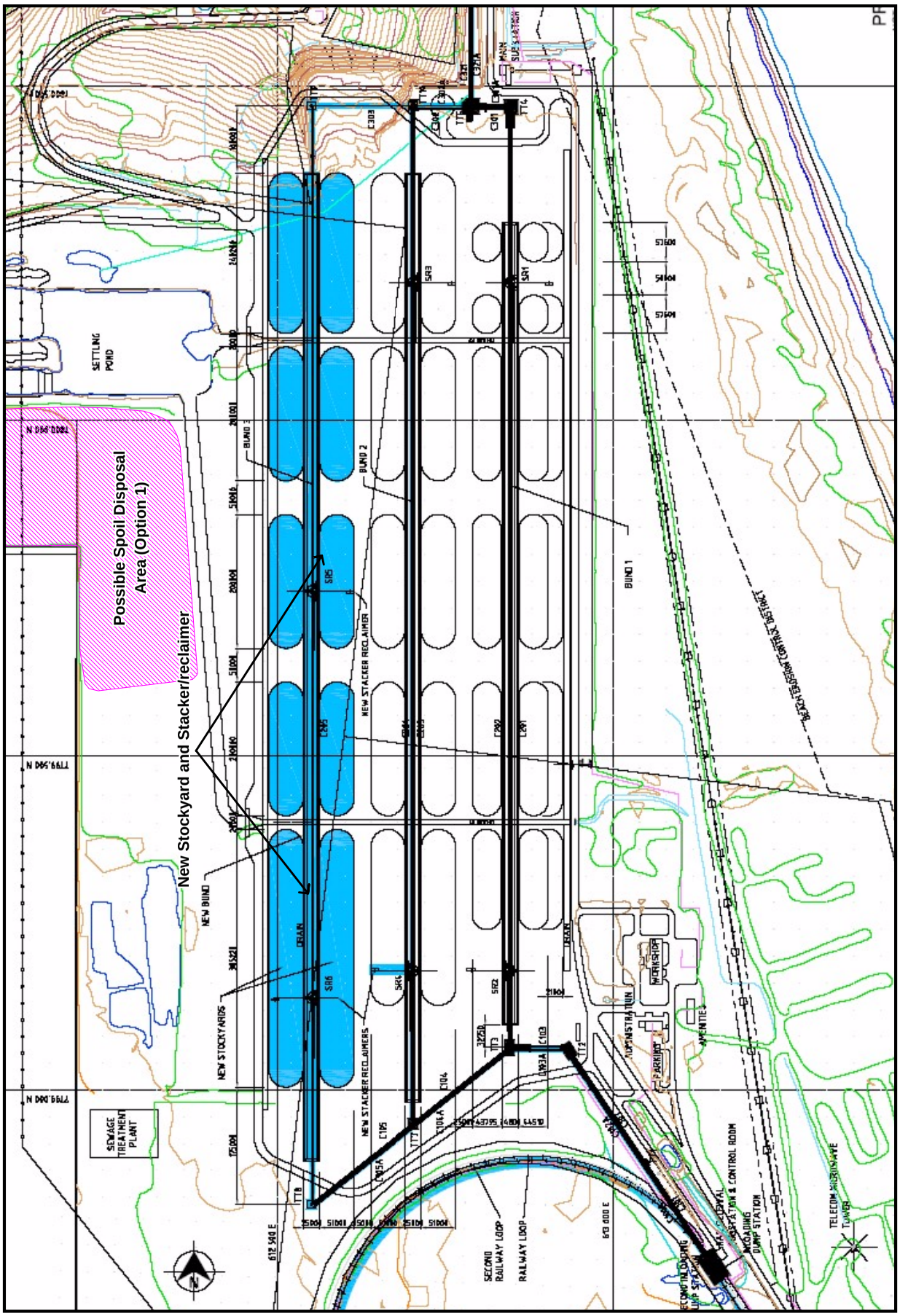
The scope of the Stage 3 Expansion is:

- a second rail loop adjacent to the existing rail loop, plus a new dump station at the rail receival area;
- a second inloading conveyor from the new dump station to the stockyard. Existing transfer towers in the inloading system will be modified as required to accommodate the second conveyor system;
- installation of a new stockyard bund and two new stockpile rows. This will bring the total number of stockpile rows to six. The construction of the new stockyard rows will involve the placement of principally imported fill, but this will also include the construction of a new alignment for the perimeter drain and new coal fines separation devices for water drainage from the new stockpile area;
- installation of up to three new stacker reclaimers (or two stacker reclaimers and one stacking machine), with a new yard conveyor and two transfer towers (Note: the third yard machine is a project option identified in the 2005 Master Plan for the terminal and has not been included in the estimated project cost);
- installation of second outloading stream from the stockyard to the offshore berth. The outloading conveyor over water will be located on the existing jetty structure, which was designed to accommodate the second conveyor system. Existing transfer towers in the outloading system will be modified to accommodate the second conveyor as required;
- installation of second berth. This will be either to the east or west of the existing berth;
- installation of a new shiploader on the new berth;
- dredging of a berth pocket associated with the second berth. Expected volume of dredging is in the order of 100,000 m^3 on an insitu basis. Dredging is expected to be carried out with a trailer suction dredge, or similar; and
- disposal of dredged material either on land or at sea. The land disposal option is within the terminal site to the west of the stockyard area. The sea disposal site is the site used previously for the original terminal construction. This sea disposal site is within port limits but is also in the Great Barrier Reef Marine Park because of an overlap of the two areas. The final choice will be recommended in the EIS after the appropriate scientific studies have been undertaken. This will include investigations of the suitability of the material for land disposal and a study of potential impacts of saline water drainage from land disposal on the adjacent wetlands.



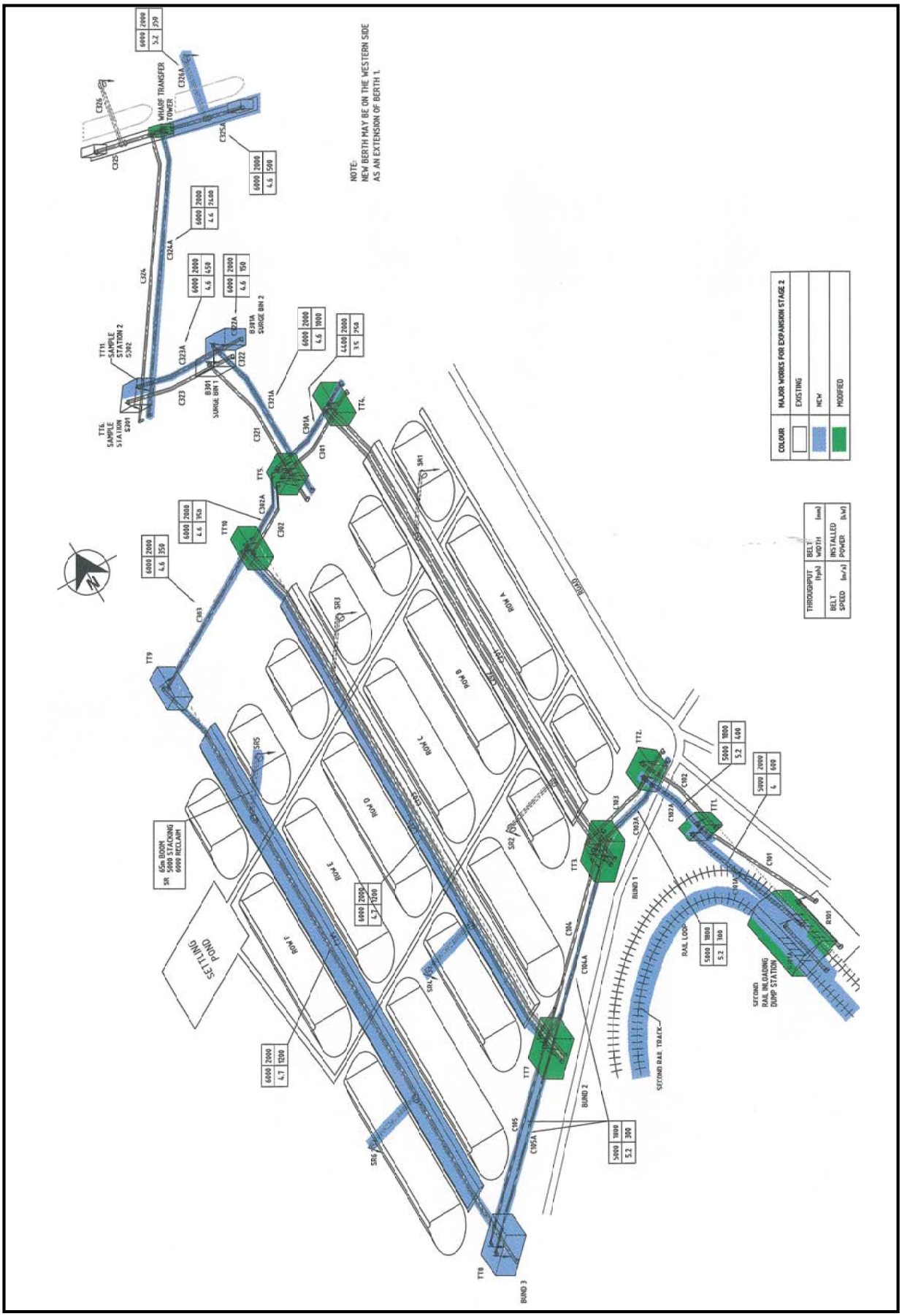
Location of Proposed Development - Port of Abbot Point

Figure 2-1



* Derived from Connell Hatch Drawing HD73-SK-C13 1

Extent of Stage 3 Development **Figure 2-2**



* Derived from Connell Hatch Drawing HD73-SK-P04 1

Process Flow Diagram - Stage 3 **Figure 2-3**

2.2 Associated Infrastructure Works

Electricity supply to the terminal will require upgrading for this project and the additional demand and supply infrastructure will be identified in the EIS. Rail infrastructure to the terminal will also require upgrading.

Impacts from the above infrastructure needs will be studied separately by the responsible agencies. Any further infrastructure needs will be further explored through the EIS process and documented if required.

2.3 Train Movements

The higher terminal throughput will require more coal delivery. Train movements may increase, but this will be balanced by a possible increase in train size. These changes will be quantified in the EIS if known. The effect of the change in size and number of trains in the rail loop area in terms of noise and dust impacts will be explored in the EIS. As discussed earlier, changes in train movements outside the terminal boundary will be explored separately by Queensland Rail as part of the rail system upgrading.

2.4 Employment

The existing terminal (Stage 1) has 48 permanent staff, with a large proportion of these on shift work. There are typically around 10 equivalent contractors on the site involved in a number of supporting activities, principally plant maintenance.

The Stage 3 Expansion construction program is expected to employ up to a peak workforce of 950 personnel in works associated with the expansion (on and off site). The number of permanent terminal operating staff and support contractors is expected to double compared to existing numbers, with an additional 50 employees expected for the operation of the terminal at its full capacity of 50 Mtpa.

2.5 Water Supply

The site is not currently connected to a potable town water supply. Potable water supplies for the site are derived from an on-site bore which is located within a freshwater aquifer adjacent to the coastal dunal system. This is supplemented with potable water brought in by truck as required. Additional water for the construction workforce is expected to be trucked in to meet the peak workforce requirements. The proposed increase in permanent staffing numbers at the site will increase existing water usage.

Section 3.5 describes the current groundwater supply for the site operational uses. It is expected that there will be some increased demand for operational water to be sourced from the existing borefield which is located at Splitters Creek approximately 25km to the south west of the site. This may require the construction of additional bores. The volume increase needed will be established in the EIS. An additional external water supply will also be investigated in the EIS to supplement the bore and trucked water supply.

2.6 Road Access

The access road from the Bruce Highway to the terminal is privately owned by PCQ and is generally used only by terminal staff and contractors, plus other authorised users. The small increase in the number of permanent personnel to be employed at the site will have negligible effect on the existing road infrastructure. The impact during the construction phase will be explored in the EIS. The impact on the Bruce Highway will be submitted to the Department of Main Roads.

2.7 Shipping Movements

In 2003/04, 121 ships visited the Port of Abbot Point for an export of just over 12 million tonnes of coal per year. The impact of increasing the coal exports to 50 Mtpa on shipping will be studied. Likely ship numbers will be around 500 ships per year. There are expected to be no significant changes to existing navigational or anchorage requirements, but the EIS will explore this.

3 EXISTING ENVIRONMENT

3.1 Land Tenure

The port precinct at Abbot Point held by PCQ comprises approximately 669ha of land of which 334ha is currently used for the stockpiling/loading facilities and terminal operation, 47ha for two quarries, 37ha for the existing road and rail access to the port and 251ha for Buffer Zones and other uses.

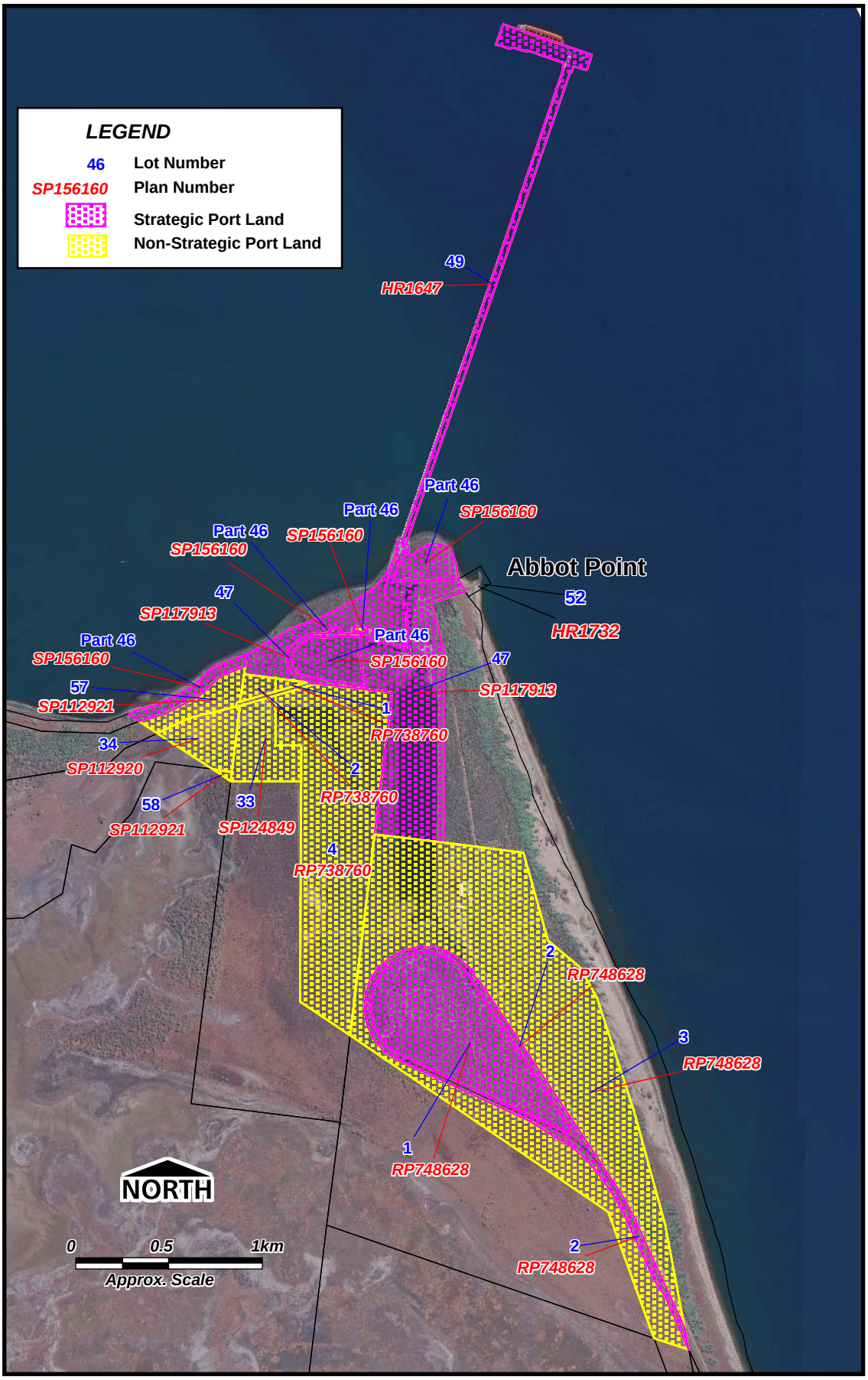
The lots comprising the terminal are shown in Figure 3-1. The terminal land is currently a mixture of strategic and non-strategic port land as shown below.

Table 3-1 Terminal Area – Land use Designation

Description	Use (both current and proposed)	Strategic Port Land	Approved Land Use
Lot 3 on RP 748628 Area: 142.0551 ha	Stockpile area and buildings	No	Particular Development – Coal Loader [1]
Lot 46 on SP 156160 (part) Area: Approx. 18.65 ha of 280 ha lot	Outloading system, stockpiles	Yes	Port related and support industry and buffer [2]
Lot 47 on SP117913 Area: 48.56 ha	Outloading system, stockpile area	Yes	Loading facilities [2]
Lot 49 on HR1647 Area: 14.19 ha	Offshore wharf & trestle	Yes	Loading facilities [2]
Lot 1 on RP748628 Area: 3.57 ha	Rail line	Yes	Rail line [2]
Lot 2 on RP 748628 Area: 4.67 ha	Access Road	Yes	Access Road [2]
Lots 1, 2 & 4 on RP738760 Area: 75.1 ha	Coal terminal activities	No	Particular Development-Coal Loader [1]
Lot 33 on SP124849 Area: 11.98 ha	Coal terminal activities	No	Particular Development – Coal Loader [1]
Lot 34 on SP112920 Area: 8.922 ha	Coal terminal activities	No	Particular Development-Power Station[1]
Lots 57 & 58 on SP112921 Area: 6.53 ha	Coal terminal activities	No	Particular Development-Power Station[1]

Notes:
1: Land use designation by Bowen Shire Council.
2: Land Use as approved by Minister for Transport. Gazetted on 12 January 1996, with an approved amendment gazetted on 26 October 2001.

PCQ is currently going through a process to have any of the above non-strategic port land designated as strategic port land. These changes should be in place prior to the completion of the Draft EIS.



Abbot Point Coal Terminal Land **Figure 3-1**

All of the terminal land on shore is freehold land owned by PCQ, while the offshore property is perpetual lease held by PCQ.

The area used for the construction camp for the original terminal construction is on Lot 2 on RP 748628 and part of Lot 46 on SP156160. It will be considered for use by construction staff for office accommodation and equipment storage and lay-down in addition to areas adjacent to the stockpile area. There will not be any overnight accommodation for workers on these areas. They will be expected to seek accommodation in Bowen.

The construction load-out jetty used in the original construction on Lot 52 on HR1732 is also likely be repaired and reinstated for use in transferring piles offshore for the construction of the new berth.

3.2 Climate

The climate at the Port of Abbot Point is dry tropical with dry winters and wet humid summers and strongly influenced by maritime forces. The majority (80%) of the annual rainfall of 1050mm (as recorded at the Bowen Meteorological Station) falls between December and March and peak rainfall periods are often associated with cyclonic events. The warmest months in the Bowen area are from November to March, with mean daily maxima exceeding 30^{o}C and averaging 24^{o}C in winter. Winds predominate from the south east to east throughout the year.

3.3 Geology and Soils

The landform within the PCQ holdings varies from the relatively prominent hillock of Bald Hill to low coastal sand dunes and plains and adjacent saline marsh areas and brackish wetlands. Marine clays associated with the Abbot Point - Caley Valley Wetland Aggregation are found to the west of the site.

The proposed expanded stockyard area and associated stacker/reclaimers will be located on an area of Quaternary coastal dune and sand plains derived from wind action. The stockyard will be located mainly on imported fill sourced from the region. The construction of the new alignment of the perimeter drain that collects runoff and dust suppression water from the stockyard area will involve excavation of soil to a depth up to 2m below the existing ground level which varies between 3 to 5m AHD. Because these works would be located below 5m AHD, a preliminary acid sulfate soil investigation has been undertaken (WBM 2005). This found that those soils below 5m AHD likely to be disturbed for the perimeter drain comprised primarily aeolian sands with negligible potential for acid sulfate material being present within the proposed depth of excavation.

If the dredge spoil containment area is established on lands immediately to the west of the proposed new stockyard (one option), it has implications for seepage of saline water to the adjacent soils and wetlands to the west of the site. This is addressed in Section 3.4 below.

3.4 Hydrology and Water Quality – Terrestrial Area

The existing facilities at the site are not subject to inundation by floodwaters and the proposed works will also be constructed to a level above maximum floodwater height.

The terminal has a drainage and sediment control system to direct most drainage from the coal operational areas first to a primary settlement pond, which then flows into secondary settlement pond. Water collected in the primary pond is recycled and used for washdown water. These ponds will be retained in the expanded terminal. The existing pond will be retained in its current configuration as the original sizing was based on the ultimate extent of the stockyard area proposed with the expansion.

There are three coal fines separation/ collection devices and a number of sediment sumps in the drainage network to remove solids from the water. These systems will be incorporated into the expanded terminal with similar systems being installed for the new coal stockpile areas.

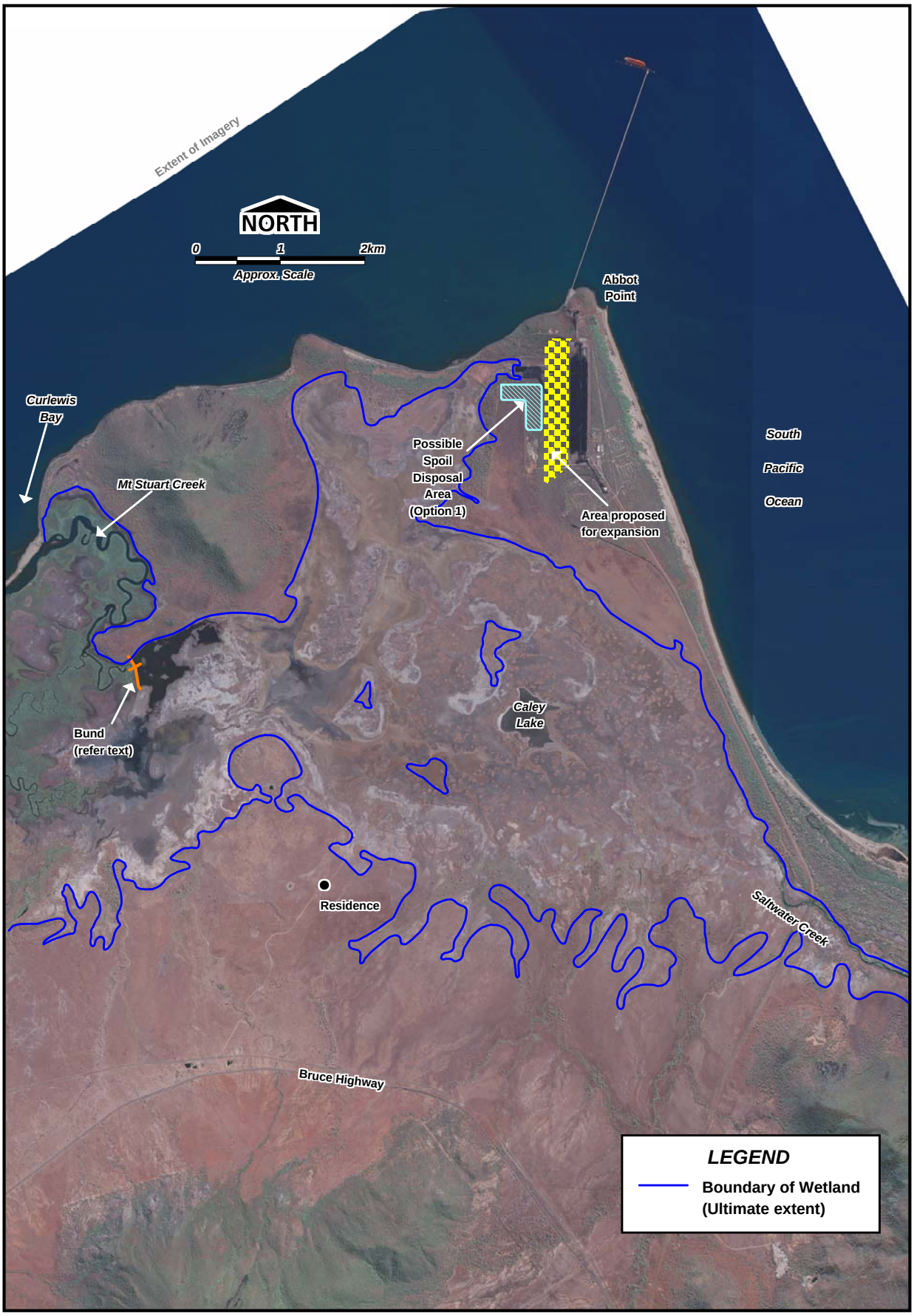
There are four existing stormwater discharge points at the terminal. Water will be discharged only during high flow events and water is sampled on discharge. At other times, water is pumped back from the sediment sumps to the primary sediment settlement pond under level control from the collection cells.

The secondary settlement pond discharges to Lake Caley, which is within the Abbot Point- Caley Valley Wetland, however these discharges are rare due to the large holding volume in the secondary settlement pond, with the secondary settlement pond empty for most of the year.

Significant rainfall over an extended period is required to cause discharge from the secondary pond- this has only occurred once in the last few years. Past monitoring has shown that the quality of any discharge from the secondary pond is high due to the long settling time in the pond, plus the dilution from high rainfall if a discharge occurs.

The wetland to the west of the PCQ holding – the Abbot Point – Caley Valley Wetland – is listed in the Directory of Important Wetlands in Australian (ANCA 1996 and updated 2001). The approximate extent of the wetland in relation to the Abbot Point Coal Terminal is shown on Figure 3-2.

The Directory notes that the wetland, which has an area at the full extent of inundation of 5154ha, comprises fresh to brackish seasonally variable water quality with a central water body, Lake Caley, being brackish.



Abbot Point - Caley Valley Wetland **Figure 3-2**

3.5 Groundwater

Investigations conducted for the original Impact Assessment Study for the Abbot Point Terminal indicated the presence of a small freshwater aquifer on the back dune area of the site. Predominantly saline groundwaters were found immediately to the west of the development site associated with a saline clay substrate. Peter Hollingsworth and Associates (1979) noted that Lake Caley does not receive any significant recharge from groundwater reservoirs nor does it act as a source of recharge of groundwater reservoirs. There are no existing bores within 5km of the development that are used for domestic or stock purposes.

Water supplies for the existing Abbot Point operations are sourced from a borefield located near Splitters Creek on the Salisbury Downs Station approximately 25km to the south west and piped to the terminal reservoir on Bald Hill. It is understood that the Abbot Point requirements are the only significant demands on this aquifer and that there has not been a failure in this supply. The historical use of water will be quantified and documented in the EIS. The effects of increased water use associated with the expansion will be explored in the EIS.

3.6 Terrestrial Flora and Fauna

Terrestrial flora and fauna investigations have been conducted at the site and adjacent wetlands as part of the original Impact Assessment Study (Peter Hollingsworth and Associates, 1979), the EPA (1999) and by Ecoserve (2005). The PCQ lands which will be directly impacted by the proposed expansion, i.e. the expanded stockyard and spoil disposal area, comprises principally cleared or regrowth melaleuca woodland, as well as limited remnant Regional Ecosystem 11.3.12 i.e. '*Melaleuca viridiflora* woodland on Cainozoic alluvial plains' (classified as 'not of concern' under the *Vegetation Management Act 1999*). Remnant vegetation will be cleared for development of the new infrastructure and the exact area will be estimated through the EIS process.

Migratory bird species and waterfowl use the adjacent wetland in the wet season. The only expected impact may be reduced water from the terminal due to increased water demand on the site, however water overflows from the terminal are already infrequent. Impacts on the wetlands will be explored in the EIS.

3.7 Marine and Intertidal Environment

3.7.1 Flora and Fauna

Investigations into the intertidal and marine environment in proximity to the port have been conducted as part of the original Impact Assessment Study (Peter Hollingsworth and Associates, 1979) and Ottaway *et al* (1989). The latter study involved a comprehensive assessment of the off-shore and intertidal areas over a number of years encompassing the pre-construction, construction and initial operating period of the Abbot Point facility.

The study by Ottaway *et al* (1989) documented the baseline marine environmental assessment for the port facilities and concluded that there were no rare or endangered marine species in the offshore area and no marine community types of any significance were identified.

Intertidal habitats closest to the Port have been described as typical of the north Central Queensland coast consisting of sandy beaches, boulder beaches and low rocky platforms. The nearshore subtidal area is dominated by sand sheets while the offshore subtidal habitats are predominantly broad and gently sloping sheets of silty sands, which are subject to commercial prawn trawling activities.

Clark Shoal comprises a sandy shoal area and lies 1.7km due west of the existing berth (Figure 2-1). There appears to be little, if any, reefal developments in this area. The closest fringing rock reefs occur near the rocky headlands of Cape Edgecumbe and Dalrymple Point and also encircle nearby islands, particularly Stone Island. These support up to 50% cover of hard and soft corals, with the closest of these located approximately 15.5km southeast of the berth (PCQ 2005).

Intermittent seagrass patches have been reported in some shallower off-shore areas. For example, while the DPIF (Department of Primary Industries & Fisheries) CHRIS database identifies seagrass meadows adjacent to the existing jetty (derived from 1984-88 mapping), the study by Ottaway *et al* (1989) identified no seagrass beds in proximity to the facilities. The DPIF have noted that seagrass beds (when they do occur) are patchy, highly variable and are comprised principally of *Halophila* species. More significant beds are found towards the Edgecumbe Bay area. Another survey of seagrass is being carried out in 2005 for the EIS.

A diverse range of marine wildlife including seasnakes, turtles and dugongs has been reported in the areas within the wider port limits. In particular, turtle surveys in port waters have highlighted the importance of the local area for both green and loggerhead turtles. A recent twelve-month study commissioned by PCQ and undertaken by the Queensland Parks and Wildlife Service (QPWS), demonstrated that there are several nesting areas within the wider port limits, although none were close to the Abbot Point facilities. In particular, nine nests were observed along the beach between Euri Creek and the coastal terminal during the study, whilst eight nests were observed along the beaches in Brisk Bay, which is in the southern section of Edgecumbe Bay (Bell 2003). The QPWS study also identified a number of important foraging areas around the wider port area that are used by the local turtle population. To the south of Abbot Point, green turtles were observed foraging in low density seagrass beds in the creek systems and associated coastal flats around and between Euri Creek and the Don River (Bell 2003).

The study by Ottaway, *et al*. (1989) provides a detailed description of marine fauna in the local Abbot Point area. This study indicated that:

- Generally low community densities were present in the in-shore areas;
- The off-shore areas (i.e. deeper than 15m) were relatively impoverished in terms of species richness, abundance and biomass;
- The intertidal shores are mostly covered in sand or small boulders and are relatively depauperate in terms of species richness and density; and
- A significant artificial reef community had developed as a consequence of the new subtidal habitats (i.e. the jetty/trestle structure, berths and causeway).

As noted earlier, the disposal of spoil in the off-shore area in the early 1980s was shown to have had minimal impact on marine fauna.

3.7.2 Marine Water Quality

The coastal environment off-shore from the Port of Abbot Point has experienced minimal adverse water quality impacts due to the largely undeveloped hinterland, absence of major industries and generally low population.

Likely impacts on water quality resulting from dredging and spoil disposal to off-shore areas include:

- Mobilisation of seabed sediments into the water column resulting in increased turbidity levels; and
- Mobilisation and release of contaminants from sediments into the water column, if any are present.

Given the prevailing wind and current patterns in the area i.e. predominantly from the south-east, it is expected that most turbid plumes generated by dredging and spoil disposal will move towards the north-west with sustained periods of off-shore winds directing plumes towards the coast. The Clark Shoal to the immediate west of the berths comprises a relatively shallow (2-4m deep) sandy platform and would be the area most likely to experience any adverse impacts in this regard.

Investigations into the quality of the sediment to be dredged have yet to be undertaken, but sediments in the area to be dredged will be tested for contaminants to ensure full compliance with DEH's National Ocean Disposal Guidelines.

Ottaway *et al* (1989) studied the impacts of the original berth dredging, which was of a similar scale to the proposed dredging. It was concluded that the dredging did not have any significant impact on the marine environment.

3.7.3 Coastal and Marine Processes

Studies conducted for the original Impact Assessment Study in 1978 indicated a nett south to north littoral drift of 18,000m^3/annum. Ebb and flood tides were noted as being of low velocity (maximum of 0.5m/sec). The absence of significant infilling of the existing berth pocket since the initial dredging of 1981/82 combined with an absence of coastal erosion indicates that the area has a relatively stable beach line and seabed.

The relatively deep waters in the area off-shore from the berth mean that seafloor sediments may be only resuspended and transported during moderate to extreme wind and wave events.

3.7.4 Fisheries

A commercial fishing fleet is located at Bowen and is understood to operate in the off-shore areas of Abbot Point targeting prawns (mainly banana and king prawns), mud crabs, barramundi, threadfin salmon, grunter and flathead. The shipping access and departure paths are located within a maritime safety zone where boats are not permitted to fish. The zone will be expanded to include the new berth. It is not expected that the increased numbers of ships will affect commercial or recreational fishing in the area, or that the extra berth will restrict fishing significantly more than at present.

3.8 Noise

Existing noise sources at Abbot Point comprise the on-shore coal handling facilities (including coal train movement and unloading) and off-shore activities including the conveyors and ship-loading.

The area surrounding the terminal is largely used for grazing. The closest residential area is in Bowen, 25 kilometres to the south. The nearest single residence is located approximately 5km to the south west of the rail loop. As such, the existing operations would be inaudible from the nearest established settlements. The terminal does not receive any noise complaints.

3.9 Air Quality

As with noise, the relative isolation of the site means that there would be no existing adverse impacts on air quality as they affect the nearest areas of settlement. Air modelling of coal dust emissions will be carried out in the EIS to quantify any potential changes.

3.10 Cultural Heritage

A full cultural heritage assessment of Port land was commissioned by PCQ in 1999 and is documented in a report by Barker (1999).

The Abbot Point region shows evidence of extensive and large scale Aboriginal activity. Areas of cultural heritage value were located at the Port of Abbot Point during the cultural heritage survey as follows:

- The beach dunes, consisting of a continuous scatter of Aboriginal cultural material wherever exposure has allowed the dune to deflate, uncovering an extensive range of archaeological remains. The greatest density of cultural material is located between 1.8 and 3.5km from the sea wall.
- This site is considered to be of high cultural heritage significance in regard to the Aboriginal community, scientific value, research potential and representativeness. Abbot Point beach is still recognised today as an important 'cultural' place by the wider Aboriginal community.
- This beach area is incorporated within the buffer zone of the Port of Abbot Point Strategic Plan and will not be impacted by the proposed development.
- Mangrove ridges associated with Lot 46 (see Figure 3-1) consisting of intermittent concentrations of shell midden material only occasionally associated with stone artefacts over a very thin and mostly continuous background of cultural shell material. Concentrations of midden material occur on a series of sand beach ridges, which run parallel to the shoreline within thick mangrove. This area is similarly of cultural significance. It is well distanced from the proposed development and should not be impacted in any way.

3.11 Land Use and Planning

The site is remote. It is 25 kilometres north of Bowen, which is the closest area of residential community. The site has the ocean on two sides. The terminal is surrounded on the land side by vast

areas used for cattle grazing. Natural woodland has been retained by the terminal around the site boundary to provide a buffer zone around operations.

Although the adjacent land is used for grazing, the land to the west of the terminal is zoned by the Bowen Shire Council for industrial development, designated in the Town Plan as "Particular Development – Power Station". A significant proportion of this land is owned by a holding company of the terminal operator (Colinta Holdings Pty Ltd). To the south of the terminal site, adjoining land is principally zoned as "Rural Grazing" and is owned by industrial companies associated with the Terminal to provide a large buffer zone. Other adjoining land to the south is owned by Ports Corporation of Queensland and is zoned by the Bowen Shire Council as "Particular Development" for "Railway" and "Port". There is no privately owned land (other than the industrial companies noted above) adjoining the terminal. Around 7 kilometres south of the terminal site, a privately owned site (Lot 3 on RP 737838, Lot 1 on RP708434, Lot 122 on K124108 and Lot 194 on K124309) has been previously approved for a resort development, however there has been no development of the site to-date. Other land to the south is privately owned undeveloped grazing land.

The access road from the highway leading to the terminal is a private road owned by PCQ, which restricts the use of any privately owned land in the area.

3.12 Socio- Economic Issues

The nearest settlement to Abbot Point is Bowen, approximately 25km by road from the site. The main socio-economic issues associated with the project will be large positive economic benefits for local Bowen businesses and employment, with a doubling of the permanent site workforce when the terminal reaches its full capacity, but principally during the construction phase with a peak workforce estimated at 950 personnel. Less desirable issues may be the increased demands on local services, particularly accommodation, during the construction phase. Businesses in the region are also likely to benefit from any increase in coal exports from the port and the project will provide significant long term benefits for the region and State.

4 POTENTIAL ENVIRONMENTAL IMPACTS OF THE EXPANSION

The following outlines the key areas of potential impact of the project and investigation areas to be conducted for the EIS.

Geology and Soils

Investigations conducted into the potential presence of acid sulfate soils close to the proposed disturbance area indicated an absence of potential acid sulfate material. The area of development is located on flat land with minimal potential for erosion. However, further testing for acid sulphate soil in the area of development will be carried out as part of the EIS investigations.

Potential saline seepage from the spoil disposal area, if located on land, may cause some salinisation of adjacent lands. The area of potential impact in this regard will be investigated in the EIS.

Hydrology and water quality

The proposed development area is not prone to flooding. In terms of impacts on water quality due to the expanded area of the coal stockyards, the development is expected to show little change from existing quality as is currently monitored at the settling ponds to the west of the operations area. The effects of the increased stockyard area on water quality will nevertheless be investigated in the EIS.

Section 3.4 noted the issue of the proximity of the development to the Abbot Point-Caley Valley Wetland and the water quality of this wetland. The possible seepage of saline water from the proposed spoil containment area, if on land, is expected to have minimal impact on the wetland water quality given the prevailing elevated salinity levels of the wetland and relatively minor volume of saline water that will emanate from the storage. This will be investigated in detail in the EIS (see comments below regarding water quality impacts on flora and fauna values).

Groundwater

Possible increased water supply demands that may result from the expansion will be quantified in the EIS and the effect on the Splitters Creek borefield will be investigated.

Terrestrial flora and fauna

The development will include the clearing of vegetation, principally regrowth vegetation, but potentially some remnant vegetation from RE 11.3.12 (classified as 'not of concern'). This remnant ecosystem is extensive in the region, therefore impacts are not expected to be significant.

As noted above, the effects of the seepage of saline water from the spoil disposal area towards the Abbot Point- Caley Valley Wetland (and associated issues with effects on the wetland flora and fauna) will be investigated in the EIS.

Marine and intertidal flora and fauna

If sea disposal of the dredged material is carried out, the small volume of material to be dredged is considered likely to result in minimal environmental impact to intertidal and marine ecosystems in proximity to Abbot Point This likely outcome has been confirmed through previous investigations

reported in Ottaway *et al* (1989) of the original berth dredging and construction. Investigations into the existing ecological values of the off-shore areas are currently being conducted by the DPIF as part of the information development for the EIS. This will enable an assessment of the potential impacts of spoil disposal from the proposed operations on these values, should off-shore disposal be recommended.

With the expected increase in the number of vessels visiting the port, the EIS will need to address the potential for increased risk of introduction of marine pests through ballast water.

Marine water quality

Existing information indicates that the quality of spoil likely to be dredged is not contaminated. Further sediment sampling will be carried out as part of the EIS process in order to determine the potential impacts of off-shore disposal on marine biota or disposal of the spoil to the on-shore area.

Coastal and marine processes

If sea disposal of the dredged material is carried out, the small volumes of material to be dredged and disposed off-shore is likely to result in minimal impact on coastal processes. The potential for infilling of the berth area and resuspension and transport of sediments from the ocean disposal ground will be assessed as part of the EIS, if sea disposal is proposed.

Noise

Noise impacts on settlements due to the construction of the new facilities and increased output are expected to be unnoticeable due to the substantial separation distances. The noise impact of the extra equipment installed in Stage 3 will be confirmed in the EIS through noise modelling. As noted in Section 1.5, noise impacts and other issues associated with increased rail movement between the coal mines and Abbot Point will be the subject of a separate assessment process by the proponent for the works. Impacts of construction noise and increased operational noise on marine mammal activity will be addressed in the EIS.

Air quality

The expanded areas and increased volume of coal held in the stockyards and transferred by conveyor may increase coal dust emissions from the operating areas. As for noise, likely air quality impacts on existing residents will be negligible due to the separation distances involved. However, the potential for the development of a large tourist development on the coastline near Abbot Point (approx 7 km to the south of the terminal) will require attention to this issue in the EIS. Impacts are not expected to be significant given that the predominant winds are from the south east and easterly directions. Dust modelling will be carried out to quantify potential impacts.

Cultural heritage

In a scan of the whole port area, no sites of indigenous cultural heritage significance were identified in the proposed development area by Barker (1999). However, a more intensive survey of the development area will be carried out as part of the EIS process. Additional cultural heritage assessments conducted for the EIS are expected to be focussed around the implications of the

Aboriginal Cultural Heritage Act 2003 which has come into force since site investigations were undertaken.

Land Use and Planning

The potential for impact of the project on existing land uses and land use planning are considered to be minor given that the project represents a minor extension of the existing operation in terms of extent. There has been minimal land use change in the general area in proximity to the Abbot Point site since the original terminal was established. The implications for potential future use of other land in the area will be explored.

Socio-economic issues

Main socio-economic impacts of the project are likely to be positive due to the increased demands for local and regional services and improved employment prospects.

5 CONCLUSIONS

The high global demand for export coal increases the need for an expansion of the existing handling capacity of the Abbot Point Coal Terminal. The proposed expansion involves mainly an upgrade or duplication of the existing infrastructure and represents a relatively minor increase in the area of land and off-shore area that will be disturbed.

The existing operation has been shown to have had minimal impact on the external environment. It is expected that impacts of the construction and operation of the expanded operations will similarly be minimal. Any potential adverse impacts should be able to be minimised through the preparation and implementation of an Environmental Management Plan (EMP) for the expanded project. This EMP will build on the provisions of the EMP recently prepared for the existing terminal (PCQ 2005).

It is proposed to prepare draft Terms of Reference (ToR) for the preparation of an Environmental Impact Statement with ToR requirements based partly on the assessment of issues and impacts presented in this IAS. These ToR plus the IAS will be presented for public and agency comment. The final ToR will then be prepared.

6 ABBREVIATIONS

APB	Abbot Point Bulkcoal Pty Ltd
DEH	Commonwealth Department of the Environment & Heritage
DPIF	Queensland Departent of Primary Industries and Fisheries
EIS	Environmental Impact Statement
EPA	Qld Environmental Protection Agency
IAS	Initial Advice Statement
Mtpa	million tonne per annum
PCQ	Ports Corporation of Queensland

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