

**10 ENVIRONMENTAL MANAGEMENT COMMITMENTS AND CONCLUSIONS****10.1 ENVIRONMENTAL MANAGEMENT COMMITMENTS**

BHPBIO's environmental commitments are listed in **Table 10.1**. In the event that the Minister for the Environment considers the project to be environmentally acceptable, then some of these may become Ministerial Conditions under the EP Act.

**Table 10.1 - BHPBIO's Environmental Commitments**

<b>Commitment</b>	<b>Objective</b>	<b>Action</b>	<b>Timing</b>	<b>Outcome</b>
Compliance reporting	To report environmental compliance.	BHPBIO will submit an annual environmental compliance report relating to the previous twelve-month period. The first report will be submitted within 15 months after the commencement dredging and reclamation activities and thereafter annually to coincide with the current annual reporting period ending June 30 with reports submitted no later than 30 September.  The environmental compliance reports will address each element of an audit program approved by the CEO and will be prepared and submitted in a format acceptable to the CEO.	Operation	Annual environmental compliance reporting including an environmental audit program.
Construction Environmental Management - Implementation	To minimise environmental impacts from terrestrial construction/disposal activities.	The following management protocols within the approved construction EMP will be implemented: <ul style="list-style-type: none"> <li>• Hydrocarbons and chemicals management;</li> <li>• Solid waste management;</li> <li>• Clearing and topsoil management;</li> <li>• Weed management;</li> <li>• Fauna management;</li> <li>• Surface water and drainage management;</li> <li>• Groundwater management;</li> <li>• Air quality management;</li> <li>• Aboriginal heritage sites;</li> <li>• Fire management;</li> <li>• Sewerage management; and</li> <li>• Noise/vibration management.</li> </ul>	During construction, dredging and reclamation	Minimal environmental impacts with the implementation of the construction EMP and the management plans therein.
Dredging Monitoring and Management	To protect the environmental values of the Port Hedland harbour by ensuring dredging activities and discharge water quality meets relevant standards.	BHPBIO will monitor and control water quality (salinity, pH, dissolved oxygen, temperature and turbidity) changes associated with dredging and reclamation operations in accordance with the approved DMP so that there are no long-term adverse impacts on the environmental values of the port (including marine communities and habitats, mangrove ecosystem, near-shore tidal reef system and recreational fishing).	During construction, dredging and reclamation	Minimal short-term impacts to marine water quality and no long-term adverse impacts to the marine environment as a result of dredging activities.
Acid Sulphate Soils	To have no detrimental	BHPBIO will dispose of identified PASS dredged material at Spoil	During dredging and	No detrimental

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<b>Commitment</b>	<b>Objective</b>	<b>Action</b>	<b>Timing</b>	<b>Outcome</b>
	environmental impact associated with PASS dredged material.	Ground 'I', keeping this material saturated during dredging operations and transport for disposal. BHPBIO will control reclamation activities and implement measures to minimise the effects within and adjacent to DMMA as related to ASS.	reclamation activities	environmental impacts as a result of dredging and reclamation activities from PASS.
Mangrove Protection	To limit the disturbance of mangroves to less than 6.5 ha.	BHPBIO will undertake all works to ensure that the total area of mangroves directly and indirectly adversely affected within the port area shall not exceed 6.5 ha	During construction and reclamation	No disturbance of mangroves outside the proposed project footprint.
Land Use	To stabilise and rehabilitate berms and infill areas where practicable to reduce dust emissions and reduce visual impacts.	BHPBIO will stabilise and manage DMMA B1, B2 and A upon completion of dredged material disposal activities to protect visual amenity, reduce dust emissions from open areas and minimise impacts to underlying groundwater.	Post dredging and reclamation activities	Limited dust emissions and impacts to visual amenity values from the construction of DMMA.
Introduced Marine Species (Pests)	To prevent the introduction or establishment of any non-indigenous species to the waters adjacent to the proposal.	BHPBIO will prevent the introduction/establishment of non-indigenous marine species to the waters adjacent to the proposal in accordance with the Introduced Marine Species Management Procedure in the DMP.	During dredging activities	No introduction or establishment of marine pests as a result of dredging activities.
Construction Dust	To ensure that does not cause material or significant environmental harm to native vegetation and fauna or adversely affect public amenity.	BHPBIO will monitor and control dust associated with reclamation activities to ensure that there is no significant environmental harm to native vegetation and native fauna or adverse affects to public amenity.	During construction and reclamation	Limited dust emissions from reclamation activities and no impacts to native vegetation and fauna and public amenity.
Construction Noise	To undertake construction activities in compliance with regulation 13 of the Environmental Protection (Noise) Regulations 1997.	BHPBIO will monitor and control noise associated with dredging and reclamation activities to ensure activities in compliance with regulation 13 of the Environmental Protection (Noise) Regulations 1997.	During construction, dredging and reclamation	Minimal or no impacts to public amenity from construction noise generated from dredging and reclamation activities.

## 10.2 CONCLUSIONS

BHPBIO considers that the proposal to support maritime infrastructure and to increase the throughput capacity of the Company's Port Hedland operations has been designed, and will be undertaken in a manner that will minimise impacts on the surrounding biophysical and social environments.

The proposal as described in this document has been developed to avoid, minimise, manage and mitigate environmental impacts. Some decisions made early in the project planning stage which significantly reduce both environmental and social impacts are as follows:

- Site selection studies enabled optimisation of sites to avoid mangrove disturbance where possible. While it was not possible to avoid all direct impacts on mangroves, by conducting the field surveys early in the pre-feasibility phase of the project, impacts have been minimised as much as practical. The decision to reclaim DMMA B1 and B2 avoided the need to clear an equivalent land area and the corresponding impact on mangroves. The site (and shape) of DMMA A was designed to minimise clearance of mangroves. Furthermore, the early recognition of the offshore disposal of PASS minimised the size of the onshore disturbance footprint. Finally, the condition and productivity of the mangroves was a consideration in the placement of the DMMA so that impacts could be minimised. It is predicted that approximately 6.5 ha of mangroves will be cleared during the implementation of this proposal. This is clear evidence of the success of the BHPBIO's commitment to avoid impacts on mangroves.
- The early decision to use offshore disposal for the PASS material has ensured that ASS will not become an environmental legacy in the future. However, the onshore disposal of non-PASS material recognises that if the dredged material is appropriately managed, it represents a valuable commodity for use in future developments.

This document describes the impacts of the proposal, and for each factor discusses:

- The EPA objective for that factor;
- The potential impact;
- The management of impacts; and
- The outcome.

The following environmental factors were considered:

- Marine water quality (key);
- Acid sulphate soils (key);
- Marine habitat disturbance – mangroves (key);
- Land use (key);
- Marine habitat disturbance – non-mangrove (relevant);
- Marine fauna (relevant);
- Marine pests (relevant);
- Coastal processes (relevant);
- Terrestrial flora and fauna (relevant);
- Construction noise (relevant);
- Visual impact (relevant);
- Indigenous heritage (relevant);
- Recreation (relevant);
- Construction dust (relevant);
- Waste Management (Solid and Liquid Wastes) (relevant); and
- Hydrocarbons and Hazardous Materials (relevant).

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BHPBIO has developed the following management plans to specifically address environmental impacts associated with the key factors.

- Dredging Management Plan (**Appendix C**);
- Acid Sulphate Soil Management Plan (**Appendix D**);
- Mangrove Management Plan (**Appendix E**); and
- Land use Management Plan (**Appendix F**).

In the event that the Minister for the Environment considers the project to be environmentally acceptable, these management plans will be amended to incorporate any conditions of approval or additional project commitments.

Where it is proposed to manage potential impacts to an acceptable level through the implementation of BHPBIO existing construction EMP and BHPBIO's Environmental Management System (EMS) then the framework of the applicable elements of that plan and system are also included in the appendices.

For all factors assessed, it is considered that with the implementation of the proposed management and mitigation the EPA objectives can be met and environmental impacts will be minimised to ALARP.