

**ABBOT POINT COAL TERMINAL
STAGE 3 EXPANSION
SUPPLEMENT TO THE
ENVIRONMENTAL IMPACT STATEMENT**

Prepared For: Ports Corporation of Queensland

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Synopsis :	Supplement to the EIS for the Stage 3 Expansion of the Abbot Point Coal Terminal addressing submissions made by agencies and the public following review of the EIS.

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CONTENTS

Contents	i
List of Figures	ii
List of Tables	ii
1 INTRODUCTION AND PURPOSE OF SUPPLEMENT	1-1
2 SUBMISSIONS RECEIVED AND SUMMARY OF RESPONSES	2-1
2.1 Number and Source of Submissions	2-1
2.2 Summary of Issues Raised in Submissions	2-7
2.3 Commentary received during Public Consultation Process	2-7
3 DETAILED RESPONSES TO SUBMISSIONS	3-1
3.1 Bowen Shire Council (Submission 1)	3-1
3.2 Department of Aboriginal and Torres Strait Islander Policy (Submission 2)	3-1
3.3 Department of Employment and Training (Submission 6)	3-1
3.4 Department of Main Roads (Submission 9)	3-3
3.5 Department of Natural Resources Mines and Water (Submission 10)	3-4
3.6 Department of Primary Industries and Fisheries (Submission 12)	3-8
3.7 Environmental Protection Agency (Submission 13)	3-9
3.7.1 EPA Submission – 1. Air Quality Assessment	3-9
3.7.2 EPA Submission – 2. Water Quality	3-12
3.7.3 EPA Submission – 3. Noise Impacts	3-17
3.7.4 EPA Submission – 4. Tidal Structures and Associated Works	3-17
3.7.5 EPA Submission – 5. Off-shore Infrastructure	3-17
3.7.6 EPA Submission – 6. Approvals Required	3-18
3.7.7 EPA Submission – 7. Infrastructure Requirements	3-18
3.7.8 EPA Submission – 8. Environmentally Sensitive Areas	3-19
3.7.9 EPA Submission – 9. GBR Coastal Marine Park	3-22
3.7.10 EPA Submission – 10. Decision Criteria	3-22
3.8 Queensland Transport (Submission 16)	3-22
3.9 Whitsunday Wildlife (Submission 24)	3-23

4	REFERENCES	4-1
	APPENDIX A: DNRW CORRESPONDENCE AND PROJECT CLEARING CODE	A-1
	APPENDIX B: SECTION 86 APPROVAL – SERVICE JETTY	B-1
	APPENDIX C: PROJECT APPROVALS	C-1
	APPENDIX D: ACID SULFATE SOIL ASSESSMENT – ADDITIONAL TESTWORK	D-1
	APPENDIX E: AIR QUALITY ASSESSMENT – RESPONSES BY PACIFIC AIR AND ENVIRONMENT	E-1
	APPENDIX F: WATER QUALITY DATA – EIS DATA PLUS ADDITIONAL INVESTIGATIONS	F-1

LIST OF FIGURES

Figure S-1	Ground Elevation Values and Contours and Spot Depths to Groundwater 14 July 2005 (Revised)	3-16
Figure S-2	Holdings in Expansion Area (Revised)	3-20
Figure S-3	Environmentally Sensitive Areas at Abbot Point – EPA Designation (Revised)	3-21

LIST OF TABLES

Table 2-1	List of Submissions for EIS Supplement	2-2
Table F-1	Summary of Surface Water and Groundwater Quality Results (ions, metals) – 20 th April 2005 (surface) 14 July 2005 (groundwater) and 8 th June 2006 (both)	F-2

1 INTRODUCTION AND PURPOSE OF SUPPLEMENT

Ports Corporation of Queensland (PCQ) is the proponent for the proposed Stage 3 Expansion of the Abbot Point Coal Terminal. The Stage 3 Expansion has been the subject of an Environmental Impact Statement (EIS) prepared by WBM Pty Ltd (WBM 2006). This EIS has been prepared in accordance with the *State Development and Public Works Organisation Act 1971* (SDPWOA). The EIS was released to government Referral Agencies and the public for a 6-week statutory review period commencing on the 11 March 2006. Submissions were invited and were to be forwarded to the Coordinator General (CG). Submissions subsequently received by the CG have been forwarded to PCQ for a response. This Supplement, which has been prepared by WBM on behalf of PCQ, thus provides the compilation of responses to the submissions made.

This Supplement and the EIS comprise the Final EIS documentation for the Stage 3 project. A copy of this Supplement will be sent to those Referral Agencies and members of the public who lodged a submission on the EIS.

The Coordinator - General will then prepare a report evaluating the Final EIS documentation and, should it be recommended that the project can proceed, prepare conditions of approval (incorporating those provided by Referral Agencies).

It should be noted that because the project was not considered to be a 'controlled action' by the Commonwealth Department of the Environment and Heritage (DEH), assessment of the EIS by the DEH has not been required.

2 SUBMISSIONS RECEIVED AND SUMMARY OF RESPONSES

2.1 Number and Source of Submissions

Table 2-1 provides a full list of submissions received by the CG. Some 22 State and local government agencies and one Commonwealth government agency (the Great Barrier Reef Marine Park Authority – GBRMPA) were invited to make a submission as part of the EIS assessment process. Fifteen of these agencies responded with a submission of which seven had no comments to make on the EIS. Eight agencies had comments that have required a response in this Supplement. One submission was received from the public – from the Whitsunday Wildlife Preservation Society. No submissions were received from private individuals.

Table 2-1 List of Submissions for EIS Supplement

Sub. No.	Submittor	Major Issues - General	Major issues - details	Relevant Section of EIS
1	Bowen Shire Council	Showground use for construction camp, sewage treatment plant	The Council response indicated that the proposed use of the Showground site should be suitable. Council advised that Bowen's new sewage treatment plant will be able to handle the loads associated with the proposed worker's accommodation camp.	Various including Section 4.1.9 and 5.1.1.6.
2	Department of Aboriginal & Torres Strait Islander Policy	Indigenous Employment	Appoint a project manager to liaise with community and contractor for training and employment programs accessible by indigenous community.	4.1.7 and 6.1.5,
3	Department of Communities	No Issues.	Advised that the impacts of the temporary workforce have been adequately addressed in the EIS.	
4	Department of Emergency Services	No Issues	EIS satisfactorily addresses the department's requirements.	
5	Department of Local Government, Planning, Sport & Recreation	No Issues	No comments	
6	Department of Employment & Training	Skills and training of construction workforce.	Greater detail on skill requirements required. Noted that PCQ should comply with state government training policy.	4.1.7 6.1.5
7	Department of Industrial Relations	No issues	No comments	
8	Department of Housing	No Issues	Supports the proposal of workers accommodation at Showgrounds site on Mt Nutt Rd to mitigate effects on local housing market.	5.18.1.2
9	Department of Main Roads	Construction Materials	More information is needed about potential road impacts with respect to definitive sources of construction materials viz. Road Access; Haulage route impacts.	4.1.5
		Operational impacts	Assess traffic impacts generated by Stage 3 project - based on DMR Guidelines for Road Assessment of Development.	5.1.5
		Lighting of Intersection	Additional lighting is required at Bruce Highway Abbot Point access road intersection.	
		Environmental Management Plan	Address impacts of road haulage on road assets in EMP.	6.3
10	Department of Natural Resources, Mines and	Vegetation Management	Insufficient information is provided for a tree clearing application. Need ongoing vegetation management code not broadscale code.	5.5

SUBMISSIONS RECEIVED AND SUMMARY OF RESPONSES

	Water	Groundwater	Monitoring to provide information as to effects of groundwater seepage to maintain wetlands ecosystems.	5.4.4
		Groundwater	Monitoring of seepage of contaminants below stockpiles and sediment ponds	5.4.4
		Groundwater	Questions the sustainability of supplies of groundwater from Splitters Creek alluvium. Applications for permits may be required.	5.4.3
		Groundwater	Question of the certainty of "Water for Bowen " project.	4.5.5
		Acid Sulfate Soils	Haven't dealt with ASS investigation under full provisions of SPP2/02 - viz. area of clearance, depth of sampling, and number of test pits required.	App G
11	Department of Premier and Cabinet	No submission	No comments	
12	Department of Primary Industries & Fisheries	Development of Service Jetty	Possible impacts from this development: disturbance to fisheries resources; marine plants; disposal of material; or dredging requirements.	4.1.8.2
		Runoff to Wetlands	Questions the ability of existing size of sedimentation basins to handle increased runoff from larger stockpiles in respect to heavy metals and acid coal and dilution factors from non contaminated runoff.	5.4.1.3 and 5.4.2.2
		Workforce accommodation	Supports the provision of construction workforce accommodation, which should not impact on availability of accommodation for seasonal horticultural workers.	
13	Environmental Protection Agency	Air Quality Assessment	1.1 EIS must estimate the max level of dust emissions and predict impacts under worst-case conditions.	5.6.2
		Air Quality Assessment	1.2 Clarify how emission rates for individual sources at the terminal were apportioned.	App K
		Air Quality Assessment	1.3 Specify dust deposition velocities used in model relative to shape and density of particles.	6.4.2
		Air Quality Assessment	1.4 Discuss how model performance can be improved, since model gave variable results in previous evaluation monitoring.	6.5.2.2
		Air Quality Assessment	1.5 Should provide 30-day dust deposition values and compare against guidelines.	7.1.2 & 7.2.2
		Air Quality Assessment	1.6 Background dust deposition values not included in Figures 7.2 and 7.6.	Figs 7.2 and 7.6



SUBMISSIONS RECEIVED AND SUMMARY OF RESPONSES

	Air Quality Assessment	1.7 Confirm that the proposed east berth position is correct and cross reference to the model results (apparently based on west location).	
	Air Quality Assessment	1.8 Specify that dust management program will be reviewed in future to ensure that additional mitigation measures will be implemented if dust complaints or guidelines exceeded.	Appendix K
	Water Quality	2.1 Determine water quality objectives for Caley Valley Wetland using appropriate Water Quality Guidelines.	5.4.
	Water Quality	2.2 Discuss the possibility of groundwater hydrology changes as a result of expansion of stockpiles.	5.4.4
	Water Quality	2.3 Provide data on previous overflows of settlement ponds, including water quality if recorded.	5.4.1.3
	Water Quality	2.4 Discuss permeability and seepage from drainage system and settlement ponds, to affect groundwater.	5.4.4
	Water Quality	2.5 Map location of bore 125273 on Figures, 1, 2, 3 of Appendix I.	Appendix I
	Noise Impacts	3.1 Identify if noise intrusion is possible to proposed construction campsite.	5,1,1,6
	Tidal Structures	4.1 Approvals for dredging or quarrying of material for service jetty construction.	5.8.2.2
	Tidal Structures	4.2 Information will be required for Building Code assessment in relation to works at service jetty.	4.1.8.2
	Off Shore infrastructure	5.1 Information will be required for Building Code assessment in relation to the ship berth and other offshore infrastructure.	4.1.2
	Approvals Required	6.1 List of required approvals is incomplete and incorrect. See EPA submission, including items 4.1, 4.2, 5.1	Appendix C
	Infrastructure Requirements	7.1 Identify if further expansion of maintenance area and workshop is proposed - re ERA 28.	4.5.9
	Infrastructure Requirements	7.2 Identify if Bowen Shire sewerage infrastructure will require upgrading for Worker Accommodation Camp, and proposed timing and commitment.	4.1.9
	Environmentally Sensitive Areas.	8.1 Correct statements of triggers under Coastal Management District	5.1.1.5
	Environmentally Sensitive Areas.	8.2 and 8.3 Correctly map Coastal Management control District in Figures 5-1 and 5-4.	5.1.1.5
	Great Barrier Reef Coastal Marine Park	9.4(sic) Discuss implications of dredging and spoil disposal on values of state marine park.	5.10.2



SUBMISSIONS RECEIVED AND SUMMARY OF RESPONSES

		Decision Criteria	10.1 Cite up-to-date regulation Environmental Protection Regulation 1998.	Appendix Q.
14	Queensland Treasury	No Comments	No comments	
15	Queensland Health	Public Health	Satisfied that project addresses public health management.	
		Public Health	Question where is the annual show to be held during period when current site in use for Workforce Accommodation.	
16	Queensland Transport	Project Description	Notes that the 2nd rail loop and dump station should be technically part of the Stage 2 expansion.	1.2. and 4.5.1
		Dredge Spoil Disposal Site	Supports the offshore disposal site.	2.4.1
		Dust Control	Despite dust deposition lower than EPP goals, recommend dust sprays to ensure that emissions are minimised so that other industry development is not precluded.	5.6.2
		Noise and Vibration	Noise emissions are below EPP goals.	5.7.1.3
		Coastal processes	Recommend higher design provisions for protection against wave heights including 100 yr storm surge and greenhouse sea level rise. Total 2.68m design provision.	5.10.1.4 and 5.10.1.5
		Dune Management	Recommend Dune Stabilisation and Revegetation program for southern foredunes 4 to 10km south of Abbot Point, to protect dune overtopping from storm and wave surge.	6.3.
17	Powerlink Queensland	No submission		
18	Townsville State Development and Innovation Centre	No submission		
19	Department of Energy	No submission		
20	Ergon Energy	No submission		
21	Queensland Rail	No submission		
22	Industry Capability Network (Qld)	No submission		
23	GBRMPA	Sea Dumping Permit	Advises that the EIS will provide sufficient information to enable assessment for permit.	
		Env Mgmt Plans	Ensure that mitigation and management measures in the EMPs are implemented.	
24	Whitsunday Wildlife	CG Terms of Reference	The TOR does not contain some items listed in SDPWO Regulations.	
		Project Need and Alternatives	Considers the Project Justification and Benefits fail to address non-economic considerations, climate change, impacts on other industries, as well as ecologically sustainable development.	2.1



SUBMISSIONS RECEIVED AND SUMMARY OF RESPONSES

	Project Need and Alternatives	Considers the Project Location and Alternatives fails to consider that the port developments at Mackay will be adequate.	2.1
	Project Need and Alternatives	Suggests the benefits of the no project alternative are ignored.	2.1
	Project Description	Questions the chlorine treatment of treated effluent flowing to primary settling Pond.	4.5.7.4
	Bowen Accommodation Camp	Questions the timing of upgrade of Bowen sewage treatment plant	5.1.1.6
	Bowen Accommodation Camp	Expresses concern about demands on services and community facilities of Bowen	5.18.1.3
	Flora and Fauna	No mention of the presence in the Caley Valley Wetlands of the Water mouse (false water rat).	5.5
	Water Quality	Considers not enough information on the potential impacts on the Caley Valley Wetlands is presented, for example from dust, leachate, and chlorine in treated water effluent.	5.4.2
	Flora	Notes that the statement that no 'of concern' species are present disagrees with Table 5-8 showing a number of 'of concern' Regional Ecosystems. In particular the table lists semi-evergreen vine thicket as being present.	5.5.1
	Fauna	States that two species stated to be present (Striped-tailed Delma and Coastal Sheathtail-bat) were not mentioned in the EPBC referral as a listed threatened species. Further investigations are required.	5.5.1
	Coastal Processes	Takes issue with correctness of statements concerning the effects of global warming, particularly on sea level rise, and impacts of storm surge.	5.10.1.4
	Shipping	Suggests the EIS fails to consider the risks associated with increased shipping movements.	4.3.5
	Environmental Management Plan	Disagrees with statement of environmental values. Wants addition of studies on several threatened or of concern species. Also seeking EMPs to be binding documents.	6.2



2.2 Summary of Issues Raised in Submissions

The main issues raised in the submissions are summarised in Table 2.1. The main factors for consideration in this Supplement were as follows:

- Effects of the stockpile expansion on surface water and groundwater quality of the wetlands to the west of the coal terminal (the Abbot Point- Caley Valley Wetlands);
- The capacity of existing settlement ponds to handle increased runoff from the stockyard area;
- Extent of acid sulfate soils;
- Clarification of air quality modelling and outputs;
- Susceptibility of the terminal area to storm surge and elevated water levels due to predicted greenhouse effects;
- Issues with traffic impacts during the construction and operation stages of the project.

One submission raised issues in regard to the effects of increased export and utilisation of coal on climate change and greenhouse effects. These issues were not addressed in the EIS and have not been responded to in the Supplement. Such issues are appropriate for consideration by others as part of national and international strategies in relation to climate change and are not relevant to the progress of the approval process for the Stage 3 Expansion, particularly as the project is neither producing nor consuming coal. The issues were also not required by the Terms of Reference for the EIS to be addressed within the document. This aspect is further addressed in Section 3.8.

2.3 Commentary received during Public Consultation Process

Following release of the EIS for public and agency review in March 2006, consultation with key government agencies and the community has been conducted by PCQ.

Consultation initiatives have included the following:

- Copy of EIS Executive Summary on Coordinator- General website and full EIS document on PCQ's website;
- Copy of EIS on public display in Bowen Shire Library, Townsville State Development Centre and EPA Customer Service Centre in Brisbane;
- Newsletter insert in 'Bowen Independent', 24 March 2006;
- Presentation to Advisory Agencies, Townsville 28 March 2006;
- Consultation with Main Roads Department, Townsville, 28 March 2006;
- Presentation to Bowen Shire Council, 29 March 2006;
- Public presentation and display, Bowen 29 March 2006;

- Discussions with Bowen Show Society, 30 March 2006;
- 'Door-knocking' of residents in vicinity of Bowen Showground, 30 March 2006.

3 DETAILED RESPONSES TO SUBMISSIONS

The following information has been prepared to respond to each of the submissions listed in Table A.1 where explanation is necessary in addition to the commentary/short response provided in Table A.1. The order of response below reflects the order of submissions in the table.

3.1 Bowen Shire Council (Submission 1)

The Bowen Shire Council submission indicated full support for the Stage 3 project. The Council submission noted that, after consideration of potential effects on showground operations and options for handling show activities, the showground site will be suitable for the establishment of the Stage 3 construction camp. The opportunities associated with the upgrading of showground facilities was noted. It was also identified that some upgrading of Mt Nutt Road and its intersection may be required.

Council has also resolved that the new sewage treatment plant will be built near the council works depot and will provide for the expected demands of the accommodation camp. Council also noted there was adequate community infrastructure to service the increased workforce associated with the Stage 3 Expansion.

3.2 Department of Aboriginal and Torres Strait Islander Policy (Submission 2)

DATSIP Submission Summary

DATSIP recommends that a Project Manager be appointed to liaise with the community and the Contractor for training and employment programs accessible by the indigenous community.

Response

PCQ believes that indigenous participation is being maximised through the measures already agreed with Traditional Owners in the Cultural Heritage Management Plan for the Stage 3 Expansion project. PCQ does not have any issue with DATSIP appointing such a manager, however it duplicates employment processes PCQ is putting in place. Because of this, DATSIP would be expected to fund the position. PCQ will work with this DATSIP appointed person.

3.3 Department of Employment and Training (Submission 6)

DET Submission Summary

- 1. DET requested greater detail on the profile of the skill requirements for each phase to enable DET to determine if there are opportunities to collaboratively develop an employment and skilling strategy.*
- 2. Recommended that PCQ comply with the State Government Building and Construction Contracts Structured Training Policy.*

Response

- The delivery of the Stage 3 Expansion will be divided into several stages. The skills requirements for each stage will differ dramatically depending on whether the work is onshore, offshore, for earthworks and civil related or structural. PCQ is dependent on other parties such as Queensland Rail and mining companies making investment decisions before each of the stages can proceed and implementation timing is dependent on these outside factors. It is not expected that all the work will be carried out at the same time, so local tradespeople used for one stage may be utilised for a following stage. The offshore works would be expected to occur first.

The following list provides a best estimate of the skills profile for the various components. The numbers of skilled personnel should however be taken as notional only as the mix may vary quite considerably dependent on the contractors who undertake the work. The numbers reflect trades employed long term on the project. There will be regular requirements for additional casual tradespeople for peak work periods.

BEST ESTIMATE OF TRADE REQUIREMENTS

ACTIVITY	TRADE	POSSIBLE NUMBERS
Construction of Bund 3 and Extension of Current Yard Materials Handling Equipment	Civil workers including plant operators.	50
	Concrete form fitters	20
	Steel fixers	25
	Concreters	30
	Welders/Boiler Makers	15
	Electricians	15
Construction of Offshore Wharf including Shiploader	Welders/Boiler Makers	60
	Crane drivers	12
	Riggers	30
	Electricians	15
	Project Managers/Engineers	20
	Inspectors	6
	Divers	12
	Surveyors	6
Marine Plant	Engineers	6
	Deck Hands	12
	Skippers	6
Duplication of Outloading Stream	Welders/Boiler Makers	12
	Crane drivers	6
	Electricians	15
	Project Managers/Engineers	10
	Inspectors	3
Marine Plant	Engineers	3
	Deckhands	6
	Skippers	3

It should be noted that the above numbers could be fully qualified tradesmen or a mix of trade and apprentices.

The above table does not include supervisory or administration staff or unskilled labour. Unskilled labour requirements will vary significantly throughout the project, but the base number is likely to be in the order of 20, supplemented with casual workers as required by contractors. Additional staff will be required for the accommodation camp (cooks, cleaners, bus drivers etc) and these will vary as the project progresses. The number of supervisory and administration staff will be entirely dependent on the contractors and subcontractors chosen and how they manage their component of the project.

2. As a Government Owned Corporation, PCQ will comply with the State Government Building and Construction Contracts - Structured Training Policy (10% Training Policy). Under this policy, apprentices, trainees and cadets must be engaged in approved training that leads to a nationally recognised building and construction competency or qualification. A minimum of 10% of the total labour hours on the construction site must be undertaken for training. This will be specified as a contractual requirement in tenders. .

3.4 Department of Main Roads (Submission 9)

DMR Submission Summary

1. *More information is needed about potential road impacts with respect to definitive sources of construction materials viz. road access and haulage route impacts.*
2. *Needs to be an assessment of traffic impacts generated by the Stage 3 project – this should be based on Main Roads (2006) Guidelines for Assessment of Road Impacts of Development.*
3. *Safety issues need consideration. Additional lighting is required at Bruce Highway Abbot Point access road intersection.*
4. *Management of additional impacts of road haulage on road assets should be addressed in Environmental Management Plan (EMP) – conditions provided by DMR.*

Response

1. It is not possible at the present time to undertake an assessment of road impacts of haulage of construction materials as the eventual source of construction material will be determined by the successful construction contractor, not by PCQ. There are a number of options for the sourcing of this material (also see Point 2 below) which will affect the consideration of road impact.
2. It is proposed by PCQ that :
 - a Road Impact Assessment Report (RIA) and a Road Use Management Plan (RUMP) for road transport tasks associated with haulage of construction materials and equipment for Stage 3 construction will be undertaken within 3 months of selecting a preferred construction contractor(s); and

- Following preparation of RIA and RUMP Main Roads and PCQ will enter into a Road and Road Use Agreement as soon as possible after completion of the report and plan, to address issues relating to ameliorating road impacts and managing road use associated with the project.
3. In regard to road safety of the turn-off roadworks at the Bruce Highway - Abbot Point access road intersection, the required works have been carried out as part of the Stage 2 Expansion construction program and are now complete. The required lighting is also being installed as part of Stage 2 expansion project. The lighting design is currently being developed by Roadtek. This lighting work is expected to be completed at the end of 2006.
 4. The final Environmental Management Plan in respect of road and traffic issues will be amended where necessary to reflect the outcomes of the Road Use Management Plan developed according to point 2 above.

3.5 Department of Natural Resources and Water (Submission 10)

DNRW Submission Summary- Recommendations

1. *Inadequate information is presented for tree clearing application. Ongoing vegetation management code is needed, not broadscale code.*
2. *Monitoring is recommended to provide information as to the effects of groundwater seepage to maintain wetland ecosystems.*
3. *Monitoring of seepage of contaminants below stockpiles and sediment ponds is recommended. Sites may need to be lined to prevent degradation.*
4. *Queried the availability of sustainable supplies of groundwater from the Splitters Creek alluvium. Applications for permits may be required.*
5. *Questioned the certainty of the "Water for Bowen " project.*
6. *Haven't dealt with the Acid Sulfate Soil investigation under the full provisions of State Planning Policy 2/02 - viz. area of clearance, depth of sampling, and number of test pits required.*

Response to Recommendations

1. The assessment of the Stage 3 Expansion project in relation to the 'Ongoing Vegetation Management Code for the Brigalow Belt' is addressed in Appendix A of this Supplement. Correspondence from DNRW in relation to application requirements is also presented in this appendix. Map modification requirements to be undertaken following project approval are also presented.

The expansion is within the existing terminal boundary, but will require clearing of remnant vegetation as defined under the *Vegetation Management Act 1999* (over and above that cleared for the establishment of the Stage 2 stockyard expansion).

The remnant vegetation to be cleared for Stage 3 lies both on freehold and leasehold land designated as Strategic Port Land (SPL), and freehold land zoned as 'Special Purpose' under Bowen Shire Council's planning scheme.

Advice received from DNRW indicated that a permit application is required to clear the remnant vegetation on leasehold land designated SPL, being Lot 46 SP156160 (refer Appendix A). The area of vegetation is approximately 1 ha. Appendix A presents the compliance of the proposed clearing with the 'Regional Vegetation Management Code for Ongoing Clearing Purposes – Northern Brigalow' including proposed vegetation offsets to compensate for vegetation to be cleared (refer PR S8 in Appendix A).

The vegetation on Lot 4 on RP738760 is mainly regrowth on previously cleared terminal land, although it is mapped as remnant vegetation Not of Concern. The land is freehold and zoned as "Special Purpose" for coal loading purposes. Clearing of this vegetation is exempt under the *Vegetation Management Act 1999* and the *Integrated Planning Act 1997* because it is operational work involving clearing in an urban area (industrial use) and is identified as a priority infrastructure area. Formal confirmation of this exemption has been received from DNRW (refer Appendix A).

2. As part of the establishment of an expanded surface and groundwater monitoring program at the Abbot Point Coal Terminal, a series of groundwater monitoring bores have been established around the perimeter of the terminal. These bores are fully described in Appendix I of the EIS with additional monitoring outcomes described in Section 3.6.2 of this Supplement. No baseline or on-going monitoring of groundwater conditions at the terminal had been conducted prior to the commencement of investigations for the EIS (in April 2005). On-going monitoring of these bores is proposed as was presented in the EIS (see Sections 5.4.4.2 and 6.4) and it is recommended that this monitoring be a condition of approval. It is considered that this network of monitoring bores will provide a valuable and adequate assessment of changes to groundwater quality conditions resulting from the Stage 3 development (also see Section 3.6.2). It should be noted that the ecosystems associated with the wetland to the west are affected by seasonal inundation of freshwater from the catchment plus the prevailing hypersaline conditions of the soils (refer Section 5.4.1 and 5.4.2 of the EIS). Ecosystems essentially 'disappear' during the spring/early summer period and barren hypersaline surface conditions then prevail. There is a very low likelihood that this wetland is dependant to a significant degree on groundwater inflows from adjacent lands, particularly given the flat terrain and the prevailing groundwater level within the terminal area being around 0.0m AHD (also refer to response presented in Section 3.6.2).
3. This additional monitoring of seepage of contaminants below stockpiles is underway. In addition to the above groundwater monitoring network, the existing surface water quality monitoring program undertaken by the site operators (Abbot Point Bulkcoal – APB) and as described in the current IEMS for the site is to be supplemented by additional sampling in the wetlands to the west of the site (refer Section 3.6.2). Given that monitoring to date has indicated no evidence of significant adverse water quality impacts on the wetlands to the west and that the expected quality of the additional coal to be stockpiled at the site for the Stage 3 Expansion will not be a significant source of potential contaminants (refer Section 5.4.2 of the EIS), there is considered to be no need to line the sites.

4. The project does not depend on the 'Water for Bowen' pipeline project proceeding as it is believed that sustainable supplies from the Splitters Creek borefield should be available for the Stage 3 Expansion. The EIS predicted, as a conservative estimate, that the possible maximum operational demand for water from the borefield could be up to 364 ML/a. The existing permitted allocation from DNRW is 250ML/a. It is considered probable that this existing allocation may be adequate to meet the operational demands of the Stage 3 Expansion. It is proposed to undertake more intensive monitoring of the groundwater resource at Splitters Creek (mainly depth and salinity levels) and water usage at the terminal particularly in relation to the forthcoming increased demand that will be associated with the Stage 2 Expansion operations (estimated in the EIS to be up to 186ML/a). Should it be evident from this additional monitoring that volumes in excess of 250ML/a are likely to be necessary with the Stage 3 Expansion (particularly if the full production capacity of the terminal of 50Mtpa of coal is likely to be reached), then an application for an increased water allocation under the *Water Act 2000* would be made, depending on the outcomes of the groundwater monitoring program. The results of any groundwater monitoring would be made available to the DNRW. Should monitoring indicate that increased demands for groundwater over and above the permitted 250ML/a would not be sustainable from the Splitters Creek borefield, then a 'supply options analysis' would be conducted. Accordingly, an application for an increased allocation is not proposed to be made at this stage. It should be noted that full levels of production at Stage 3 (ie 50 Mtpa) would be unlikely to be achieved for a number of years following the commencement of the Stage 3 operations so a significant groundwater monitoring database would have been accumulated by that time. A Permit To Take Water from Saltwater Creek of up to 0.2ML/day will be sought for the Stage 3 earthworks phase only as is currently the case with the Stage 2 construction (under Water Permit number 1889747).
5. As noted above, the project is not likely to depend on the "Water for Bowen" pipeline being developed. However, the feasibility study for the pipeline is underway and PCQ is a financial supporter of the study. As such, PCQ will have a priority for use of this supply at the terminal. When water becomes available from the pipeline, groundwater draw will be able to be reduced to a level that takes pressure off the resource.
6. The Acid Sulfate Soil investigations were presented in Appendix G of the EIS. In response to the comments provided by the DNRW, some clarification of the approach taken for the acid sulfate soil (ASS) investigations, subsequent findings and implications for the project are provided as follows:
 - The site proposed for the stockyard development is located on a Quaternary sand plain with sand surface and near-surface sediments derived from wind and wave action. This plain formation is consistent throughout the area of the site below 5m AHD. The soils present are structureless, loose, highly leached and permeable medium to fine grained sands (refer photo below of typical profile).

AS Site Photo 1

Such sands are located well above the prevailing groundwater level (see below) and thus anaerobic soil conditions would be highly unlikely to be present.

- All samples taken were consistent in profile and physical characteristics (negligible variation in terms of soil profile was found within the 20 sites sampled) reflecting the homogenous nature of the lowland terrain proposed for the stockyard development. It was thus considered unnecessary to undertake additional sampling within the area of investigation/impact;
- There is no evidence of acid sulfate soil in the existing drains feeding into the settlement ponds that currently pass through and adjacent to the proposed stockyard area. Additionally, the new drains to be established within this area would be constructed with a shallower cross-sectional profile than the existing drains ie. maximum depth of the proposed constructed drain may be up to 0.7m¹ below the surface- the existing drains are up to 1.2 m below the surface.
- Prevailing groundwater levels at the site are approximately 3 to 4m below the existing surface (ie. at approx 0.0m AHD- refer Appendix J and Figure 5.9 in the EIS) and thus some 2 to 3 m below the likely maximum depth of excavation;
- There is no evidence of the existing stockyard (and its associated loads) causing displacement of groundwater;
- While deeper sampling of soils (ie > 1.3m deep) was not undertaken as part of the ASS investigations, some soil samples were retrieved from the establishment of the groundwater monitoring bores around the perimeter of the proposed development area (described in Appendix J of the EIS). Samples of soil from 1.5 to 2m deep from three representative holes (ie holes 3, 4 and 5 –shown on Figure 5-10 in the EIS) were tested for the purposes of this Supplement. The results are presented in Appendix D of this Supplement and indicate that the soils are not acid sulfate soils. Furthermore, the subsoils are residual soils and not of marine origin.

¹ While the EIS (Section 1.1 of Appendix G) stated that excavation for the proposed works may be up to 1.0m below ground level, additional engineering investigation since that time has indicated that excavation for main drainage works is unlikely to exceed 0.7m due to channel gradient constraints

Based on the above outcomes, there are considered to be compelling reasons, from a soil and geomorphic perspective as well as the outcomes of sampling presented in the EIS and above, that further investigations into the possible presence of acid sulfate soils within the potential area of impact are not required. Given the high degree of homogeneity of the soils throughout the area of investigation, such sampling would serve no purpose. While the ASS investigations have been presented as 'preliminary' in the EIS, the information presented combined with the comments above are considered sufficient for the identification of ASS, the investigations meet the intent of SPP 2/02, and no further site investigations are considered necessary in this regard.

3.6 Department of Primary Industries and Fisheries (Submission 12)

DPIF Submission Summary

1. *Impacts from the service jetty redevelopment need to be considered, including disturbance to fisheries resources, marine plants, disposal of material, or dredging requirements.*
2. *Questions the ability of existing size of sedimentation basins to handle increased runoff from larger stockpiles in respect to heavy metals and acidic coal and dilution factors from non-contaminated runoff.*

Responses

1. The service jetty area, causeway and associated breakwater have been investigated for the purposes of this Supplement. The service jetty is an approved structure (refer Section 86 approval presented in Appendix B) and will be rebuilt to its approved design. The footprint will not change from the current approval.

The plates below indicate the existing characteristics of the relic jetty and causeway area.

Plate 2



Plate 3



Plate 4



This area comprises an open foreshore with no marine plants. It is proposed that barges will be used to carry major equipment into this area and be offloaded as was undertaken during the original construction program. It is currently expected that barges will generally access this area and off-load during mid to high tide levels negating the need to dredge. PCQ is consequently not seeking any coastal works approval for the service jetty area as part of this approval process. If extra depth was required, only minor excavation by shore-based grab or bed levelling would be required. In this case, a separate application will subsequently be made to the EPA.

2. The information presented in Section 5.4 of the EIS is reiterated as follows:
 - The capacity of the existing settlement ponds have been shown to comply with the EPA design criterion of a capacity of a 1 in 10 year 24 hour event;
 - There is no evidence of adverse water quality conditions downstream of Settlement Pond 2 following overtopping during significant rainfall events;
 - The quality of the additional volumes of coal likely to be stockpiled at the site as a result of the Stage 3 expansion is likely to be good without the acid generation (and any associated elevated metal concentration) issues associated with some Collinsville coal. No additional volumes of Collinsville coal will be associated with the Stage 3 Expansion;
 - Additional water quality monitoring has been recommended in the EIS to validate the above comments with additional comments provided in Section 3.6.2 of this Supplement. Stage 3 water quality monitoring will include monitoring for metals.
 - The nearest seagrass and mangrove communities to the terminal, in terms of receipt of runoff from the stockyard area, are located to the west of the bund (refer Section 5.4.1 of the EIS) and some 8km to the west of the Secondary Settlement Pond. This bund along the western limits of the wetland would only overtop to downstream areas (ie Mt Stuart Creek which flows into Abbot Bay) during major flood events when any effects of runoff from the terminal would be likely to be imperceptible.

3.7 Environmental Protection Agency (Submission 13)

3.7.1 EPA Submission – 1. Air Quality Assessment

Summary of EPA Recommendations

- 1.1 *EIS must estimate the maximum level of dust emissions and predict impacts under worst-case conditions.*
- 1.2 *Clarify how emission rates for individual sources at the terminal were apportioned.*
- 1.3 *Specify dust deposition velocities used in the model relative to shape and density of particles.*
- 1.4 *Discuss how model performance can be improved, since model gave variable results in previous evaluation monitoring.*
- 1.5 *30-day dust deposition values should be provided and compared against guidelines.*
- 1.6 *Background dust deposition values are not included in Figures 7.2 and 7.6.*
- 1.7 *Confirm that the proposed east berth position is correct and cross reference to the model results (apparently based on west location).*
- 1.8 *Specify that dust management program will be reviewed in future to ensure that additional mitigation measures will be implemented if dust complaints or guidelines exceeded.*

Responses to Recommendations

Appendix E presents the responses to the EPA recommendations 1.1 to 1.6 (excluding reference to recommendation 1.2 presented below).

In summary, Appendix E indicates the following:

1.1: Modelling has been based on hourly emissions and therefore under the worst case meteorological conditions. Emission levels provided are consequently the maximum levels expected;

1.3: Dust deposition velocities were not required for the modelling;

1.4: Modelling has been shown to perform poorly close to the source but performs acceptably further away ie. off-site where dust deposition may be an issue;

1.5: 30-day deposition values have been provided in Figures 5.1 and 5.2 of the EIS and have been shown to be well within guideline values;

1.6: Background values are indicated in the figures provided in Appendix E.

Responses have confirmed the outcomes presented in the EIS in regard to the potential air quality impacts of the project.

In regard to Recommendation 1.2, the following response is provided:

Basis for the derivation

Derivation of the dust emission estimates was based on data, available to PCQ, from similar coal terminal operations in the Hay Point area, which also experience very similar climatic conditions to the Abbot Point area. There are two major dust emission sources which are common to these major coal terminals, ie.;

- Coal handling operations, which are grouped in functional areas, stacking to stockpiles, reclaiming from stockpiles, rail receipt, inloading conveyors, out loading conveyors with associated surge bins and transfer stations, ship loaders, and other site activities; and
- Stockpile surfaces.

The Port of Hay Point, which is located south of Mackay in Central Queensland, incorporates the Dalrymple Bay Coal Terminal (DBCT) and the Hay Point Coal Terminal (HPCT) which are located in proximity to each other.

The Hay Point area has a large number of dust deposition gauges at strategically selected locations. This monitoring system, which has now been operating for over ten years, has produced very extensive data, which is available to PCQ, and has therefore been utilised as base data for the derivation.

Coal Handling Dust Emission Sources

During the past four years Denis Pout Engineering (DPE) has conducted detailed analysis of the dust emission from DBCT and HPCT. Estimates of dust emission from these sources have been progressively validated by reference to dust deposition data recorded in the area.

Review of the current and proposed facilities at the Abbot Point and Hay Point terminals indicates that the estimated dust lift-off from other major terminal emission sources will be relative to proportional terminal throughput. The estimates have therefore been based on the assumption that dust management procedures, with the exception of stockpile spray systems, will be similar at all terminals.

However Annexure A of the Dennis Pout Engineering Report (refer Appendix K in the EIS) has been provided to more specifically nominate the plant and equipment requirements for incorporation in the proposed Stage 3 Expansion as a basis for ensuring validation of the assumptions.

Stockpile Surface Dust Emissions

The estimates have been validated on the basis of the dustiness/moisture relationship tests and the wind tunnel tests conducted for current coal types shipped through APCT.

The results for dust lift-off for samples sprayed at two hour intervals and samples with nil treatment for the coal types were averaged, for lift-off speeds of 8 m/s or 10 m/s. It was found that the average ratio for a lift-off speed of 8 m/s was approximately 1.70 (specifically, the dust lift-off from samples with nil treatment was 1.7 times greater than from those samples with the two hourly water treatment), and the average ratio for lift-off speeds of 10 m/s was approximately 16.46.

The frequency of wind speeds for the Abbot Point site were considered, and it was determined that winds of speed 8 m/s occurred approximately 3 times as often as winds of speed 10 m/s. The average ratios were weighted based on these frequencies, and it was established that the final ratio between these weighted ratios was approximately 3.23.

It has been concluded that three times the dust lift-off was recorded at a range of wind speeds between 8 and 10 m/s when no water spray was applied to the coal surface. To ensure a conservative approach to dust emission estimates, the average ratio of 2 for dust lift-off from untreated to water sprayed coal surfaces, as suggested in the NPI Emission Estimation Technique Manual, has been upgraded to an average ratio of 3.

A factor of 3 was therefore adopted to compare the dust lift-off from Abbot Point untreated stockpile surfaces, with dust lift-off from the surface of stockpiles in the Hay Point area, which are subjected to regular water spray under conditions of wind speed ranging from 8 to 10 metres per second.

A review of the relative overall characteristics of coal types shipped through the Hay Point terminals and Abbot Point indicated that, except for the use or non-use of stockpile surface water spray, the dust lift-off from stockpiles will be related to the surface area.

The Abbot Point stockpile lift-off estimate for both the 15Mtpa Stage 1 case and the 50 Mtpa Stage 3 case has therefore been based on the relative stockpile surface areas compared with the surface

areas of the Hay Point terminals, multiplied by a factor of three, to allow for non-use of stockpile water spray at Abbot Point.

1.7) The proposed location of the new berth is currently planned for the eastern side of the wharf. A slight relocation of the emission contours (as shown on Figure 5-28 in the EIS) is thus required however this has no implications for the outcome of the air quality impact assessment.

1.8) PCQ (and the site operator- APB) will undertake to review the dust monitoring and management program in the future and implement dust mitigation measures should emissions result in dust complaints or levels at the nearest sensitive receptor exceed EPA guideline levels. Such a review will be undertaken on an annual basis.

3.7.2 EPA Submission – 2. Water Quality

Summary of EPA Recommendations

2.1 Determine water quality objectives for Caley Valley Wetland using appropriate Water Quality Guidelines.

2.2 Discuss the possibility of groundwater hydrology changes as a result of the expansion of stockpiles.

2.3 Provide data on previous overflows of settlement ponds, including water quality if recorded. Provide information on the justification for maintaining the settlement pond at its current size.

2.4 Discuss permeability and seepage from drainage system and settlement ponds, to affect groundwater.

2.5 Map location of bore 125273 on Figures, 1, 2 and 3 of Appendix I.

Responses to Recommendations

2.1: Water quality guidelines (based on ANZECC 2000 Guidelines) together with the results of baseline sampling conducted for the EIS (refer Section 5.4.1) plus additional baseline sampling conducted for the purposes of this Supplement have been presented in Appendix F.

Existing water quality objectives for the terminal operation are detailed in the recent approval conditions for the Stage 2 Expansion. For Discharge Location W1 (ie the discharge point adjacent to the Secondary Settlement Pond into the Abbot Point Caley Valley Wetland), the limits are a pH of 6 to 8 and a maximum suspended solids concentration of 30mg/L, to be measured each time a release occurs.

Sampling of water releases from Secondary Settlement Pond is achieved by a rising stage sampler with samples collected for laboratory analysis. The results of previous analyses have been presented in Section 5.4.1 of the EIS however, due to the infrequency of releases, sampling is also conducted at a point in the wetland immediately downstream of Secondary Settlement Pond as well as within this pond near the constructed discharge point. It is understood that since detailed monitoring commenced in early 1997, there have been three outflows from the Secondary Settlement Pond ie March 1999, October 2000 and February 2001.

Based on the issue of acidity with some of the existing stockpiles (and which is not expected to be the case with coal received as part of the Stage 3 Expansion), there is a need to ensure that pH of the receiving environment does not result in degradation of wetland ecosystems. As is shown in the data presented in the EIS combined with data presented in Appendix F, the wetland-receiving environment has variable chemical properties, varying from a freshwater/brackish conditions during wet years, to hypersaline conditions during dry periods. As a result of hypersaline conditions, some parameters have levels exceeding generic trigger values for freshwaters and marine waters (ANZECC/ARMCANZ 2000; EPA 2006), however, as noted below, these are based on total not dissolved concentrations of metals. Therefore, water quality objectives (WQO) will need to take into account local conditions, and not be based entirely on these generic guideline values.

For the purposes of this proposal, the following water quality objectives are recommended:

pH: The Development Approval for the Stage 2 Expansions set a pH range of 6.0 minimum and 8.0 maximum for discharge from the secondary settlement pond. Within the primary and secondary settlement ponds, pH was acidic. The background pH in the wetland was neutral to highly alkaline, ranging from 7.5 to 8.7, with the upper value exceeding the ANZECC/ARMCANZ (2000) guideline value for estuaries. The WQO for pH in the wetland downstream of the Secondary Settlement Pond (at S5) is recommended to be 6.0 (freshwater guideline value) minimum as at present, with the upper limit increased to 9.0 from the current site licence limit of 8.0 to better reflect the upper natural background limit of the receiving environment;

Metals: The water quality data presented in Appendix F for metals were mostly based on total (dissolved and particulate) concentrations. At sites S5 and S6, as well as sites in the wider region unaffected by port operations, total concentrations of aluminum (both samples), copper (June 2006 sample) and zinc (June 2006 sample) exceeded the 95% level of protection for freshwaters. It is not known whether dissolved metals would meet these guideline levels, however dissolved metal concentrations collected for site S4 in June 2006 (ie within the Secondary Settlement Pond) indicated low concentrations well below guideline values. Levels for dissolved metals were as follows:

- Iron: 0.13mg/L
- Aluminium: <0.01 mg/L.

Based on these results, it is apparent that water quality objectives based on ANZECC/ARMCANZ (2000) trigger values would not be achievable given current background total concentrations of these metals (although dissolved concentrations are likely to be achievable given acceptable pH levels). For all metals except aluminum, copper and zinc, the WQO should be set at the marine water trigger values (80% protection of species). Additional data should be collected for aluminum, copper and zinc in order to determine background conditions to set an appropriate WQO. This data is proposed to be gathered in 2006 and 2007.

It should be noted that the background values on which these WQOs are based are limited to two snap-shot surveys. Consequently, these data will not reflect the full range of conditions expected to occur at the site. It is recommended that the WQOs be regularly reviewed to determine whether these values are achievable.

In regard to groundwater quality compliance levels, there is a problem (commonly encountered) with making comparisons between the ANZECC surface water guidelines with groundwater quality results. In essence the wetland system will receive both surface water and groundwater input (albeit minor for the latter). Generally there will be much more surface water input compared to groundwater input (particularly during summer) hence groundwater input will be very significantly diluted. The situation is further complicated by the presence of saline groundwater with potential vertical layering of groundwater quality (ie. thin freshwater over saline water). Therefore, although the saline water will always have higher concentrations of most elements, it will never really enter a stable freshwater wetland ecosystem. A groundwater database has been established to determine appropriate compliance levels.

2.2: Changes to groundwater levels and flow directions are potentially possible due to changes in recharge patterns induced by routing of surface flows from the stockpiles. However to some extent this will be offset through loss of the effects of evapotranspiration due to land clearing for the Stage 3 area. Similarly there is some potential for some minor changes in aquifer permeability due to compaction from surface loading, however it is expected that any changes will be similar to the impact of the existing stockpiles, which have been shown to have had minor effect. Accordingly it is likely that the hydrological impact on the groundwater system will be relatively small.

2.3: Information on discharges from the Secondary Settlement pond indicates that there have been three overflows into the wetland since early 1997 (in March 1999, October 2000 and February 2001). Sampling conducted in the wetland has indicated acceptable water quality characteristics (see Section 5.4.1.3 in EIS).

As indicated in the EIS, the capacity of the two settlement ponds meet the EPA design criteria of 1 in 10 year 24 hour rainfall event. Furthermore, water quality monitoring of the adjacent wetland indicate that key water quality conditions parameters meet ANZECC (2000) Guideline levels for the protection of aquatic ecosystems, although it is recognised that additional data is necessary. The EIS notes that the Caley Valley Wetland is highly degraded in its lower reaches and, indeed, those parts of the wetland upstream of the bund on Mt Stuart Creek in immediate proximity to the coal terminal are in the best ecological condition of that part of the wetland subject to seasonal freshwater inundation. Anecdotal evidence and site surveys also suggest that the highest levels of waterbird activity occur within the Secondary Settlement Pond rather than the adjacent wetland. While there will be a significant increase in the volumes of coal stockpiled at the terminal with the Stage 3 Expansion, none of this additional coal will be derived from Collinsville (some of which has been identified as currently causing acidic leachate from the stockpiles on site). Most coal delivered as part of the Stage 3 Expansion is expected to be sourced from mines in the Bowen Basin with similar coal quality to those mines that currently deliver coal to Hay Point. As is noted in Section 5.4.2.1 of the EIS, water quality monitoring at both terminals at Hay Point does not indicate any significant presence of acid leachate emanating from the stockpiled coal. Accordingly, new coal associated with the Stage 3 Expansion will essentially mitigate the effects of the stockpiling of the Collinsville coal.

The implications of any expansion of one or both of the existing settlement ponds to increase detention volumes also requires consideration. Due to the landform and land use constraints around these ponds (including the land-take associated with the Stage 2 and 3 stockyard expansions), there is little opportunity for a significant expansion in area of the ponds. Any significant increase in pond

detention capacity would thus need to be achieved mainly through deepening one or both of the ponds. This would have the following possible ramifications:

- The prevailing groundwater level at the perimeter of Settlement Pond 2 is approximately at mean seawater level ie. 0.0mAHD (refer Section 2.3 in Appendix J of EIS). The existing base level of this pond is also at approximately 0.0m AHD given that the original development of Settlement Ponds 1 and 2 involved minimal excavation and, with the exception of the pond walls, the original tidal wetland surface was retained intact. The bunding created essentially a freshwater storage in Settlement Pond 2 that is of significant value to waterbirds, particularly when pond waters evaporate leaving a wet marsh area. Any deepening of the pond would take the base level of the pond below mean seawater level and increase the risk of seawater entering the pond during the dry season. This would have the effect of both destroying the residual freshwater marshland contained within Settlement Pond 2 and affect use of the water storage as a supplementary source of water for dust suppression and other water uses on site.
- The excavation of soil within these ponds would have the potential to result in the exposure of acid sulfate soils which would raise significant water quality management issues. It is known that potential acid sulfate soils are present within this relic tidal area contained within the settlement ponds. Any excavation would result in oxidation of these soils. Note that the soils /landform within this area is of a different geological origin to the land to the east that will be affected by the proposed stockyard expansion.

It has been recommended (see Section 6.4 of EIS) that the frequency of water quality monitoring and parameters monitored be increased. This should commence subsequent to the implementation of the Stage 2 expansion to monitor the effects of expansion of the stockpile area. The additional volumes of stockpiled coal associated with the Stage 3 Expansion is expected to be non-acid generating.

2.4: Drilling logs for the bores have indicated the presence of some shallow sands above the aquifer in bores 125268, 125269 and 125270 (refer Figure 3, Appendix J). As a consequence, there is potential for shallow seasonal lateral movement of potentially perched water, and some potential for vertical migration, however results to date only really suggest that bore 125271 (which lies immediately adjacent to Sediment Pond 2) may be significantly impacted with elevated sulphate levels (ie. sulphate 5 x seawater when normalised to seawater).

2.5: The location of Bore 125273 (identified as Monitoring Bore 6 in the main text of the EIS) is shown on Figure S.1 attached (amended from Figure 3 in Appendix J of the EIS).

**Figure S-1 Ground Elevation Values and Contours and Spot Depths to Groundwater 14 July
2005 (Revised)**

I:\B15535_I_DWT Abbot Point

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3.7.3 EPA Submission – 3. Noise Impacts

Summary of EPA Recommendations

Identify if noise intrusion is possible to proposed construction camp site.

Response to Recommendations

The neighbouring industrial uses to the proposed accommodation camp comprise mainly warehousing and light workshop/ fabrication enterprises. All these establishments are small concerns that would be likely to generate low noise levels and operate during normal working hours. A buffer zone with a minimum width of 50m is also proposed between these facilities and the camp premises. Accordingly, there is no likelihood of significant noise impacts from these facilities on tenants of the camp.

3.7.4 EPA Submission – 4. Tidal Structures and Associated Works

Summary of EPA Recommendations

Need to address approvals for dredging or quarrying of material for service jetty construction. Information will also be required for Building Code assessment in relation to works at service jetty.

Response to Recommendations

As is noted in the DPIF response above (Section 3.5), it is expected that dredging will not be necessary. The service jetty has an existing Section 86 approval under the *Harbours Act 1955* (refer Appendix B) and the jetty will be rebuilt to this existing approved design.

3.7.5 EPA Submission – 5. Off-shore Infrastructure

Summary of EPA Recommendations

Information will be required for Building Code assessment in relation to the ship berth and other offshore infrastructure.

Response to Recommendations

The detailed design of the offshore infrastructure will cost several millions of dollars. The design work will not be commissioned until the project receives approval to proceed, which may be a few years off. At this stage, all that can be identified is the location of the facility and the conceptual plan included in the EIS (Figure 4-4). Delaying the design will allow the latest design techniques available at the time of approval to be used. It is proposed that one of the CG conditions require that a separate application for IPA approval for the offshore jetty structure be submitted when the design is finalised. It is important that EPA and CG provide a conditioned approval to proceed with the Stage 3 Expansion to give project surety.

3.7.6 EPA Submission – 6. Approvals Required

Summary of EPA Recommendations

List of required approvals is incomplete and incorrect as listed in Appendix C. This includes disposal of dredge spoil to an off-shore disposal ground, approvals regarding dredging in the service jetty area, the motor vehicle workshop (ERA 28) and consideration of ERA 62. Recommendation to amend approvals.

Response to Recommendations

Appendix C in this Supplement presents a revised listing of required approvals taking account of the comments from the EPA. As noted earlier (Section 3.5), there is no need for approval to reconstruct the service jetty as this is covered by the existing Section 86 approval while the need to undertake material removal within the jetty area is subject to review (dredging is not expected to be necessary).

The comment regarding the requirement for approval to dispose of dredge spoil to an off-shore disposal ground does not apply to the proposed expansion project as the proposed off-shore disposal site is located outside of State waters (refer Figure 5.37 in EIS). Approvals will be required from the DEH and GBRMPA in this regard.

In reference to ERA 28, Motor vehicle workshop has been added to the list presented in Appendix C in this Supplement as recommended by the EPA. Activities will essentially be a doubling in workshop area and duplication of the existing activities. An application for modification to the existing licence will be made at the IPA application stage.

An IPA approval has already been provided for concrete batching (ERA 62) for the Stage 2 Expansion. It is expected that there will be no intensification of ERA 62 for the Stage 3 construction over and above that already approved for Stage 2. The duration of concrete batching will be longer than Stage 2, rather than an intensification of the activity.

3.7.7 EPA Submission – 7. Infrastructure Requirements

Summary of EPA Recommendations

7.1) Identify if further expansion of maintenance area and workshop is proposed - regarding ERA 28.

7.2) Identify if Bowen Shire sewerage infrastructure will require upgrading for Worker Accommodation Camp, and proposed timing and commitment.

Response to Recommendations

7.1: As indicated above, an application will be made under IPA to intensify the existing ERA 28 licence. Intensification will be a duplication of the existing workshop activities conducted under the current licence. The range of activities will remain unchanged.

7.2: Bowen Shire Council have advised that Council has recently committed to the building of new sewerage infrastructure (refer Submission 1 – Section 3.6.1) and that the new sewage treatment plant will have adequate capacity to meet the needs of the accommodation camp.

3.7.8 EPA Submission – 8. Environmentally Sensitive Areas

Summary of EPA Recommendations

8.1) *Correct statements of triggers under Coastal Management District*

8.2 and 8.3) *Correctly map Coastal Management Control District in Figures 5-1 and 5-4.*

Response to Recommendations

The correction to the reference should be made to reference the Coastal Management District.

Figure S-2 (derived from Figure 5.1 in the EIS) shows the corrected boundary of the Coastal Management Control District. Figure 5.4 in the EIS is also re-presented as Figure S.3 with the corrected label (note that the figure presented in the EIS was unmodified from the figure derived from the EPA Ecoaccess database).

Figure S-2 Holdings in Expansion Area (Revised)

I:\B15535_I_DWT Abbot Point DA\DRG\ECO_060829_025_AP_Supplement_ExpansionArea.WOR



Figure S-3 Environmentally Sensitive Areas at Abbot Point – EPA Designation (Revised)

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3.7.9 EPA Submission – 9. GBR Coastal Marine Park

Summary of EPA Recommendation

Discuss implications of dredging and spoil disposal on values of state marine park.

Response to Recommendation

The Port Limits of Abbot Point are excluded from the boundary of the State Marine Park. Similarly, dredging and spoil disposal will be undertaken outside of the State Marine Park boundary. The effects on the State Marine Park, where adjacent to the port limits, will be similar to the effects described in Section 5.11 of the EIS as they affect the Great Barrier Reef Marine Park. Impacts on the park are likely to be minimal given the short duration of activities and minor volumes of material to be disposed of.

3.7.10 EPA Submission – 10. Decision Criteria

Summary of EPA Recommendation

Need to cite up to date regulation Environmental Protection Regulation 1998.

Response to Recommendation

The citation presented in Appendix Q should be replaced with *Environmental Protection Regulation 1998*.

3.8 Queensland Transport (Submission 16)

QT Submission Summary

1. *Noted that Queensland Transport considers that the second rail loop and dump station are technically part of Stage 2 expansion.*
2. *Despite dust deposition lower than EPP goals, recommended employment of dust sprays to ensure that emissions are minimised so that other industry development is not precluded.*
3. *Recommended higher design provisions for protection against wave heights including 100 yr storm surge and greenhouse sea level rise. Total 2.68m design provision.*
4. *Recommended Dune Stabilisation and Revegetation program for southern foredunes 4 to 10km south of Abbot Point, to protect dune overtopping from storm and wave surge.*

Responses

1. The second rail loop and dump station fit-out at Abbot Point (as described in Section 4.1.1.1 and 4.5.1 of the EIS) is not part of PCQ's originally nominated Stage 2 Expansion, which received IPA Development Approval in December 2005. PCQ does not yet hold approvals for the rail loop work. PCQ is seeking regulatory approval for the second rail loop as part of PCQ's Stage 3 Expansion project.

QR has identified that they may need the rail loop to be constructed earlier than other parts of the Stage 3 Expansion of Abbot Point, and it has already been recognised in the EIS that the project will be carried out in stages. The environmental and planning approvals however are being obtained as part of the Stage 3 Expansion.

The second dump station at APCT is an existing structure and requires fit-out to become operational. Because 4000 tonne trains instead of larger trains are now expected for the Stage 2 Expansion of APCT, the fit-out of the second dump station is now expected to be brought forward to become part of the Stage 2B Expansion works to achieve the capacity of 25 million tonne per annum, which is the approved capacity under the IPA Development Approval for Stage 2.

2. Proposed dust control measures are as described in Annexure A of Appendix K in the EIS. While there is expected to be an increase in dust emissions with the Stage 3 Expansion, emission levels off the terminal site have been calculated to be well within EPA guideline levels. Potential emission levels as they affect any potential industrial development in the area to the south of the terminal are predicted to be negligible. Because some of the coal on site can produce acidic water runoff, the use of water sprays has been limited to transfer points. The EIS (Appendix K) presents a preferred option of surface chemical spray for coal stockpiles if additional coal dust suppression is needed at some time in the future.
3. It is understood that Queensland Transport (QT) accept the base storm tide level of 2.31m AHD as mentioned in the EIS. However, QT have revised their recommended allowance for sea level rise (greenhouse provision) from 0.35m (advised prior to completion of EIS) to 0.37m. This was a result of averaging values adjacent to the Abbot Point site. QT have thus recommended in their comments that the design storm tide level (including sea level rise) be $2.31 + 0.37 = 2.68\text{m AHD}$. The minimum level of Stage 3 stockyard is proposed at RL 2.905m AHD and will therefore be free from inundation under the design storm tide level and fully meets QT's recommended height. While there is the potential for the design storm tide to reach the coal terminal site via the bridge under the Abbot Point Access Road, in such an event, the proposed minimum RL 2.905m AHD design level would also provide sufficient protection to the proposed Stage 3 works.
4. In regard to stabilisation of the dune areas along the eastern sea frontage at Abbot Point, PCQ have actively undertaken a dune rehabilitation program based on the recommendations presented in the report by NRA (1997). The potential location of the dune overtopping raised in the Queensland Transport submission is some 8km to the south of the terminal. Efforts to date at the port have been mainly focussed on the dunal systems in proximity to the port infrastructure ie. within 2km of the site. Any stability issues associated with the dunal landforms in this area to the south do not pose a risk to the terminal. However, the existing stabilisation/rehabilitation program will be reviewed for this area within 12 months.

3.9 Whitsunday Wildlife (Submission 24)

Submission Overview

The Whitsunday Wildlife submission provided commentary and raised issues regarding justification for the project and its associated benefits and potential impacts on the Greenhouse Effect. A



response to issues regarding contributions of the project to the Greenhouse Effect and associated flow-on effects has been presented in Section 2.2 of this Supplement. Whitsunday Wildlife also commented that the Project Justification and Benefits section (mainly Section 2 of the EIS) fails to address non-economic considerations, climate change, impacts on other industries, as well as ecologically sustainable development. In response, these issues were not required to be addressed in the EIS as they were not identified in the ToR for the EIS. Justification of the project was provided in various sections of the EIS eg. Sections 5.3 to 5.9, 5.12, 5.18 and 5.19 and in Section 2.1. Ecologically sustainable development is addressed throughout the EIS through its studies of potential environmental, economic and social impacts of the project.

It is also important to recognize that:

- The project does not consume the coal being handled at the terminal.
- Greenhouse emissions relating to burning of coal are dealt with by national and International policies. The project will meet all relevant energy and emission policies of the State and commonwealth governments.
- Discussion on the possible effects of global warming on the project, such as sea level rise, is contained within the EIS (Section 5.10) and Supplement;
- Greenhouse emissions from the coal sent off-shore may be offset by consumers or producers of the energy. No government policy currently suggests that transport and handling providers must offset emissions which they do not make themselves.

Whitsunday Wildlife Submission Summary

1. *The TOR does not contain some items listed in SDPWO Regulations and TOR and EIS do not conform to these regulations.*
2. *The section Project Location and Alternatives fails to consider that the port developments at Mackay will be adequate to meet the needs of the Bowen Basin coal mines.*
3. *The benefits of the 'no project alternative' are ignored.*
4. *Questions effects of chlorine treatment of treated effluent flowing to Primary Settling Pond*
5. *Queries timing of upgrade of Bowen sewage treatment plant in relation to project development.*
6. *Demands on services and community facilities of Bowen will affect local community.*
7. *No mention of the presence in the Caley Valley Wetlands of the Water mouse (false water rat).*
8. *Not enough information on the potential impacts on the Caley Valley Wetlands, for example from dust, leachate, and chlorine in treated water effluent. Notes Section 4.4.2 not correct. Raises evidence of nearest resident to terminal (1.5km from APCT) regarding impacts.*

9. *Statement that no 'of concern' regional ecosystems are present disagrees with Table 5-8 in EIS showing a number of 'of concern' Regional Ecosystems. In particular, the table lists semi-evergreen vine thicket as being present.*
10. *Two species stated to be present (Striped-tailed Delma and Coastal Sheath-tail-bat) were not mentioned in the EPBC referral as a listed threatened species. Further investigations are considered necessary.*
11. *Takes issue with correctness of statements concerning the effects of global warming, particularly on sea level rise, and impacts of storm surge.*
12. *EIS fails to consider the risks associated with increased shipping movements.*
13. *Disagrees with statement of environmental values presented in the EMP. Wants additional studies on several threatened or of concern species. Also seeking EMPs to be binding documents.*

Responses

1. Clause 14 of the *State Development and Public Works Organisation Regulation 1999* indicates that Part 5 only applies if the Commonwealth has decided that the project is to be assessed under a bilateral agreement or an accredited process. Such a situation does not exist for the Abbot Point Stage 3 Expansion project, because the Commonwealth Minister has decided that it is not a 'controlled action'. All other relevant items in the Regulations are addressed in the EIS.
2. Port developments at Hay Point were adequately covered in Section 2.2 of the EIS. The terminals at Hay Point are constrained by land availability and rail restrictions. The Hay Point terminals have residents in close proximity and the Abbot Point site is better located to minimise community impacts, diversify coal trade through another port and provide much needed development in the Bowen region. Figure 2-3 of the EIS shows the shipping congestion occurring at various coal ports. Abbot Point is the least congested of the Ports and increasing the use of Abbot Point reduces lost natural resources from shipping congestion and inefficiency.
3. The "No Project alternative" is presented in Section 2.3. As indicated in Section 2.2 and the Overview presented above, issues relating to environmental damage due to the Greenhouse Effect are not relevant to this EIS. Nevertheless the project will not contribute to the loss of biodiversity, cause irreversible environmental damage or impact on vital food industries. It will have a positive economic and social benefit for the region.
4. The Primary Settling Pond is used to collect and recycle industrial water from the site. Treatment plant design and operational procedures (as is common to all sewage treatment facilities similar to the type proposed for use) prevent the release of effluent with elevated chlorine levels. Chlorine quickly breaks down in the environment. There is no risk of any water with elevated chlorine levels affecting the World Heritage Area or the Caley Valley Wetland to the west and any associated ecosystems.

5. Bowen Shire Council has recently approved the proposed sewage treatment plant development (refer Submission 1). Council has confirmed that these works will have more than adequate capacity to handle effluent from the proposed accommodation camp at the Bowen Showgrounds. Any waste water generated on site during construction or operation is treated on-site and will not contribute to sewage loads on the Council plant.
6. The information on Bowen population should be corrected to state the population noted is for the Bowen Shire. Nevertheless, because Bowen town is the primary service centre to the Shire's population (with minor services in Collinsville), demands from the shire are focussed there. Future pressures on services in Bowen have been identified in the EIS and it was found that most existing or available service levels should be adequate for the expected Stage 3 demands. To alleviate pressures on medical facilities in Bowen, a first aid facility will be established on site for the Stage 3 Expansion. The Bowen Shire Council has indicated its support for the project because of the economic and social benefits that will result from it over the long term.
7. While it is possible that the False Water Rat would be found adjacent to mangrove ecosystems in the Abbot Point area, the nearest mangrove wetland (upon which this species depends) to the proposed Stage 3 development is approximately 5km to the west of the site. There is no likelihood that the project would have any impact on this species. Migratory species listed under the *EPBC Act* are listed in Section 5.5.1.9 of the EIS.
8. Information presented in the EIS on water quality impacts (which is in Section 5.4.2 not Section 4.4.2 as indicated in the submission) combined with additional information presented in this Supplement (Section 3.6.2) indicates that the potential for significant adverse effects on the water quality of the wetlands is minimal. Dust modelling has also indicated that emission levels are likely to be well within EPA guideline levels. Any leachate likely to be associated with coal transporting and stockpiling for the Stage 3 Expansion is unlikely to generate significant levels of contaminants based on evidence from stockpiling coal of similar quality at Hay Point (refer Section 3.6.2 of the EIS). Assessment of coal spillage on the marine environment adjacent to Abbot Point indicated no evidence of significant impact on marine species (refer Appendix O of the EIS). Point 4 above has indicated that there is no likelihood of chlorine used in the sewage treatment plant operation affecting the use of effluent for earthworks watering.

In the EIS (Section 5.1.1.4), it is stated that the nearest residence is 5km from the rail loop and 7kms from the stockyard. Whitsunday Wildlife contends that the nearest residence is 1.5km from the terminal. The property in question is Lot 1 on RP737838.

The EIS investigation showed that the property did not have any legal structure on it as approved by Council and no services are connected to it and it was incorrectly concluded that it was not a permanent residence. However, the owner of the property has contacted PCQ and advised that he is living on the property and has done so for many years. As such, this property is considered the closest residence for impact assessment purposes. The residence however is not 1.5kms from the terminal as contended by Whitsunday Wildlife but is located around 4.9kms from the train dumping station and 4.2kms from the closest part of the rail loop. This is only marginally closer than the next closest residence of 5km (to the south west) as stated in the EIS. Predominant winds in the area are south-easterly and the

property is normally up wind of the terminal. The potential impacts of the Stage 3 Expansion of the port on this residence will be minimal and the findings of impact assessment studies (particularly air quality issues) presented in the EIS are considered to be valid.

9. Table 5-8 in the EIS (derived from Queensland Herbarium data) and Figures 5-21 and 5-23 (derived from current Queensland Herbarium mapping) indicate the presence of 'Of concern' and 'Endangered' ecosystems in the Abbot Point area and in the wetlands to the west. This table provides a regional overview and does not represent vegetation to be impacted by the terminal expansion. It is also noted in Section 5.5.1.7 of the EIS that this Herbarium mapping is inaccurate and requires correction. This includes the RE 8.12.13a mapped by the Herbarium on Bald Hill adjacent to the proposed area of expansion. This requires correction to RE 11.12.4 ('not of concern') as described in Section 5.5.1.16 of the EIS. The need for this amendment has been confirmed in discussions with the Herbarium and a map modification is to be applied for (refer Appendix A of this Supplement). Also, it is noted in the EIS that in the investigation area (ie. the terminal area and adjacent lands) there are no 'Of concern' or 'Endangered' ecosystems. The other 'endangered' or 'of concern' RE's listed in the submission, ie. RE 11.1.3, 11.2.2, 11.2.3 and 11.3.13, are not present in the Investigation Area as shown in Figure 5-26 of the EIS. Furthermore, site investigations undertaken for the EIS indicated that the RE within the stockpile pad area had been previously incorrectly identified as RE 11.3.12.

In regard to the comment that the presence of semi-evergreen vine thickets (RE 11.12.4 and 11.2.3) are present and trigger the provisions of the *EPBC Act*, Table 5-8 of the EIS for the Stage 3 Expansion indicated that there are two types of semi-evergreen vine thicket in the broader investigation area, which included not only the whole terminal area, but also the adjacent beaches and nearby wetlands area. These two vegetation communities are described as follows:

- **RE 11.2.3** (microphyll vine forest on sandy beach ridges and dune swales) is protected under the *EPBC Act* as a threatened community, however it is not present in the proposed development area of the Stage 3 Expansion project (see Figure 5-26 in the EIS). A narrow band of this community is found to the east of the existing developed area of the coal terminal (see Figure 5-23 in the EIS). The dunes in the port area, some of which are associated with this vegetation community, have conservation status and are protected under PCQ's Port of Abbot Point Environmental Management Plan. Because this vegetation community will not be impacted, there was no requirement to cover it in the EPBC Referral.
- **RE 11.12.4** (Semi-evergreen vine thicket and microphyll vine forest on igneous rocks) is present in the broader investigation area as well as in parts of the proposed development area. The EIS for the Stage 3 Expansion does indicate small areas of RE 11.12.4 will be impacted by the Stage 3 Expansion (refer Figure 5-26 of the EIS). This R.E. is classified as "not of concern" by the Qld Herbarium. The RE 11.12.4 vegetation community is not protected under the *EPBC Act*. Consequently, there are no implications for the proposed development in relation to this regional ecosystem under the EPBC Act.

The identification of regional ecosystems in the EIS is correct and the comment in the EIS that “no ‘of concern’ or ‘Endangered’ regional ecosystems and no threatened communities listed under the *EPBC Act* have been identified” is also correct. No modification of the findings of the EIS is required in this regard, including the assessment that the potential impacts are not considered to be significant.

10. Both the Coastal Sheathtail bat and the Striped-tailed Delma were listed in the EPBC Referral Document submitted by PCQ (refer Page 9 of that document – EPBC 2005/2154). Section 5.5.1 of the EIS presented comments on the possible presence of these species in the area that could have lead to a misunderstanding by Whitsunday Wildlife. Comments on the likely presence of these species in relation to the Stage 3 project area are provided below to clarify the wording in the EIS:

- **Coastal Sheathtail bat (*Taphozous australis*):** A review of information on this species indicates that its preferred roosting sites comprise sea clefts and rocky caves but it may roost in disused buildings and other abandoned infrastructure (Little and Hall 1996). It commonly roosts in large colonies with other microbats and has a preferred diet of beetles and other insects (www.amonline.net.au). There are no roosting bat colonies within the coal terminal area and no sea clefts or rocky caves in the vicinity. Fauna investigations conducted at the site by Ecoserve (2004) did not identify any evidence of this species. While it is possible that this species may periodically overfly the terminal area, the site is highly unlikely to provide a significant roosting or foraging resource. The proposed development would be unlikely to have any impact on this species and no additional investigations are considered necessary.
- **Striped-tailed Delma (*Delma labialis*):** A review of information on the distribution of this species indicates the following: DEH's EPBC website lists the distribution of the *Delma labialis* as: "Known only from Magnetic Island, north of Townsville, Northern Qld, and a few localities on the mainland near Townsville (Cogger et al. 1993). Specimens have been collected near the Bruce Highway turnoff near Townsville; west of Paluma; South Molle Island; on the road to Nellie Beach, Magnetic Island; and on the road to Horseshoe Bay, Magnetic Island (Shea 1987; Covacevich et al. 1996a)." The "Encyclopedia of Australian Reptiles" (Greer A., Australian Museum On-line, Version 15 March 2005) describes the distribution as: " Known only from the vicinity of Paluma, north of Townsville and from Magnetic Island in Queensland." The Abbot Point area is 200 kilometres south of Townsville. It is not part of the documented distribution of the *Delma labialis*. Detailed surveys of the terminal and surrounding areas by Ecoserve (2004) did not identify any evidence of *Delma labialis*.

The likelihood of this species being found on site is considered to be very low and no additional investigations are necessary in this regard.

11. Further information regarding the susceptibility of the site to the effects of sea-level rise as a result of the Greenhouse effect and changed climatic conditions is contained in the response to the submission from Queensland Transport (Section 3.7 of this Supplement). This indicated that the design provisions for the terminal meet forecast sea level rise projections in this regard and the proposed design is appropriate to cater for possible sea level rise into the future.

12. The increased risks of a shipping incident (including oil spills and collision) have been identified in Section 5.17 of the EIS. There are no navigational risks in the vicinity of the port. Contingency measures have been identified in the event of such an emergency and oil spill response equipment is located at the terminal. PCQ, MSQ and terminal staff are trained to provide a local response to a spill.
13. Regarding the need to conduct additional investigations, the following comments are made:
 - The likelihood that the Water mouse (False Water Rat) being found within the potential impact area of the expansion project is negligible as discussed in point 7 above;
 - There is no habitat of potential significance to either the Striped-tailed Delma or the Coastal Sheathtailed bat that will be impacted by the expansion (refer Point 10 above);
 - The semi-evergreen vine thicket on site is not listed as a 'threatened ecological community' under the *EPBC Act* as indicated in Point 9 above;
 - There are no 'of concern' regional ecosystems within the area to be impacted by the expansion (refer Point 7 above).

Accordingly, there is considered to be no need to undertake further investigations in this regard.

It is expected that the management information presented in Section 6 of the EIS will be integrated into an amended Integrated Environmental Management System (IEMS) for the APCT and will form the basis for regulators to impose conditions on the project. This amended IEMS, as is the case with the current IEMS, is a binding document on the site operators, Abbot Point Bulkcoal under the EP Act (through its current Registration Certificate).

4 REFERENCES

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