MARDIE SALT AND POTASH PROJECT

WESTERN AUSTRALIA

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

EPBC 2018/8236: Mardie Salt Project
EPBC 2022/9169: Optimised Mardie Project
EPBC 2024/___: Optimised Mardie Project

Declaration of accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and Biodiversity Conservation Regulations 2000 (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed: 

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Position: Manager Environmental Approvals and Compliance

Organisation: Mardie Minerals Pty Ltd
ABN 50 152 574 457

Date: 20 December 2024

Document Control

4	Dec 2024	Update to include EPBC 2024/___ Optimised Mardie Project (additional clearing of Triodia grassland habitat)	S Van Straaten		S Van Straaten
3	Oct 2024	Update following EPBC 2022/9169 approval and Variation of conditions attached to approval EPBC 2018/8236	Preston Consulting	K Frehill	S Van Straaten
2c	Jun 2024	Revised to address comments on Optimised Project	K Frehill	S Van Straaten	S Meredith
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Table of Contents

List of Tables

List of Figures

1. PURPOSE

The purpose of this Construction Environmental Management Plan (CEMP) is to provide the framework for the management of environmental aspects and impacts during the course of the construction and construction maintenance works for the BCI Minerals Limited (BCI) Mardie Salt and Potash Project (Project).

This CEMP is to ensure BCIs environmental obligations, including Licence to Operate, are met at all times and by all parties operating on the premises during construction and construction maintenance works. It provides an overview of environmental controls that will be implemented for all identified environmental impacts and sets out conditions under which the Project will proceed.

The management measures described in this CEMP address those environmental aspects that are in addition to the conditional Environmental Management Plans (EMP) that are relevant to construction and construction maintenance works activities, outlined in Section 10.

1.1 Project Description

BCI is developing a greenfield high-quality salt and sulphate of potash (SOP) project and associated export facility at Mardie, approximately 80 kilometres (km) south-west of Karratha, in the Pilbara region of Western Australia (WA).

The Project was referred and approved in two stages. BCI referred the Original Mardie Salt Project (DFS) to the WA Environmental Protection Authority (EPA) and Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) in 2018. The DFS was assessed under an accredited process and was granted approval under:

- State Ministerial Statement (MS) 1175, in November 2021 and
- Commonwealth EPBC 2018/8236 in January 2022.

In 2022, Mardie Minerals Pty Ltd (a wholly owned subsidiary of BCI) submitted a referral for the Optimised Mardie Project (OMP), which was considered to be a 'significant change' to the DFS approved under MS1175 and EPBC 2018/8236. The OMP was also assessed under an accredited process and was granted approvals under:

- State MS1211 in October 2023; and
- Commonwealth EPBC 2022/9169 in September 2024.

In October 2024, DCCEEW authorised the decision to amend the EPBC 2018/8236 conditions to mirror the conditions of EPBC 2022/9169.

In December 2024, Mardie Minerals Pty Ltd submitted a referral for the OMP relating to additional clearing required of Triodia grassland habitat, to DCCEEW for assessment.

The Project is a solar evaporative salt project that uses seawater, a series of concentrator solar ponds, crystallisation ponds and processing plants to produce up to 5.35 million tonnes per annum (Mtpa) of salt and up to 140 kilo tonnes per annum (ktpa) of SOP.

The salt and SOP production process commences with seawater being abstracted from an adjacent tidal creek via a screened intake and pumped into a series of concentrator ponds, where it progressively evaporates to form a saline brine. The brine from the final concentrator pond is pumped into the primary and secondary salt crystalliser ponds, where halite (NaCl) salts are crystalised and harvested once the remaining brine has been decanted and pumped into the kainite type mixed salt (KTMS) crystalliser ponds where potassium rich salts are recovered. Mechanically harvested halite salts from the primary and secondary crystallisation ponds are transported to a salt washing plant, where impurities (mainly gypsum and ambient dust) are washed out of the salt using seawater, to produce a high purity final product. Potassium-rich salts produced in the KTMS crystallisers are stockpiled and processed within the SOP processing plant to produce SOP fertiliser. SOP is then transported to the stockyards alongside the halite salt ready for export.

The SOP fertiliser product is then transported to the stockyards alongside the halite salt ready for export through the jetty. Remaining brines that cannot be reprocessed are sent to the waste bitterns storage pond, from where the bitterns are diluted with seawater and discharged out to sea through a multi-port diffuser.

Unlike typical mining/resource operations, the Project does not rely on a finite resource and therefore will not close due to resource depletion. As a result, the life of the Project is expected to be at least 60 years.

A quarry will be located approximately 1.7 km north-west of the intersection of Mardie Road and North-west Coastal Highway. The quarry will be mined to supply rock, rip rap, concrete aggregate and road base required for construction of the Project.

Table 1 describes the activities proposed for the Project.

Table 1: Project Activities

Element
Physical Elements
Ponds Envelope – evaporation and crystalliser ponds, processing plant, desalination plant, administration, accommodation camp, associated works (access roads, laydown, etc.)
Marine Envelope – trestle jetty export facility, seawater intake and pipeline, bitterns pipeline, outfall diffuser and mixing zone
Terrestrial Infrastructure Envelope – access / haul road, quarry, laydown, groundwater source bores, additional infrastructure
Transhipment Corridor Envelope – channel to allow access for transhipment vessels
Dredge Development Envelope
Construction and construction maintenance Elements
Dredging including maintenance dredging and seabed levelling
Drainage corridors to maintain surface water flows
Clearing of vegetation in ‘good’ to ‘excellent’ condition, including Horseflat Priority Ecological Community (PEC) and Threatened / Priority Fauna habitats
Clearing of Benthic Communities and Habitats (BCH), including landward samphire, coastal samphire, algal mats, mangroves and sub-tidal BCH

Element
Internal and haul roads maintenance
Maintenance of site drainage and surface water flow structures
Pond wall maintenance
Operational Elements *(Not applicable to this CEMP)*
Bitterns discharge
Groundwater abstraction
Seawater intake

Figure 1 shows the indicative location of the physical elements of the DFS, and Figure 2 shows the changes to the physical elements as per the OMP.

1.1.1 Maintenance Construction Activities

Maintenance construction activities on land are anticipated for site drainage / surface water flow structures, pond walls, the Project main access, and internal haul roads around primary and SOP crystallisers. Hazardous waste that may be generated from maintenance construction activities include drilling fluids, spill clean-up material, empty chemical containers, oily waste water and grease from routine maintenance activities. Significant rain events (e.g. cyclones) may create scours in a pond wall that becomes a weak spot for future rain events. The major risk areas are the outer sea wall where a breach would result in the loss of brine from one or more ponds.

It is likely that during marine maintenance construction activities, rigs and support vessels will be used for the periodic inspection and maintenance of piles, dolphins and moorings. These inspections will monitor the piles, cathodic protection and subtidal structures and will identify any issues associated with pile structural integrity.

Maintenance dredging within the berth pocket at the jetty head and/or the navigation channel will include sea bed levelling to even irregularities in the seabed, and use of conventional dredging equipment that have the appropriate dimensions to access and manoeuvre within the berth pocket and navigation channel. This equipment would dredge accreted sediments and transport it for disposal at the approved dredge spoil disposal location.

Non-hazardous solid waste will be generated during maintenance construction, and will include waste from the piling maintenance rig, support and supply vessels.

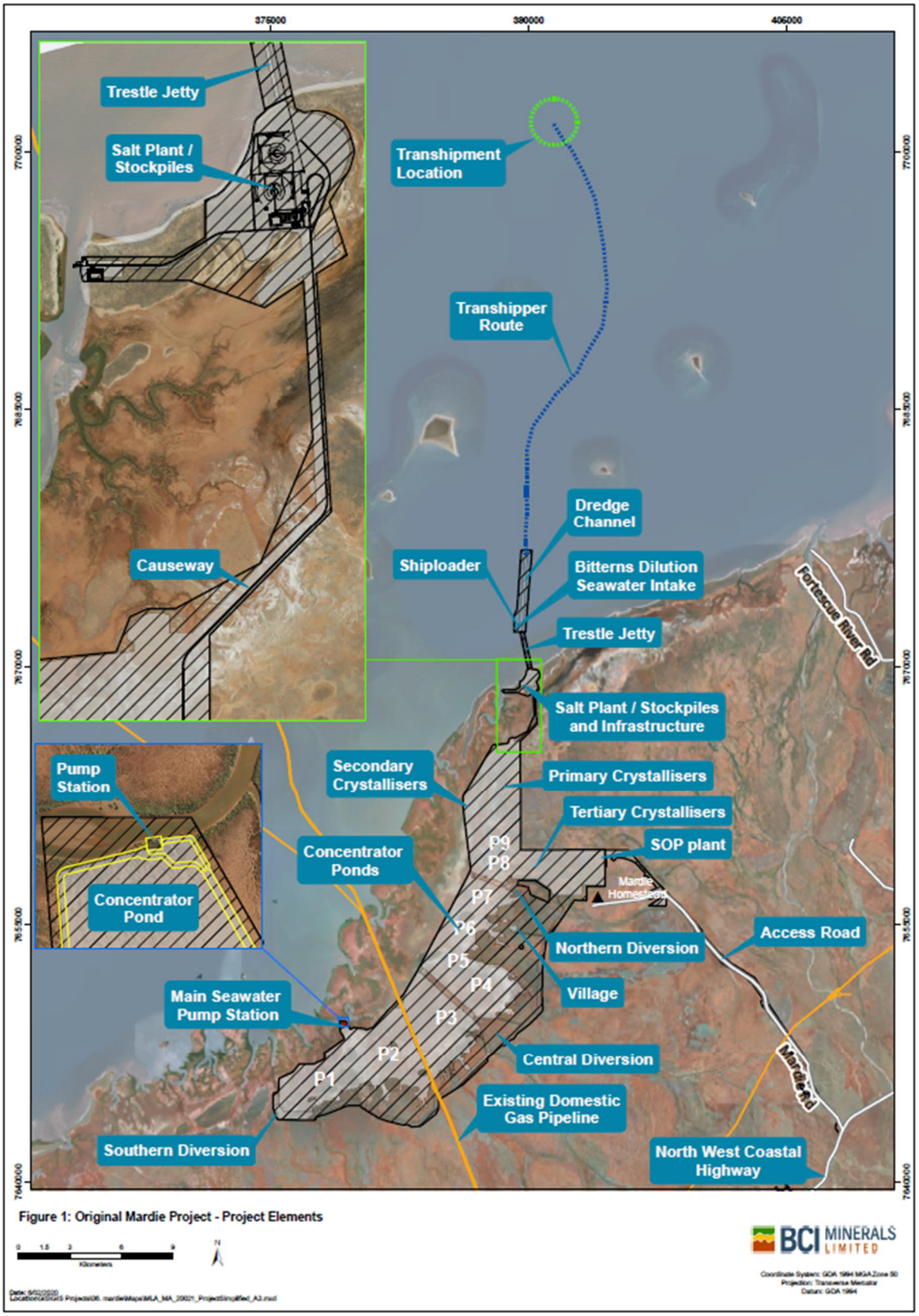

Figure 1: Original Mardie Project – Project Elements

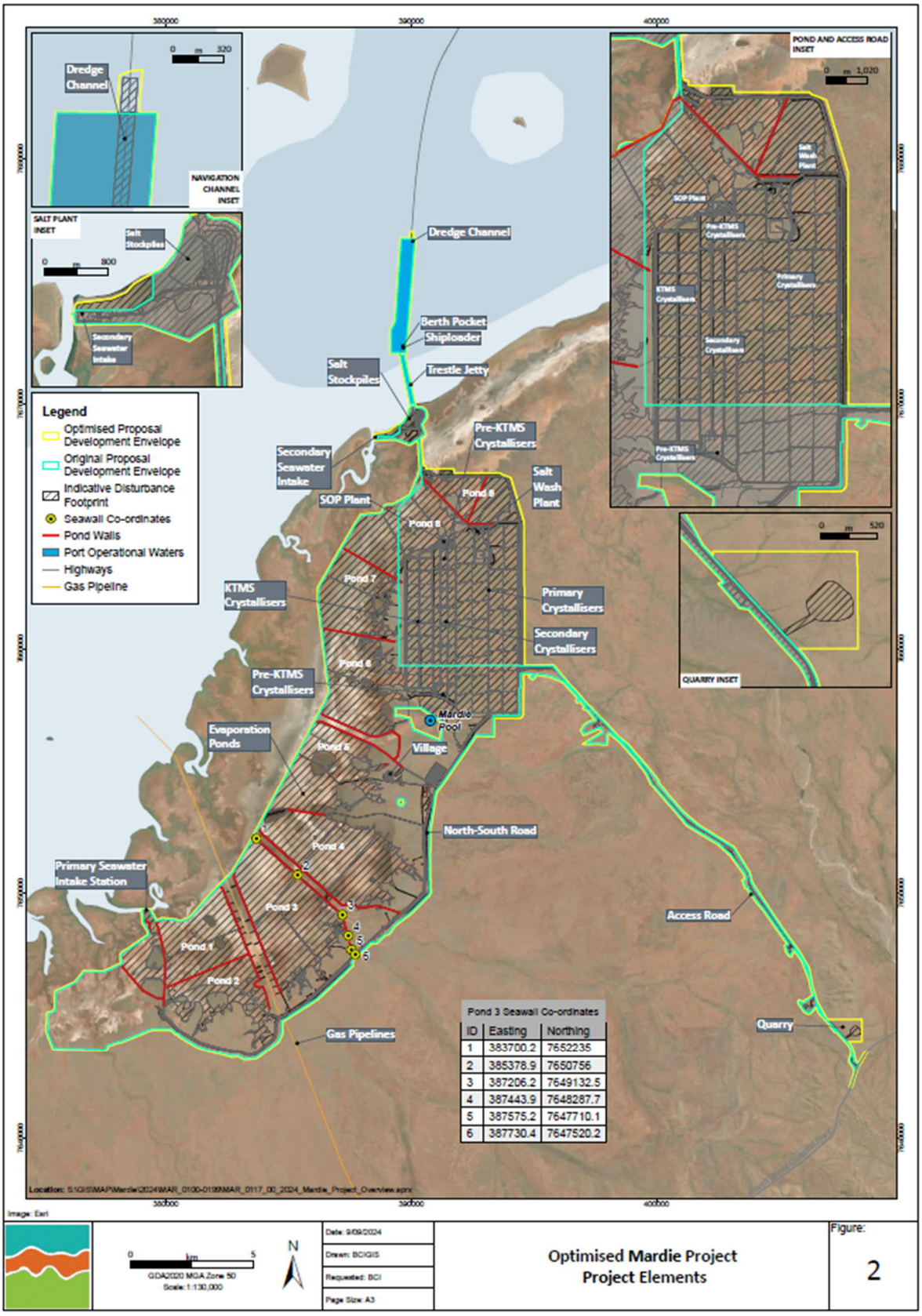

Figure 2: Optimised Mardie Project – Project Elements

1.2 Conditions of Approval

Table 2 below references the EPBC 2018/8236 and EPBC 2022/9169 conditions of approval for the DFS and OMP respectively, that are relevant for the context of this CEMP. The conditions in EPBC 2018/8236 were amended in October 2024 to mirror the EPBC 2022/9169 conditions, and therefore Table 2 notes where each condition was sourced from. Construction conditions that refer to other EMPs have not been included in Table 2 , noting that they are addressed in the relevant conditional EMPs outlined in Section 10.

Conditions of Approval associated with the referral EPBC 2024/___ will be added to Table 2 in due course, once assessment of the referral has been completed and a decision is known.

Table 2: Conditions of Approval

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
EPBC 2018/8236 EPBC 2022/9169	1	The approval holder must not: a) clear outside of the development envelope. b) construct outside of the development envelope.	Section 9, Section 9.1	Land clearing and topsoil disturbance activities associated with the construction of the Project will be managed through an internal Ground Disturbance Permit (GDP). The GDP allows for the assessment of the disturbance areas to ensure that all environmental approval and heritage obligations are complied with. In addition, the GDP enables the collection of data used for corporate reporting, statutory reporting such as annual environmental reporting and closure liability estimates. The GDP will comply with clearing requirements outlined within the EPBC 2018/8236 and EPBC 2022/9169 conditions, and with conditions in EPBC 2024/___ (to be assessed), including this condition. Section 9.1 describes management provisions in place for ground disturbance during construction. The following management actions included in Table 10 address condition 1 to ensure no clearing and construction occur outside of the development envelope. • *All areas proposed for clearing will be clearly delineated within an approved clearing area and undertaken according to relevant legislative and legal obligations* • *BCI (including BCI's contractors) will not construct outside of the development envelope.*

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
EPBC 2018/8236 EPBC 2022/9169	4	To avoid and mitigate harm to protected matters as a result of noise, vibration and artificial light pollution associated with the Action, outside of daylight hours, the approval holder must not: a) clear within 1 kilometre (km) of Mardie Pool; b) construct within 1 km of Mardie Pool.	Section 9.2	Section 9.1 describes management provisions in place for ground disturbance during construction. The following management actions included in Table 10 address condition 4 to ensure the buffer around Mardie Pool is maintained. • *All areas proposed for clearing will be clearly delineated within an approved clearing area and undertaken according to relevant legislative and legal obligations*
EPBC 2018/8236 EPBC 2022/9169	5	To avoid and mitigate harm to terrestrial fauna as a result of the Action, the approval holder must ensure: b) On every day of the Action that clearing and construction activities are to be undertaken, that within two hours of sunrise and prior to the clearing or construction commencing, a fauna spotter catcher checks all open trenches to detect, safely remove and relocate any trapped terrestrial fauna to suitable habitat where clearing will not occur that day. c) a fauna spotter catcher is present during all clearing and construction, and given authority to supervise, halt and order the manner in which any clearing and construction is undertaken within any low rocky hill habitat, grassland habitat, migratory shorebird habitat, coastal samphire habitat, and open riparian woodlands vegetation. d) if any terrestrial fauna individual is detected as present within an area undergoing clearing or construction, the fauna spotter catcher immediately halts the clearing or construction until the fauna spotter catcher	Section 9.2	The requirements listed in condition 5 have been added as management actions for fauna objectives and targets (Table 11).

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		has confirmed the terrestrial fauna individual is no longer present within the area of clearing or construction.		
EPBC 2018/8236 EPBC 2022/9169	6	The approval holder must maintain and keep accurate records of all fauna sightings, and the management of fauna sightings during clearing and construction to demonstrate compliance with condition 5.	Section 9.2	This condition has been added as a management action for fauna objectives and targets (Table 11).
EPBC 2022/9169	13	The approval holder must undertake regular weed management measures across the development envelope from commencement of the Action until completion of the Action, including the following measures: a) ensure all road vehicles are washed down before entering the development envelope, b) ensure that any road vehicle moving from an area of weed infestation is cleaned of any soil and organic matter before it enters any area free of weed infestation, and c) not move any soil from any area of weed infestation to any area free of weed infestation.	Section 9.7	The weed management strategy for the Project is outlined within Section 9.7. The objectives, targets, potential impacts and management provisions for weeds is outlined within Table 16. Weed management actions include: • vehicle wash-down requirements; • measures to avoid the transport of weeds and soil; and • reference to the Mesquite Management Plan. The requirements listed in condition 13 have been added as management actions for weed objectives and targets (Table 16).
EPBC 2018/8236	13	The approval holder must undertake regular weed control measures across the development envelope from commencement of the Action until completion of the Action. Weed control measures include: a) ensuring that any vehicle associated with the Action moving from an area of weed infestation is cleaned of any soil and organic matter before it enters any area free of weed infestation;	Section 9.7	The weed management strategy for the Project is outlined within Section 9.7. The objectives, targets, potential impacts and management provisions for weeds is outlined within Table 16. Weed management actions include: • vehicle wash-down requirements; • measures to avoid the transport of weeds and soil; and • reference to the Mesquite Management Plan. The requirements listed in condition 13 have been added as management actions for weed objectives and targets (Table 16).

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		b) not moving any soil from any area of weed infestation to any area free of weed infestation; c) from the date of this variation decision, ensure all project vehicles entering or leaving the development envelope (excluding the location where the development envelope intersects with the North West Coastal Highway) are cleaned of any soil and organic matter at the Mardie access road washdown station; and d) from the date of this variation decision, ensure all public vehicles entering or leaving the development envelope (excluding the location where the development envelope intersects with the North West Coastal Highway) have access to the Mardie access road washdown station, and ensure that clearly legible and comprehensible signage that directs the public to clean vehicles of any soil and organic matter is erected on both sides of the road, for drivers entering and leaving the development envelope.		
EPBC 2018/8236 EPBC 2022/9169	22	The approval holder must securely contain all waste that is present within the development envelope from the commencement of the Action until completion of the Action and ensure: a) all waste is removed from the development envelope at least once each month or as required by any state approvals, b) all waste removed from within the development envelope is only disposed of at an appropriate waste disposal facility	Section 2.1, Section 5.1, Section 9.2, Section 9.5, Section 9.6	The management of waste for the Project is outlined within the Waste Management Procedure. Table 3 outlines key performance indicators (KPIs) for waste management, which addresses condition 22(b). Table 14 outlines the environmental management strategy for waste, including objectives, targets, potential impacts, and the management actions BCI will undertake. Hydrocarbon and chemical waste is discussed separately within Table 15. Waste management actions are considered to appropriately address condition 22(b), 22(c), 22(d) and 22(e).

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		approved by the Western Australian Government, c) no waste from the development envelope enters migratory shorebirds habitat, d) no waste from the development envelope enters marine fauna habitat, e) no waste from the development envelope enters Mardie pool.		
EPBC 2018/8236 EPBC 2022/9169	23	The approval holder must undertake dust suppression measures from the commencement of the Action until the completion of the Action, including use of water and/or dust suppressants on disturbed soils, during product transfers and within storage areas in accordance with the Construction Environment Management Plan.	Section 2.1, Section Error! Reference source not found., Section 9.3	Table 3 outlines a KPI for dust management, including the provision of dust mitigation measures and reporting/monitoring. The risk assessment (Table 9) has considered the impacts of dust from the Project (factor 1.6), with a raw and treated risk score of Low. Dust suppression (by wetting of exposed surface e.g. water truck) is included as a management action in Table 12. Monitoring for dust includes visual dust monitoring.
EPBC 2018/8236 EPBC 2022/9169	24	To avoid road strike to EPBC Act listed threatened fauna individuals as a result of the Action, the approval holder must: c) prior to commencement of the Action, on both sides of all roads within the development envelope where vehicles enter the low-speed zone, erect clearly legible and comprehensible signage alerting drivers to the speed limit and the likelihood of encountering wildlife.	Section 5.1, Section 9.2	Section 9.2 describes management provisions in place for Fauna during construction. The low-speed zones within the development envelope are shown in Figure 3. The following management action included in Table 10 address condition 24 to ensure road strikes of EPBC Act listed threatened fauna individuals is avoided during construction. • *Road and tracks to be signposted with speed limits and warnings of conservation significant fauna risks.* Section 5.1 notes that speed limits and hazards of dawn/dusk driving are included in BCI induction training.
EPBC 2018/8236 EPBC 2022/9169	32	To minimise harm to protected matters and their habitats, including Mardie Pool, open riparian woodlands vegetation and Benthic Communities and Habitat, the approval holder must ensure that the construction, operation and presence of the intertidal rock causeway does not impede or alter any natural	Section 9.3, Section 9.10	The requirements listed in condition 32 have been added as management actions for water management objectives and targets (Table 19). Additionally, the mitigation measures for erosion and sediment control in Section 9.3 have similar objectives and outcomes to water management.

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		water flows to and from Benthic Communities and Habitat or Mardie Pool or otherwise harm the existing coastal tidal inundation regime (the Intertidal Flow Objective). To ensure the Intertidal Flow Objective is achieved, the approval holder must: a) comply with condition B3-1(3) of the WA Approval to ensure that the Intertidal Flow Objective can be achieved. b) not construct the intertidal rock causeway unless the Intertidal Flow Objective will be achieved. c) install floodways and culverts at the locations which the *Causeway Tidal Inundation Assessment – technical memorandum (Advisian 25 July 2022, Doc No: 311012-A01000-HYD-MEM-0034)* demonstrates will ensure that the Intertidal Flow Objective will be achieved. d) undertake daily visual monitoring at the peak of every high tide and at least once at the midpoint between high tides, commencing within 1 month of the commencement of the construction of the intertidal rock causeway and continuing until at least 1 month after all construction of the intertidal rock causeway has been completed, to determine whether the Intertidal Flow Objective is being achieved. e) if any monitoring detects that the Intertidal Flow Objective is not being achieved, the approval holder must report this to the department in writing within 2 business days of the monitoring event that detected that		Condition 32(a) refers to condition B3-1(3) of MS1211, which is included below for reference: *B3-1 The proponent must ensure the implementation of the proposal achieves the following environmental outcomes* (3) *no changes to the extent of surface water flooding during a one (1)-year ARI or changes to tidal inundation as a result of the construction of the intertidal causeway that are greater than predicted in Causeway Tidal Inundation Assessment – technical memorandum (Advisian 2022);*

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		the Intertidal Flow Objective was not achieved. f) undertake monitoring (as described in condition 32d) at least once each month and for 7 days following each large storm event, until the completion of the Action to determine whether the Intertidal Flow Objective continues to be met.		
EPBC 2018/8236	32	g) if the monitoring, inundation modelling and further engineering solutions undertaken and implemented after the construction of the intertidal rock causeway shows that the Intertidal Flow Objective is unlikely to be achieved, then the intertidal rock causeway must be removed to ensure the Intertidal Flow Objective is achieved within 6 months of the completion of the construction of the causeway. Unless the approval holder provides suitable evidence that impacts from not meeting the Intertidal Flow Objective due to the intertidal rock causeway are likely to not result in a significant impact. This evidence must be submitted to the department within 6 months of completion of the construction of the causeway. The Minister will provide advice in writing on whether the intertidal rock causeway will need to be removed or can be retained.	Section 9.3, Section 9.10	The requirements listed in condition 32(g) have been added as a management action for water management objectives and targets (Table 19).
EPBC 2018/8236 EPBC 2022/9169	33	To minimise harm to protected matters, the approval holder must ensure that surface water diversions do not impede or alter any existing intertidal flows or surface water flows to the Mardie Pool, open riparian woodlands vegetation or Benthic Communities and	Section 9.3, Section 9.10	The requirements listed in condition 33 have been added as management actions for water management objectives and targets (Table 19). Additionally, the mitigation measures for erosion and sediment control in Section 9.3 have similar objectives and outcomes to water management.

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		Habitat, and that the intertidal flows and surface water flows are equivalent to the modelled predictions described in the Mardie Project Environmental Review (the Surface Water Objective). To ensure these outcomes, commencing no later than one month after commencing the construction of any surface water diversion, and continuing until the completion of the Action, the approval holder must: a) comply with conditions B3-1(1) and B3-1(2) of the WA Approval; b) monitor surface water flows at least once each month to determine whether the surface water flows to the Mardie Pool are maintained and equivalent to the modelled predictions in the *Causeway Tidal Inundation Assessment – technical memorandum (Advisian 25 July 2022, Doc No: 311012-A01000-HYD-MEM-0034)*. The monitoring must include data collection from Mardie Pool, the intertidal zone, and at least three points within each of the drainage channels.		Condition 33(a) refers to conditions B3-1(1) and B3-1(2) of MS1211, which are included below for reference: *B3-1 The proponent must ensure the implementation of the proposal achieves the following environmental outcomes* *(1) no adverse impact to water levels or water quality in Mardie Pool as a result of changes to groundwater regimes or groundwater quality;* (2) *no adverse impact to water levels or water quality in Mardie Pool as a result of surface water flows associated with the proposal;*
EPBC 2018/8236 EPBC 2022/9169	35	During all marine clearing and marine construction, and until all marine clearing and marine construction has been completed, the approval holder must: b) comply with conditions B5-2, B5-6, B5-7, B5-8, and B5-9 of the WA Approval, to the extent that the WA Approval conditions relate to protected matters, avoid and mitigate harm as a result of marine noise associated with the Action, and c) undertake all marine clearing and marine construction in accordance with the *EPBC Act*	Section 9.2, Section 10	BCI manage underwater noise through the implementation of the Underwater Noise Management Procedure, referenced throughout the CEMP. Additionally, all potential impacts related to dredging are addressed by the Dredge Management Plan Multiple management actions are included in Table 11 that address condition 35, specifically related to vessel movements and construction activities. Condition 35(b) refers to conditions B5-2, B5-6, B5-7, B5-8 and B5-9 of MS1211, which are included below for reference: *B5-2 The proponent shall implement the proposal to achieve the following environmental objectives:*

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		Policy Statement 2.1 - Interaction between offshore seismic exploration and whales: Industry guidelines, Commonwealth of Australia 2008.		*(1) minimise the risk of physical injury or mortality from vessel strike on significant marine fauna; and* *(2) minimise the risk of behavioural changes, health impacts, physical injury or mortality from underwater noise emissions from construction or operations to significant marine fauna (including temporary or permanent hearing loss).* *B5-6 The proponent must undertake the following during pile driving activities:* *(1) soft start-up procedures for a period of at least thirty (30) minutes prior to the commencement of each pile driving event, including recommencement after suspension of piling activities;* *(2) pile driving activities to take place during daylight hours only;* *(3) implement a significant marine fauna observation zone consisting of at least a two (2) kilometre radius from the noise emitting source whereby a suitably qualified and experienced marine fauna observer must undertake continuous significant marine fauna observation for a minimum of thirty (30) minutes prior to the commencement of pile driving and at all times during pile driving activities;* *(4) implement an exclusion zone consisting of at least one (1) kilometre radius from the noise emitting source whereby:* *(a) pile driving cannot commence should significant marine fauna be within the exclusion zone; and* *(b) pile driving activities to cease should significant marine fauna enter the exclusion zone during pile driving are not to recommence until the animal(s) have moved outside the exclusion zone.* *(5) must engage suitably qualified and experienced marine fauna observer(s) who have a demonstrated knowledge of significant marine fauna in the North-West region to undertake continuous observations in the observation zone and exclusion zone;*

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
				(6) maintain a log of recorded sightings, locations and behaviours indicative of stress or disturbance of significant marine fauna, and submit these to the National Cetacean Sighting Database; and *(7) document and report to the CEO, DCCEEW and DBCA any incidents relating to significant marine fauna injury / mortality.* *B5-7 During dredging, spoil disposal and seabed levelling activities, the proponent shall:* *(1) implement measures to avoid vessel strikes with significant marine fauna;* *(2) implement measures to minimise direct entrainment impacts to significant marine fauna, including not operating dredge pumps during transit and dredge cutterhead lowered to surface before commencement of soft start procedure;* *(3) install overflow screen on dredgers to visually assess for turtles and/or turtle remains that may have been entrained during dredging after each load;* *(4) implement a significant marine fauna observation zone consisting of a at least three (3) kilometre radius from the dredging activity whereby an observer must undertake significant marine fauna observation for a minimum of thirty (30) minutes prior to the commencement of dredging and at all times during dredging activities;* *(5) implement an exclusion zone consisting of at least 500 metre radius from the dredging activity whereby:* *(a) dredging cannot commence should a significant marine fauna be within the exclusion zone; and* *(b) dredging activities to cease should a significant marine fauna enter the exclusion zone during dredging and are not to recommence until the significant marine fauna have moved outside the exclusion zone;*

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				(6) must engage a suitably qualified and experienced marine fauna observer who has a demonstrated knowledge of significant marine fauna in the North- West region to undertake observations in the observation zone and exclusion zone; *(7) maintain a log of recorded sightings, locations and behaviours indicative of stress or disturbance of significant marine fauna and submit these to the National Cetacean Sighting Database; and* *(8) document and report to relevant regulators:* *(a) any incidents relating to significant marine fauna injury /mortality; and* *(b) where turtles are a consideration the effectiveness of mitigation measures to prevent turtle injury and mortality.* *B5-8 The proponent shall not conduct dredging during the period October–March (inclusive) or pile driving during the period September–January (inclusive), unless the CEO has confirmed otherwise by notice in writing.* *B5-9 Clearing in the fauna habitat type identified as low-quality turtle nesting habitat (sandy beach habitat) in the Mardie Project – Environmental Review Document (June 2020) is limited to a width of fifty (50) metres, parallel to the high-water mark.*
EPBC 2018/8236 EPBC 2022/9169	43	To minimise impacts to protected matters and their habitats, including the Mardie Pool, open riparian woodlands vegetation and Benthic Communities and Habitat, the approval holder must, at least once per week, from the commencement of the Action until the completion of the Action, monitor the evaporation pond walls to detect any for surface expressions of seepage, brine spill and structural integrity.	Section 9.3, Section 9.4	Table 12 outlines management actions for erosion and sediment control, including the preparation and implementation of a Flood Management Plan, to reduce indirect impacts due to flood risk to sensitive environmental factors. This will include consideration of evaporation pond wall breakages. The Groundwater Monitoring and Management Plan (GMMP) includes provisions for the monitoring of evaporation pond walls. Table 13 outlines the management actions for mitigating impacts due to Acid Sulphate Soils (ASS), including the degradation or corrosion of engineered structures.
EPBC 2018/8236	49	To avoid and mitigate harm as a result of the Action on protected matters, the approval holder must	This CEMP	This CEMP (Rev 3) will be implemented as a requirement of this condition.

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
EPBC 2022/9169		implement the CEMP from the commencement of the Action and continue to implement the CEMP at least until completion of all clearing and construction associated with the Action.		
EPBC 2018/8236 EPBC 2022/9169	50	Within 1 month of the date of this approval/variation decision, the approval holder must submit a revised version of the CEMP for approval by the Minister. The revised version must include the following additions: a) all construction related conditions in this approval, b) measures to protect the *Minuria tridens* during construction.	This CEMP, Table 2, Section 9.1	All construction related conditions within the EPBC 2018/8236 and EPBC 2022/9169 approvals that are not already addressed within other conditioned EMPs (Section 10) have been included within this table (Table 2). These construction related conditions have been assessed against the CEMP to ensure they are appropriately addressed, as per condition 50(a). Measures to protect *Minuria tridens* during construction are listed in Section 9.1. The following management actions included in Table 10 address condition 50b to ensure the CEMP includes measures to protect *M. tridens* during construction. • *M. tridens exclusion areas will be shown on plans and clearly demarcated in the field.* • *Annual monitoring of M. tridens within the Development Envelope to be conducted in accordance with Condition 11 of EPBC 2018/8236 and EPBC 2022/9169.* • *BCI will not harm any M. tridens within the DFS development envelope from 23 June 2023 until the completion of the action, as per Condition 10 of EPBC 2018/8236.* • *BCI will not harm any M. tridens within the OMP development envelope from the date of approval of EPBC 2022/9169 and until the completion of the Action.*
EPBC 2022/9169	51	Prior to undertaking any maintenance construction activities, the approval holder must submit to the department for the Minister's approval a revised version of CEMP, revised to address how maintenance construction activities will be undertaken to prevent harm to protected matters and achieve the	This CEMP, Section 1.1.1, Section 8, Section 9.2, Section 9.3	This version of the CEMP (Rev 3) will be submitted to DCCEEW as a requirement of this condition. Maintenance construction activities for terrestrial and marine environments are summarised in Section 1.1.1. Additionally, the risk assessment (Section 8) considers maintenance construction activities. The following management actions included in the listed tables to address

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		environmental objectives of condition B1-1 of the WA Approval. The approval holder must not commence any maintenance construction activities until the revised plan has been approved by the Minister in writing.		condition 51, outlining how maintenance construction will be conducted to prevent harm on protected matters and address condition B1-1 of MS1211. Table 11 • *Maintenance activities on marine structures will be restricted to be outside of the environmental blackout period as per Condition B5-8 of MS1211.* • *Marine fauna observers will be in attendance and the approved Underwater Noise Management Procedure will be implemented during maintenance activities that need to be carried out from within the marine environment.* Table 12 • *The windrows along the trafficable areas of the pond walls will be inspected twice yearly – before and after cyclone season, and maintenance repairs initiated as part of a regular road repair program.* - *Waste gypsum from the salt wash plant settling ponds can be used for windrow repair.* - *Inspections for scours will be conducted prior to cyclone season and any maintenance repairs completed.* - *After cyclones, road surfaces will be inspected for scours or breaches and repairs effected at the earliest opportunity before another cyclone event. Stockpiles of road gravel will be kept at strategic locations because cyclonic rain will collect in borrow pits making them unusable, and in some low-lying areas access roads may be cut off making access for loaded gravel trucks challenging.* - *Cyclonic wind and storm surge on evaporation pond sea walls can loosen rock armour. Armour will be inspected after cyclone events and repairs initiated in areas that have been*

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
				disturbed to ensure they do not become a weak spot in subsequent events. • *All maintenance construction will be carried out in accordance with the Environmental Protection Noise Regulations 1997 (WA) and AS 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites.* Condition B1-1 of MS1211 is provided below in *italics* for reference. *B1-1 The proponent must ensure the implementation of the proposal achieves the following environmental outcomes:* *(1) no direct loss of benthic communities and habitats outside of the dredge disturbance footprint defined in Figure 3;* *(2) no irreversible loss of benthic communities and habitats outside of the authorised Zone of High Impact as spatially defined in Figure 3;* *(3) no detectable change from the baseline state of benthic communities and habitats outside of the Zone of High Impact and authorised Zone of Moderate Impact as spatially defined in Figure 3;* *(4) no change in the health, extent of coverage, or species diversity of intertidal benthic communities more than 100 m seaward of the pond walls as shown in Figure 2; and* *(5) adverse impacts to intertidal benthic communities are limited to an area within 100 m of the pond wall defined in Figure 2.*
EPBC 2018/8236	51	The approval holder must update the CEMP at least every five years while construction activities are being undertaken. If the currently approved version of the CEMP was approved by the Minister more than five years ago or if the approval holder proposes to undertake any construction activity that is not specified in the currently approved version of the	Section 12	BCI has updated the CEMP to address condition 51. This has been described in Section 12.

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		CEMP, then the approval holder must submit a revised version of the CEMP to the department for the Minister's approval prior to undertaking the construction activity and must not undertake any further construction until it is approved by the Minister. The revised plan must be consistent with the Environmental Management Plan Guidelines, include an evaluation of the effectiveness of the current version in minimising impacts to protected matters, and propose improved measures to prevent harm to protected matters and to achieve the environmental objectives of condition B1-1 of the WA Approval.		
EPBC 2022/9169	83	To compensate for the residual significant impacts of clearing and directly impacting of up to 34 hectares of coastal samphire that supports migratory shorebirds habitats, the approval holder must commission research project(s) to inform the strategic protection, better management and long-term ecological functionality of migratory shorebirds, habitat (the Marine Research Objectives). The approval holder must: c) within six (6) months of the commencement of the action, submit a detailed Research Project Proposal for the research requirements of condition 83(a) and 83(b) that will meet the Marine Research Objectives, to the department for approval by the Minister. The Research Project Proposal must include: i. The information required under condition B10-1 of the WA Approval;	Section 9.2	The requirement listed in condition 83 have been added as management actions for fauna objectives and targets (Table 11). Section 9.2 describes management provisions in place for fauna during construction. The following management action included in Table 11 address condition 83 for the preparation of research project(s): • *Commission research project(s) to inform the strategic protection, better management and long-term ecological functionality of migratory shorebirds habitat (prepared in accordance with Condition 83 of EPBC 2018/8236 and EPBC 2022/9169).*

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		ii. Details of how the proposed research projects will achieve the Marine Research Objectives; iii. Details (including relevant capacity and expertise) of the party/ies proposed to undertake the research projects, and the proposed project governance, and roles and responsibilities of the approval holder and any other party, iv. A risk assessment of the third party/ies not being able to achieve the Marine Research Objectives; v. Details of the research methodologies, proposed project timelines, progress and completion criteria, schedule of progress monitoring and reporting to the Department, for each proposed research project; vi. Details of the funding arrangements and schedule of payments including an initial 10% contribution of the overall funding to be made within two (2) months of the Research Project Proposal being approved by the Minister; vii. Details of how the Research Project Proposal takes into consideration relevant conservation advices, recovery plans and threat		

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		abatement plans for the relevant species; viii. Details of how the Research Project Proposal is consistent with the criteria for research programs specified in Appendix A of the Environmental Offsets Policy; ix. Details of how the research projects will take into consideration and utilise the following monitoring and management plans: A. Mardie Dredge Management Plan B. Marine Environmental Quality Monitoring and Management Plan C. Migratory Shorebird Monitoring and Management Plan (MSMMP) D. Groundwater Monitoring and Management Plan (GMMP). E. Benthic Community Habitat Monitoring and Management Plan (BCHMMP). F. Marine Turtle Monitoring Program. G. Illumination Plan.		

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		x. Details of permissions and permits that will need to be obtained (or have already been obtained) to conduct the research projects; xi. Assurances that the research will be conducted to a standard that would allow the findings to be published in a peer-reviewed scientific journal or report and provide sound recommendations and information for management and conservation for migratory shorebirds and their habitats; xii. Commitments that, within 6 months of completion of any research project, all reports, publications and supporting data will be provided to the department, Birdlife Australia, DBCA, and Department of Water and Environmental Regulation (DWER) and published, or the existence and locations of the reports and publications detailed, on the website for the remainder of the life of the action; and xiii. Details of a communication and engagement program to promote the achievement of the research outcomes.		
EPBC 2018/8236	83	To compensate for the residual significant impacts of clearing and directly impacting of up to 880 hectares of algal mat, 296 hectares of coastal samphire that supports migratory shorebirds habitat, 17 hectares of	Section 9.2	The requirement listed in condition 83 have been added as management actions for fauna objectives and targets (Table 11).

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		mangrove that supports migratory shorebirds and green sawfish and 79 hectares of benthic communities and habitat which supports the short-nosed sea snake, the approval holder must commission research project(s) to inform the strategic protection, better management and long-term ecological functionality of migratory shorebirds, habitat (the Marine Research Objectives). The approval holder must: c) within six (6) months of the commencement of the action, submit a detailed Research Project Proposal for the research requirements of condition 83(a) and 83(b) that will meet the Marine Research Objectives, to the department for approval by the Minister. The Research Project Proposal must include: i. The information required under condition B10-1 of the WA Approval, ii. Details of how the proposed research projects will achieve the Marine Research Objectives, iii. Details (including relevant capacity and expertise) of the party/ies proposed to undertake the research projects, and the proposed project governance, and roles and responsibilities of the approval holder and any other party, iv. A risk assessment of the third party/ies not being able to achieve the Marine Research Objectives,		Section 9.2 describes management provisions in place for fauna during construction. The following management action included in Table 11 address condition 83 for the preparation of research project(s): • *Commission research project(s) to inform the strategic protection, better management and long-term ecological functionality of migratory shorebirds habitat (prepared in accordance with Condition 83 of EPBC 2018/8236 and EPBC 2022/9169).*

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		v. Details of the research methodologies, proposed project timelines, progress and completion criteria, schedule of progress monitoring and reporting to the department, for each proposed research project, vi. Details of the funding arrangements and schedule of payments including an initial 10% contribution of the overall funding to be being approved by the Minister, vii. Details of how the Research Project Proposal takes into consideration relevant conservation advices, recovery plans and threat abatement plans for the relevant species, viii. Details of how the Research Project Proposal is consistent with the criteria for research programs specified in Appendix A of the Environmental Offsets Policy, ix. Details of how the research projects will take into consideration and utilise the following monitoring and management plans: A. Mardie Dredge Management Plan, B. Marine Environmental Quality Monitoring and Management Plan,		

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		C. approved Migratory Shorebird Monitoring and Management Plan, D. Groundwater Monitoring and Management Plan (GMMP), E. Benthic Community Habitat Monitoring and Management Plan (BCHMMP), F. Marine Turtle Monitoring Program, G. Illumination Plan, x. Details of permissions and permits that will need to be obtained (or have already been obtained) to conduct the research projects, xi. Assurances that the research will be conducted to a standard that would allow the findings to be published in a peer-reviewed scientific journal or report and provide sound recommendations and information for management and conservation for migratory shorebirds and their habitats, xii. Commitments that, within 6 months of completion of any research project, all reports, publications and supporting data will be provided to the department, Birdlife Australia, DBCA, and Department of Water		

Approval Document	Condition Number	Condition Requirement	Plan Reference	Demonstration of how the plan addresses condition requirements and commitments made in the plan to address condition requirements
		and Environmental Regulation (DWER) and published, or the existence and locations of the reports and publications detailed, on the website for the remainder of the life of the Action, and xiii. Details of a communication and engagement program to promote the achievement of the research outcomes;		
EPBC 2022/9169	97	The approval holder must notify the department electronically of the date of commencement of the Action, within 5 business days following commencement of the Action.	Section 4.2	BCI will notify DCCEEW upon the commencement of construction under EPBC 2022/9169, as required under this condition (refer to Section 4.2).
EPBC 2018/8236	97	The approval holder must notify the department electronically of the date of commencement of the Action, 10 business days following commencement of the Action.	Section 4.2	BCI will notify DCCEEW upon the commencement of construction under EPBC 2018/8236, as required under this condition (refer to Section 4.2).
EPBC 2018/8236 EPBC 2022/9169	98	The approval holder must not commence the Action later than 5 years after the date of this approval decision	N/A	BCI will commence the action prior to 9 September 2029 (5 years from the EPBC 2022/9169 date of approval) and 9 October 2029 (5 years from the EPBC 2018/8236 date of variation approval), as required under this condition.
EPBC 2018/8236 EPBC 2022/9169	100	The approval holder must notify the department electronically of the date all clearing and construction associated with the Action is complete within 5 business days following all clearing and construction associated with the Action being completed. The approval holder must not undertake any clearing nor construction after sending this notification.	Section 4.2	BCI will undertake reporting to DCCEEW as required under this condition (refer to Section 4.2).

2. ENVIRONMENTAL OBJECTIVES

The objective of this CEMP is to provide a framework for the overall environmental management of the Project, through specific management measures, and to support BCI and BCI's contractors to:

- take all practicable steps to prevent environmental and cultural heritage incidents in construction activities;
- ensure compliance with applicable environmental requirements as identified in the Licence To Operate Register;
- develop, implement and maintain an effective and efficient environmental management system;
- increase environmental and cultural awareness amongst all personnel; and
- support the continual improvement of environmental performance.

2.1 Key Performance Indicators

The KPIs for this CEMP are listed in Table 3.

Table 3: Key Performance Indicators

Indicator	Monitoring Mechanism	Target
GDP Breach	INX Event Reporting	0
Notifiable Environmental events	Significant events INX Event Reporting	0
Segregation, removal and disposal of rubbish to appropriate waste stream Scrap materials, redundant electrical equipment, packaging from equipment and materials.	Waste Management procedure Correct waste stream segregation Records of disposal	100%
Spill Management	INX Event Reporting	100% of all spills >20L captured in INX Event Reporting
Dust Management	Provide effective control of all dust and windborne material emanating from site works by use of ground and road watering Daily timesheets and record keeping	As necessary
Weed Management	Weed Inspection Report per vehicle	100% Vehicles Inspected
Environmental Audits (annual)	Audits Completed	Minimum 95% completed
Incident Investigations	INX Event Reporting	Closed within 28 days, unless extenuating circumstances require further investigations as per consultation with the regulator.

Indicator	Monitoring Mechanism	Target
Corrective Actions	Overdue corrective actions	0
Toolbox meetings	1 per week (Safety & Environmental KPI combined)	100% attendance

3. ROLES AND RESPONSIBILITY

All Project key team members shall ensure that the environmental requirements of the Project are complied with. The responsibilities of the key team members and other key project personnel are summarised in .

Table 4: Roles and Responsibilities

Role	Responsibility
Construction Manager	• Ensure works proceed with all necessary environmental approvals, permits in place and in compliance with all applicable legal requirements. • Ensure all project personnel receive environmental inductions and training. • Ensure that all site personnel and contractors are aware of their responsibilities. • Ensure personnel assigned to perform tasks that may impact the environment are competent to do so or are under the direct control of a competent person.
Supervisor / Package Engineer	• Ensure that any changes to the schedule of works or work methodology, in particular changes under an approved GDP, are communicated to the Environmental Advisor in a timely manner. • Report all environmental events to the Environmental Advisor or Project Manager. • Lead and actively manage environmental incidents and non-compliances. • Action an appropriate response in accordance with environmental procedures in the event of an environmental incident. • Assist the Environmental Advisor in promoting environmental awareness.
Environmental Advisor	• Assist in determining CEMP implementation and compliance with Licence to Operate conditions. • Ensure the Contractor requirements to the environmental management of works under contract is understood. • Confirm that all necessary environmental controls are implemented and maintained for the duration of the project. • Provide regular environmental progress reports to the Project Manager or delegated other. • On a periodic basis, monitor environmental compliance and supervise high-risk environmental activities when appropriate. • Can be contacted when required or if unavailable has delegated authority. • Participate in project meetings if requested. • Provide environmental training, awareness and guidance for all personnel onsite. • Complete and maintain all necessary environmental documentation for the Project, if appropriate. • Support the package engineers with Environmental Incidents and non-compliances.

Role	Responsibility
	• Report all environmental incidents in a timely manner and assist in investigations as required. Facilitate corrective action as appropriate. Ensure complaints and near misses are documented and managed appropriately. • Ensure any outstanding environmental issues are resolved prior to project completion.
Manager Environmental Approvals and Compliance	• Ensure implementation and governance of the CEMP. • Responsible for all reporting to statutory bodies around environmental incidents and compliance. • Review audit reports and monitor completion of required corrective actions. • Ensure all environmental obligations are kept current.
Health and Safety Manager and Advisors	• Provide assistance and/or advice regarding implementation of the CEMP and any other environmental management concern. • Liaise with government agencies regarding health and safety issues. • Assess health and safety incidents to determine regulatory reporting requirements.
Contractors Employees and Subcontractors	• Adhere to the directives of this CEMP and the BCI's Management System and approved Project EMPs and procedures. • Act in an environmentally responsible manner. • Report incidents to their supervisors as soon as practicable. • Satisfactorily perform all environmental works as specified by contractual arrangement or recognised authority. • Participate in subsequent investigations and implementation of preventive and corrective action(s) as required. • Attend all required environmental awareness, induction and training sessions. • Recognise the authority of the on-site environmental representative, particularly in the event of an actual or perceived environmental non-conformance, or when remedial action is indicated.

4. REPORTING

As described within the *DCCEEW Environmental management plan guidelines (2024)*[1], an EMP will usually require reporting arrangements for two purposes:

- assist with effective implementation; and
- assist with external reporting.

External reports may include reports on environmental incidences to the regulator, reports to stakeholders, reports to inform reviews of the plan and reports to meet the reporting requirements of the conditions of approval. The description of reporting requirements should include:

- a list of required reports including where appropriate monitoring, environmental incidents, non-compliance, corrective action and auditing;
- a description of the standard report content;
- the schedule or triggers for preparing a report;
- who the report is provided to; and
- document control procedures.

Reporting against State and Commonwealth approval conditions are discussed in the sections below. Incident reporting is detailed in Section Error! Reference source not found.. Reporting requirements for monitoring, corrective action, auditing, and non-compliance is discussed in Section 11.

4.1 *Environmental Protection Act 1986* (WA)

As required under Condition D2-1 of MS1211:

> *The proponent must provide an annual Compliance Assessment Report to the CEO for the purpose of determining whether the implementation conditions are being complied with.*

Additionally, as per Condition D1-1 of MS1211:

> *If the proponent becomes aware of a potential non-compliance, the proponent must:*
>
> *(1) report this to the CEO within seven (7) days;*
>
> *(2) implement contingency measures;*
>
> *(3) investigate the cause;*
>
> *(4) investigate environmental impacts;*
>
> *(5) advise rectification measures to be implemented;*
>
> *(6) advise any other measures to be implemented to ensure no further impact; and*
>
> *(7) provide a report to the CEO within twenty-one (21) days of being aware of the potential non-compliance, detailing the measures required in conditions D1-1(1) to D1-1(6) above.*

[1] Department of Climate Change, Energy, the Environment and Water (2024). *Environmental management plan guidelines*. Version 1.2. Commonwealth of Australia.

4.2 *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

BCI will conduct reporting and submit reporting to DCCEEW in accordance with the conditions in EPBC 2018/8236 and EPBC 2022/9169 and EPBC 2024/___ (referral to be assessed). Reporting requirements conditioned within the EPBC 2018/8236 and EPBC 2022/9169 approvals that are relevant to this CEMP (i.e., those that apply during construction and construction maintenance) are summarised below, noting that condition numbers are mirrored between the two approvals. One difference in reporting requirements between the EPBC 2018/8236 and EPBC 2022/9169 approvals has been noted (Condition 97):

- Details of reporting requirements in the event that any changes to individuals and populations of *M. tridens* are detected. This must be submitted to DCCEEEW within ten (10) business days of submitting any reporting documents to DWER under Condition C3-3 of MS1211 (Condition 9).
- Report of baseline number of cats, foxes, rabbits, pigs and cane toads within the development envelope, to be provided to DCCEEW prior to 1 March 2025 (Condition 14).
- Conduct monitoring surveys once per calendar year (on similar date/s) to determine the number of cats, foxes, rabbits, pigs and cane toads within the development envelope. Prepare a report detailing the outcomes of these monitoring surveys to DCCEEW once a year, within two (2) months of undertaking the surveys (Condition 16).
- Report if monitoring required in Condition 32(d) detects that the Intertidal Flow Objective is not being achieved during construction, within two (2) business days of the monitoring event (Condition 32(e)).
- Report if monitoring required in Condition 33 detects that the Surface Water Objective has not being achieved during construction, within two (2) business days of the monitoring event (Condition 34).
- Report if monitoring required in Condition 43 detects any seepage and/or brine spill at the evaporation pond walls to DCCEEW within two (2) business days of the event in accordance with Condition 113, and report on the investigation of the seepage and/or brine spill and extent of any harm to protected matters to DCCEEW within 15 business days of detection (Condition 44).
- Provide DCCEEW with a report of the research outcomes of research project(s) required under Condition 83, within six (6) months of the finalisation of research outcomes (Condition 83(d)).
- Notify DCCEEW electronically of the date of commencement of the Action, within five (5) business days following commencement of the Action in the OMP, and within ten (10) business days following commencement of the Action in the DFS (Condition 97)
- Notify DCCEEW electronically of the date all clearing and construction associated with the Action is complete within five (5) business days following all clearing and construction associated with the Action being completed. Once the notification is submitted to DCCEEW, BCI must not undertake any clearing nor construction (Condition 100)
- Provide DCCEEW with compliance records in accordance with conditions (Conditions 101, 102, 103, 104 and 105).

- Prepare a compliance report for each Annual Compliance Report (ACR) Period (each subsequent 12-month period following the date of the EPBC2022/9169 approval decision until the expiry of this approval, unless otherwise specified in writing by the Australian Government Minister administering the EPBC Act). The compliance report must be prepared in accordance with Conditions 107 and 108. BCI must publish each compliance report and relevant shapefiles on the BCI website within 20 business days of the end of each ACR period in accordance with Conditions 109, 110 and 112. BCI must notify DCCEEW electronically within five (5) business days of each date of publication of the compliance report on the website in accordance with Condition 111 (Conditions 106, 107, 108, 109, 110, 111, and 112).
- Notify DCCEEW within two (2) business days of becoming aware of any incident, potential non-compliance or actual non-compliance in accordance with Condition 113. Within 12 business days of becoming aware of the incident, potential non-compliance or actual non-compliance, BCI is to provide a report to DCCEEW outlining the information in Condition 114 (Conditions 113 and 114).
- Report any thresholds specified in this CEMP (or any other EMP) within five (5) business days of identification to DCCEEW. Within 15 business days of the exceedance being identified, submit a report to DCCEEW outlining an investigation into the exceedance, prepared in accordance with Condition 115(b) (Condition 115).
- Submit details of the proposed independent auditor and qualification to DCCEEW within ten (10) business days following the end of each audit period (to be conducted for every audit period as per Conditions 116 and 117). The audit and audit report must be prepared in accordance with Conditions 119 and 121. BCI are to submit an audit report to DCCEEW for written agreement from DCCEEW within three (3) months following the end of each audit period, or as otherwise directed by the Australian Government Minister in writing. BCI must publish the audit report on the BCI website within ten (10) business days of the date of approval of the audit report from DCCEEW, and must notify DCCEEW within five (5) business days of the audit report being available on the BCI website. The audit report must be published on the BCI website in accordance with Condition 124 (Conditions 116, 117, 118, 119, 120, 121, 122, 123 and 124).

4.3 Incident reporting and Investigation

An incident is any unplanned event, that causes (or has the potential to cause) damage to the natural environment, cultural and heritage areas. An incident can be a 'near miss' event.

All property damage, environmental harm and significant near misses will be verbally reported immediately to BCI as soon as practicable after the incident and in any case in writing within 24 hours of the incident occurring.

Incidents will be reported, investigated and managed as per the BCI Incident Reporting and Management Procedure (BCI-WHS-PR-009), and learnings/outcomes communicated as part of continuous improvement of environmental management.

4.3.1 Notifiable Incidents

BCI shall ensure timely notification to the appropriate regulatory and statutory regulator in accordance with legislation. If a Notifiable Incident occurs in relation to the Work, the Contractor will complete the following:

- Immediately notify the Senior Site Executive (SSE) of the Notifiable Incident;
- Investigate the Notifiable Incident;
- Where site preservation is required by the Environmental requirement, ensure, so far as is reasonably practicable, that the part of the Site where the Notifiable Incident occurred is not disturbed until further direction is given to the Contractor by BCI; and
- As soon as is practicable, provide BCI with evidence that the hazards or risks giving rise to the Notifiable Incident have been eliminated or reduced, so far as reasonably practicable, including (if required and subject to legal professional privilege) a copy of its incident investigation report.

4.3.2 Incident Investigation

The Contractor, in consultation with BCI, will determine the level of incident investigation and assign the incident investigation to the appropriate person for action.

At a minimum a 5 Whys Analysis (5 Whys) process should be used to determine the root cause(s) of incidents. 5 Whys will be utilised for Non Serious level incident investigations, incident causes analysis method (ICAM) will be used for Serious Outcome level investigations as per the BCI Incident Reporting and Management Procedure (BCI-WHS-PR-009).

The incident investigation team will comprise members of the Contractor's Management Team and the process may involve taking witness statements, photographs and data collection although this list is not exhaustive as per Table 5.

Table 5: Incident Investigation Team

Classification	Lead Investigator	Investigation Team Members	Other Members	Investigation Type
Significant Outcome Events	ICAM trained Lead Investigator	Immediate Line Supervisor of person involved in incident Site Environmental Personnel & Reps	BCI Environmental personnel Legal representative Technical Specialists	ICAM
Non-Significant	Supervisor Lead	Personnel involved in incident		'5 Whys' Analysis

The incident investigation shall include the following basic elements:

- identify the cause of the incident;
- identify the necessary corrective and preventative action(s);
- identify personnel responsible for carrying out corrective and preventative action(s);
- implement or modifying controls necessary to avoid repetition;
- record any changes in written procedures required; and
- notify BCI of all site environmental issues.

4.3.3 Lessons Learnt

Information gathered from incident investigations will be analysed to identify lessons and monitor trends. The Contractor is responsible for this analysis and reporting of significant lessons or trends to the Project Team for the purpose of improving environmental systems or practices.

BCI will share the lessons or trends findings across the Project Team, with project stakeholders and others if required.

5. TRAINING AND COMPETENCY

To ensure the project team understand their responsibilities and expectations in relation to environmental management, training and awareness will occur continuously throughout the course of the Project (as indicated in

Table 6: Environmental Training Matrix Category	Recipients	Frequency	Items

)Error! Reference source not found.. The training and awareness requirements for this CEMP have been broken down into the following categories:

- induction training;
- task specific training with competency assessment; and
- awareness training.

Table 6: Environmental Training Matrix Category	Recipients	Frequency	Items
Induction training	All people on the site	Start of work, return from extended leave, or site access	Site specific induction
Task-specific training with competency assessment	Project personnel / Contractors, as required	As required for activity with potential environmental risks or as a result of high risk task, specific incidents(s) trends.	Selected modules
Awareness	Project personnel / Contractors, as required	Periodic	Toolbox meetings / posters / memos

5.1 Induction Training

All project personnel and visitors seeking to attend site will be subject to a BCI, Project and Contractors own Site Induction and induction assessment, in accordance with the Site Induction. This induction will include relevant environmental information.

The BCI induction will include the following in relation to environmental awareness:

- Overview of the Environment and Social Management System (ESMS);
- BCI legal and other obligations;
- Project specific potential environmental impacts and controls including:
    - weed controls and wash down procedures;
    - ground disturbance and topsoil management;
    - fauna management * (both native and pest species);
    - incident notification and procedures;
    - speed limits and hazards of dawn/dusk driving;
    - waste management, including litter control and recycling;
    - spill response procedures;
    - Aboriginal cultural heritage awareness; and
- Fauna and flora training in the inductions will address the requirements of the Fauna Management Procedure, including how to identify conservation significant species in the field and the prohibition on feeding/distributing/taking such species.

An induction and training register will be used to record and monitor induction attendance by all personnel.

5.2 Task specific Environmental Training with Competency Assessment

Task specific environmental training (e.g. spill response training, fauna handling training, fauna spotter training, GDP training and site clearing permit/procedure training) for some group or individual project personnel will be conducted. Training to be undertaken may be in response to an environmental

occurrence or incident(s) or as determined by project leadership. All such training will be documented, and participants may be assessed in relation to their competency, if applicable.

5.3 Environmental Awareness Training

An environmental awareness program will be implemented during the Project to assist in maintaining effective environmental management. Awareness training may consist of regular toolbox meetings, posters and memos/alerts. This program will be designed to periodically reiterate the environmental objectives and specific environmental controls for the Project. Topics may include:

- new controls or work instructions;
- reinforcement of induction content;
- results of inspections and audits; and
- awareness of environmental events or incidents.

5.4 Environmental Qualifications

All personnel directly involved in environmental management shall be appropriately qualified to undertake the tasks of the position to which they are appointed.

5.5 Communication

Achieving effective communication between all parties is critical to ensure that the requirements of this CEMP are met. Typical methods of communication on site:

- Pre-start meetings;
- Toolbox talks;
- Project inductions;
- Site notices;Environment alerts;
- Environmental Weekly and Monthly reports to management;
- Scheduled Audits; and
- Environmental Incident reports and banners.

Pre-start and toolbox meetings include delivering key environmental messages and audit and inspection results and communicating environmental risks for the scheduled activities. Pre-start meetings are minuted and available for workers/visitors if required.

The Health and Safety and Environment Advisors ensure that relevant documentation is filed electronically, and hard copies made available to personnel. Hard copy documentation made available to personnel typically includes:

- Emergency Response Manual;
- CEMP (this Plan);
- BCI Company Policies;
- Safe Work Instructions;
- EMPs and Procedures;

- Job Hazard Analysis (JHA);
- Communication Meeting minutes; and
- Copies of relevant legislation and codes of practice where required.

5.5.1 External Communication

Direct communication with the media and general public is not permitted.

All communications to external parties shall be directed through BCI in accordance with the Project communications requirements.

Any requests from the media or general public are referred to BCI who takes action in accordance with the project's Stakeholder and Communication Management Plan.

All direct communication with statutory authorities is approved by BCI.

6. EMERGENCY MANAGEMENT

The site-specific Emergency Response Manual has been developed and the BCI Incident Reporting and Management Procedure will be followed in the case of an environmental emergency. The Emergency Response Manual and Incident and Reporting Management Procedure outlines emergency contacts responsible for managing environmental emergencies, and procedures for managing environmental emergencies.

Where significant environmental harm has occurred, or is pending, due consideration must be given to the utilisation of professional emergency response management services.

7. ENVIRONMENTAL POLICY

BCI's Environment and Community policy demonstrates commitment by leadership to the management and continuous improvement of environmental management including complying with applicable laws. This Environment and Community Policy (BCI-ENV-POL-001) shall be displayed on health, safety, environment noticeboards.

8. RISK MANAGEMENT

Throughout the Project, risks have and will continue to be identified, assessed, and controlled using a number of different tools. The identification of environmental activities and the respective potential impact to the environment is determined following a review of the:

- contract and its associated environmental conditions;
- actual scope of work and consideration of all applicable legislation, standards, and other conditions; and
- Geographical Information System (GIS) which maps and tracks disturbance limits and constraints.

The Project Risk Register details the relevant environmental aspects, their associated impacts, the mitigation control, and a rating of their significance. Refer to the BCI Risk Management Procedure (BCI-RMG-PRO-001).

The risk assessment provided in Table 9 is a subset of the Project Environmental Risk Register which is maintained and regularly updated as part of the BCI ESMS. The scope of the risk assessment is for all construction related activities defined in Table 1, and includes construction maintenance activities.

8.1 Risk assessment criteria

To ensure that the assessment of likelihood and consequence levels across the identified risks was consistent, semi-quantitative matrices were developed for the Project, based on industry examples.

Table 7 provides a description for the likelihood of an impact occurring and the potential consequence that could arise as a result. A risk matrix indicating the different risk levels is provided in Table 8.

Table 7: Risk criteria matrix: Consequence of impact occurring

Factor	Consequence of Risk Outcome				
	1. Insignificant	2. Minor	3. Moderate	4. Major	5. Severe
Biodiversity/ Flora/Fauna/ Ecosystem	None or insignificant impact to ecosystem component (physical, chemical or biological) expected with no effect on ecosystem function.	Moderate to minor impact to ecosystem component (physical, chemical or biological). Minor off-site impacts at a local scale.	Minor and short-term impact to high value or sensitive ecosystem expected Off-site impacts at a local scale.	Long-term impact to significant high value or sensitive ecosystem expected Long-term impact on a wide scale Adverse impact to a listed species expected.	Irreversible impact to significant high value or sensitive ecosystem expected Irreversible and significant impact on a wide scale Total loss of a threatened species expected
Water Resources	Low impact to isolated area without affecting any use of the water.	Contained low impact with negligible effect on the use of the water.	Uncontained impact that will materially affect the use of the water, but able to be rectified in short-term.	Extensive hazardous impact requiring long-term rectification.	Extensive hazardous impact requiring long-term rectification.
Land Degradation	Negligible impact to isolated area.	Contained low impact, not impacting on any environmental value	Uncontained impact, able to be rectified in short-term without causing pollution or contamination.	Extensive hazardous impact requiring long-term rectification.	Uncontained hazardous impact with residual effect.
Air Quality	No detectable impact.	Contained low impact not impacting on any environmental value.	Uncontained impact that will materially affect an environmental value, but able to be rectified in short-term	Extensive hazardous impact on an environmental value requiring long-term rectification.	Uncontained hazardous impact with residual effect.

Table 8: Risk criteria matrix: Risk levels

		Consequences				
		1. Insignificant	2. Minor	3. Moderate	4. Major	5. Severe
Likelihood	E. Rare	25 (Low)	23 (Low)	20 (Low)	16 (Moderate)	11 (Moderate)
	D. Unlikely	24 (Low)	21 (Low)	17 (Moderate)	12 (Moderate)	7 (High)
	C. Possible	22 (Low)	18 (Moderate)	13 (Moderate)	8 (High)	4 (High)
	B. Likely	19 (Low)	14 (Moderate)	9 (High)	5 (Extreme)	2 (Extreme)
	A. Almost Certain	15 (Low)	10 (High)	6 (High)	3 (Extreme)	1 (Extreme)

8.2 Risk Assessment

The risk assessment relies on the comprehensive description of project activities so that the associated risks and potential impacts can be identified.

Without exception, all the hazards identified within Table 9 are common across the mining and civil industries, and established risk treatment are widely available.

A risk score is assigned to inherent and treated risk pathways identified for Project activities. In general, risk scores can be reduced by implementing a treatment that will reduce the likelihood of the impact from occurring. If a risk is eliminated or substituted, then the consequence can be reduced, which reduces the risk score.

Table 7 and Table 8 were used to assess impacts and assign a risk score to the key risks identified within the Project Risk Assessment (Table 9). Table 9 includes all identified risks that are considered applicable to this CEMP.

Table 9: Project CEMP Risk Assessment

Factor	Project Phase	Environmental Risk Pathway	Impact	Likelihood	Consequence	Raw Score	Treatment/Schedule of Works	Likelihood	Consequence	Treated Score	Outcome*
1.0 Biodiversity											
1.1	Construction/Operation	Project operations (noise, light, vibration) indirectly alter migratory bird behaviours.	Reduction in utilisation of adjacent habitats by migratory birds.	C	4	H	Implement the Migratory Shorebird Monitoring and Management Program and report on performance annually, as regulated within MS 1121, EPBC 2018/8236 and EPBC 2022/9169.	D	4	M	NR
1.2	Construction/Operation	Clearing activities directly or indirectly alter SRE populations.	Reduction in species richness, density, and population size of SRE.	C	4	H	Conduct pre-clearance SRE surveys and ensure minimum 50% retention of SRE habitat as regulated within MS 1121, EPBC 2018/8236 and EPBC 2022/9169.	D	4	M	NR
1.3	Construction/Operation	Direct or indirect impacts to BCH (including algal mats/samphire) results from the Project operations.	Loss or decline in BCH habitat.	C	4	H	Implement the BCHMMP and report on performance annually, as regulated within MS 1121, EPBC 2018/8236 and EPBC 2022/9169.	D	4	M	NR
1.4	Construction/Operation	Direct or indirect impacts to significant flora (*Minuria tridens* or *Tecticornia* taxa) results from the Project operations.	Loss or decline in PEC or significant flora species.	C	4	H	Protection of significant flora regulated within MS 1121, EPBC 2018/8236 and EPBC 2022/9169.	D	4	M	NR
1.5	Construction/Operation	Introduction or spread of invasive weed species.	Loss or decline in habitat Reduction in biological diversity Delayed rehabilitation success Loss or decline in pastoral productivity.	C	2	M	Activities to be conducted in accordance with the Mardie Weed Management Plan which include: • Weed mapping • Vehicle weed hygiene procedure and checklist for cleaning vehicles • Washdown Bay at the entrance to the project area • Defined operational boundaries • Ground disturbance procedures • Training for those operating earth moving equipment	D	2	L	Y
1.6	Construction/Operation	Dust generation from earthmoving and haulage equipment causes dust deposition on vegetation.	Decline in vegetation condition along haulage roads.	D	2	L	• Dust suppression to be incorporated into construction, mining, and haulage programs. • Minimise disturbance area.	E	2	L	NR
1.7	Construction/Operation	Erosion from embankments enters the environment	Loss or decline in BCH	C	4	H	• Erosion control measures to be incorporated in embankment design in accordance with engineering design and ANCOLD Guidelines. For example, use of geofabric and rock armouring. • Implement the BCHMMP and report on performance annually, as regulated within MS 1121, EPBC 2018/8236 and EPBC 2022/9169. .	D	4	M	Y

Factor	Project Phase	Environmental Risk Pathway	Impact	Likelihood	Consequence	Raw Score	Treatment/Schedule of Works	Likelihood	Consequence	Treated Score	Outcome*
1.8	Construction/Operation	Illumination and light spill emissions influence (nesting and mis-orientation or disorientation) marine turtles.	Decline in marine turtle population.	C	4	H	Implement the Illumination Management Plan as regulated within MS1121, EPBC 2018/8236 and EPBC 2022/9169. .	D	4	M	NR
1.9	Construction/ Operation	Introduction/ spread of feral animal species	Increase in occurrence of feral animal species which can compromise rehabilitation efforts through grazing or threaten native fauna in the area through predation and competition.	C	2	M	• Cattle are present within the Project area as Mardie Station run stocking operations on the pastoral lease. This can impact on rehabilitation efforts. A stock fence is to be erected to exclude cattle from the Project, if significant impacts to rehabilitation are noted, access to the mine site by cattle will need to be reviewed. Cattle movements are currently managed through water source management. • Within the pastoral station, trapping and baiting feral species is the responsibility of Mardie Station under *Biosecurity and Agriculture Management Act 2007* (WA). In addition, EPBC 2018/8236 and EPBC 2022/9169 conditions of approval require the Project to manage introduced fauna.	D	2	L	Y
2.0 Land and Soil											
2.1	Construction/Operation	Excavation greater than 1m depth exposes ASS.	Groundwater/surface water contamination. Loss or decline in vegetation or habitat value.	D	3	M	• Potentially Acid Forming (PAF) investigation found low to negligible risk of ASS occurring (SWG, 2019)[2] • Any PAF material encountered will be immediately buried below the water table.	E	3	L	Y
2.2	Construction/Operation	Hydrocarbon storage system or equipment failure causing hydrocarbon spills to ground.	Contamination of land and soils.	C	3	M	• Store all liquid chemicals in accordance with AS1940:2017. • Maintain design capacity of hydrocarbon and liquid chemical bunding. • Incorporate temporary bunding into field servicing. • All spills to ground are remediated. • Training and awareness	E	3	L	Y
2.3	Construction	Unapproved/excessive land disturbance.	Loss or destruction of environmental value beyond the approved footprint.	B	3	H	• All clearing activities to adherence to the Site Clearing Procedure and GDP system. • Compliance with MS1211.	D	3	M	Y
3.0 Water Resources											
3.1	Construction/Operation	Seepage from concentrator or crystalliser ponds causes, decline groundwater quality	Loss or reduction in mangrove communities or	C	4	H	Implement the GMMP as regulated within MS1121, EPBC 2018/8236 and EPBC 2022/9169.	D	4	M	NR

[2] Soilwater Group (2019). *Mardie Project Soil and ASS assessment*. Unpublished report prepared for Mardie Minerals, July 2019.

Factor	Project Phase	Environmental Risk Pathway	Impact	Likelihood	Consequence	Raw Score	Treatment/Schedule of Works	Likelihood	Consequence	Treated Score	Outcome*
		threatening the environmental and heritage value of Mardie Pool adjacent to the crystallisers or the Mangroves west of the concentrator ponds.	water quality in Mardie Pool.								
3.2	Construction/Operation	Fuel storage system or equipment failure causing hydrocarbon spills to intertidal environment.	Hydrocarbon contamination of marine waters.	C	2	M	• Store all liquid chemicals in accordance with AS1940:2017. • Maintain design capacity hydrocarbon and liquid chemical bunding. • Incorporate temporary bunding into field servicing. • All spills to ground remediated. • All spills to the marine environment are responded to in accordance with the Department of Transport WA Marine Environmental Emergency Response (MEER). • Marine spill kit available at fuel storage locations and on fuel delivery vehicles.	D	2	L	Y
3.3	Operational	Inefficiency of oil water separators leads to discharge of hydrocarbon contaminated water.	Decline in soil or groundwater quality leads to contaminated site.	C	2	M	• Discharge of wash water to be regulated under Part V of the *Environmental Protection Act 1986* (EP Act). • Contamination regulated under Part V of the EP Act and the *Contaminated Sites Act 2003* (WA; CS Act) if not remediated	D	2	L	NR
3.4	Operations	Loss of chemical from SOP bulk storage and process tanks.	Decline in groundwater quality leads to contaminated site.	C	3	M	Construction and operation of the SOP plant, including bulk chemical storage managed under Part V of the EP Act.	D	3	M	NR
4.0 Heritage											
4.1	Construction/ Operation/ Closure	Direct or indirect loss of heritage value resulting from the Project.	Social, cultural, heritage and archaeological values are compromised. Loss of visual amenity impacting cultural places and activities. Restricted access to traditional lands.	C	4	H	• Whole site has been Surveyed for heritage sites • Site have been avoided where possible • Salvage and Section 18 Approval sought were not possible • Activities to be conducted in accordance with the Aboriginal Cultural Heritage Management Plan as regulated within MS 1121.	D	4	M	NR
5.0 Mine Closure											
5.1	Construction/Operational/ Closure	Insufficient suitable topsoil available for progressive rehabilitation activities such as construction laydown areas.	Unable to meet completion criteria as outlined within the Mine Closure Plan (MCP).	C	3	M	• Land clearing and disturbance procedures will include: o Recovery of 200mm topsoil.	D	3	M	Y

Factor	Project Phase	Environmental Risk Pathway	Impact	Likelihood	Consequence	Raw Score	Treatment/Schedule of Works	Likelihood	Consequence	Treated Score	Outcome*
							o Topsoil to be stored in stockpiles no higher than 2m and kept free of invasive weeds such as mesquite.				
5.2	Construction/Operational	Failure to conduct progressive rehabilitation activities when resources are available (topsoil, machinery, employees)	Lost rehabilitation opportunity. Unable to record long term data used for final closure.	B	3	H	• Rehabilitate redundant areas within 12 months of becoming inactive. • Follow progressive rehabilitation requirements as prescribed in the MCP.	D	3	M	Y

9. CONSTRUCTION ENVIRONMENTAL MANAGEMENT MEASURES

Environmental management measures relevant to this CEMP have been developed for environmental factors that have common linkages between the Project construction and construction maintenance activities and potential environmental impacts. For each measure, objectives have been developed to define the desired state of the environmental factor to be achieved. To achieve the CEMP objectives, the assigned management actions must be implemented throughout the Project construction and construction maintenance phase and evaluated for effectiveness on a periodic basis. Each management action includes auditable timelines, clear identification of record keeping and assigns responsibility. The identified environmental factors include:

- Ground Disturbance;
- Fauna Management;
- Erosion and Sediment Control;
- ASS;
- Waste;
- Hydrocarbons and Chemicals;
- Weeds;
- Heritage;
- Marine environmental quality;
- Greenhouse Gas Emissions; and
- Water management (surface water and groundwater).

9.1 Ground Disturbance

Land clearing and topsoil disturbance activities associated with the construction of the Project will be managed through an internal GDP. The GDP allows for the assessment of the disturbance areas to ensure that all environmental approval and heritage obligations are complied with. In addition, the GDP enables the collection of data used for corporate reporting, statutory reporting such as annual environmental reporting and closure liability estimates.

A *Minuria tridens* research strategy has been approved by the EPA in accordance with MS1121 condition B7-2. In addition, targeted regional surveys are being commissioned by BCI to try to find additional populations outside the Project development envelope.

The *M. tridens* located within the development envelope the must be avoided and monitored annually for the life of the Project in accordance with Condition 10 of EPBC 2022/9169.

BCI will not undertake works that result in direct impacts on *M. tridens* within the development envelope, as per the requirements of EPBC 2018/8236 and EPBC 2022/9169.

Pre-clearance surveys completed by Phoenix Environmental Sciences (2021)[3] identified 30 plants in the proposed inundated footprint of Pond 1 (located in the southwestern portion of the Development Envelope). In December 2023, BCI constructed a coffer dam / bund within Pond 1 to protect the plants

[3] Phoenix Environmental Sciences (2021). *Memo Report of targeted searches at Mardie Salt Project for Minuria tridens.* Prepared for BCI Minerals Ltd. Available at: https://www.epa.wa.gov.au/proposals/optimised-mardie-project

identified from inundation. BCI will also look to fence off the *M. tridens* plants located at the causeway to ensure they are not disturbed.

BCI has revised the Project design to avoid direct impacts from to the Robe River Delta Mangrove Management Area (RRDMMA).

Table 10: Environmental Management Strategy for Vegetation Clearing

Ground Disturbance				
Objective	• Minimise ground disturbance to the extent possible. • Manage ground disturbance activities in compliance with all relevant legislative and legal obligations and to be within approved boundaries. • Identify all known cultural and environmentally sensitive areas to prevent unauthorised disturbance. • Identify all available topsoil for recovery and stockpiling for later use in rehabilitation works. • Ensure all completed ground disturbance is surveyed, recorded, and reported. • Ensure there is authorisation to build the proposed facilities on previously disturbed ground.			
Target	• No occurrence or unlawful clearing. • No disturbance outside of the scope of the approved project activities.			
Potential Impacts	• Unapproved removal of, or disturbance to, flora, vegetation, and fauna habitat. • Unintentional loss of heritage value. • Soil erosion and sediment loss. • Inadequate materials available for rehabilitation of disturbance areas. • Spread of weeds beyond the Project area and introduction of new weed species to the area.			
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Vegetation clearing conducted in accordance with an internal permit procedure to facilitate progressive development	GDPs	Prior to commencing each clearing package	BCI	GDPs Ground Disturbance Procedure
All vehicles and equipment movement will be restricted to existing tracks, roads and the area proposed for clearing.	Hard barriers Road Signage	Ongoing	All	Traffic Management Plans
BCI (including BCI's contractors) will not construct outside of the development envelope.	GDP	Ongoing	BCI	GDPs Ground Disturbance Register

Ground Disturbance				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
All areas proposed for clearing will be clearly delineated within an approved clearing area and undertaken according to relevant legislative and legal obligations	GDP	Prior to disturbance activities taking place.	All	GDPs Ground Disturbance and Topsoil Stockpiling Procedure Ground Disturbance Register
	Ground Disturbance Survey Data	Weekly during clearing activities Annual aerial image to reconcile disturbance area	BCI	GDPs Ground Disturbance and Topsoil Stockpiling Procedure Ground Disturbance Register
Spatial records of conservation-significant flora and fauna will be used to assess ground disturbance permit applications.	GIS GDP	Ongoing	BCI	GDPs
Minuria tridens exclusion areas will be shown on plans and clearly demarcated in the field.	GIS Field demarcation	Ongoing	BCI	Ground Disturbance Procedure. *M. tridens* Research Strategy Offset Strategies.
Annual monitoring of *M. tridens* within the Development Envelope to be conducted in accordance with Condition 11 of EPBC 2018/8236 and EPBC 2022/9169.	Annual monitoring data	Annually	BCI	Annual Monitoring Survey Report
BCI will not harm any *M. tridens* within the development envelope from 23 June 2023 until the completion of the action, as per Condition 10 of EPBC 2018/8236.	GDP	Ongoing	BCI	GDPs Ground Disturbance and Topsoil Stockpiling Procedure.

Ground Disturbance				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
BCI will not harm any *M. tridens* within the OMP development envelope from the date of approval of EPBC 2022/9169 and until the completion of the Action.	GDP	Ongoing	BCI	GDPs Ground Disturbance and Topsoil Stockpiling Procedure.
Vegetation and topsoil will be placed in stockpiles. Stockpiles will not impede drainage or present a fire hazard.	Topsoil stockpile inspections.	Weekly during clearing activities Annual aerial image to reconcile disturbance area Annual material balance reconciliation.	All	Ground Disturbance and Topsoil Stockpiling Procedure.
A minimum of 100mm of topsoil will be removed and stockpiled where available. Topsoil stockpiles will be no greater than 2m high.	Topsoil stockpile inspections.	Weekly during clearing activities Annual material balance reconciliation.	BCI	Ground Disturbance and Topsoil Stockpiling Procedure. Inspection Reports
Any deviation from approved clearing will be reported as an incident to the SSE	Incident Report	Immediately after an incident being reported.	All	Incident reporting and management procedure
Training to be provided to all inspectors and individuals who are to submit a Ground Disturbance Request Form.	Awareness/Training Register	Ongoing	BCI	"Awareness"/Training Materials

9.2 Fauna

The project site extends across a variety of fauna habitat including marine, tidal creeks, mudflat islands, spinifex grasslands and riparian creeks/pools. Construction activities can cause direct impacts (e.g. fauna strikes, entrapment in excavations) and indirect impacts from habitat destruction, poor waste management, increased feral fauna. Vehicle and heavy equipment movements associated with the construction will be managed to reduce the risk of injury or death to fauna. Marine vessels that will be used during construction are slow-moving construction vessels and therefore operate at speed below those likely to injure marine fauna.

Migratory shorebirds habitats of algal mat, samphire and mangroves are in the intertidal areas adjacent to the Project.

Vehicular traffic poses a risk of fauna strike particularly in key fauna habitats for Northern Quoll and Pilbara Leaf-nosed Bat. Traffic management controls are in place for Mardie Pool and the rocky outcrop near Mardie Road.

General Management strategies for fauna are outlined in Table 11. Refer also to the:

- Migratory Shorebirds Monitoring and Management Plan;
- Dredge Management Plan;
- Marine Turtle Monitoring Program; and
- Underwater Noise Management Procedure.

Table 11: Environmental Management Strategy for Fauna

Fauna				
Potential Impacts – Construction				
Objective	Minimisation of actual or potential impacts to conservation significant fauna resulting from work activities.			
Target	No impacts to native fauna from Project-related vehicle and equipment movements.			
Potential Impacts	• Vehicle/vessel strikes affect local populations of Pilbara Olive Python, Northern Quoll, Pilbara Leaf-nosed Bat, Northern Coastal Free-tailed Bat, and marine fauna. • Unapproved removal of, or disturbance to fauna habitat. • Unintentional impacts to fauna of conservation significance (e.g. Deliberate killing Pilbara Olive Python due to mistaken identity and increases to feral fauna). • Entrapment fatalities in excavations/trenches. • Impacts from waste materials.			
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Inductions will explain: • conservation significant species potentially in the Project area • that native fauna are protected and are not to be interfered with. • Elevated risks of fauna strike during dawn and dusk. • Ban on having pets/domesticated animals. • Ban on recreational fishing or access to fauna habitats beyond the approved disturbance footprint.	Inductions and training records	Daily	BCI	Training records. Fauna Management Procedure.

Fauna				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Disturbance of habitat for conservation listed species will be minimised	Internal GDP assessment to include check of key fauna habitats	During construction	BCI	Ground disturbance procedure GDPs GIS spatial data of cleared areas – key fauna habitats
Vehicle speed limited to 40 kmph near key fauna habitat areas (refer to Figure 3 at dusk and dawn, when the species are most likely to be active: • 5km radius of Northern Quoll habitat. • 2km radius of Mardie Pool.	Random speed observations.	During construction	BCI	Speed check records.
Excavations will be fitted with fauna egress and will be inspected for trapped fauna at the beginning of each shift	Daily pre-start inspection.	Daily within 2 hours of sunrise	Contractor	Daily inspection checklist
Pipeline trenches (e.g. fibre optic and natural gas) will be developed progressively.	Daily inspection	During construction	Contractor	Daily inspection checklist
Road and tracks to be signposted with speed limits and warnings of conservation significant fauna risks.	Signposts installed	Prior to clearing or construction	BCI	Fauna Management Procedure Traffic Management Plan
Exclusion zone around Mardie Pool minimises potential impacts to Pilbara Leaf-nosed Bat and Pilbara Olive Python from construction (and operations)	Field demarcation of exclusion zone. Designed footprint	Not applicable	BCI	Fauna Management Procedure

Fauna				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Schedule high-risk marine construction activities outside of known migration periods for conservation significant marine fauna	Schedule	During construction	BCI	Project Construction Schedule Marine Fauna baseline survey results (whales, Sawfish and turtles)
Construction vessels >20 m speed limited to 8 knots at all times. Smaller vessels will reduce speed to 8 knots if whales or turtles are sighted within 500 m.	Random speed checks	During construction	BCI	Dredge Management Plan
Annual feral fauna survey	Feral fauna survey records	Annual	BCI	Annual monitoring report
Fauna injury or fatalities will be reported as incidents	Incident management systems	As required	BCI	Refer to Section 12
On every day of the Action that clearing and construction activities are to be undertaken, that within two hours of sunrise and prior to the clearing or construction commencing, a fauna spotter catcher checks all open trenches to detect, safely remove and relocate any trapped terrestrial fauna to suitable habitat where clearing will not occur that day.	Inspection records	Every day prior to the commencement of clearing and/or construction within two hours of sunrise	BCI	Annual monitoring report
A fauna spotter catcher is present during all clearing and construction, and given authority to supervise, halt and order the manner in which any clearing and construction is undertaken within any low rocky hill habitat, grassland habitat, migratory shorebird habitat, coastal samphire habitat, and open riparian woodlands vegetation.	Inspection records	During clearing and construction	BCI	Annual monitoring report

Fauna				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
If any terrestrial fauna individual is detected as present within an area undergoing clearing or construction, the fauna spotter catcher immediately halts the clearing or construction until the fauna spotter catcher has confirmed the terrestrial fauna individual is no longer present within the area of clearing or construction.	Inspection records	During clearing and construction	BCI	Annual monitoring report
BCI will maintain and keep accurate records of all fauna sightings, and the management of fauna sightings during clearing and construction to demonstrate compliance with condition 5 of EPBC 2018/8236 and EPBC 2022/9169, and with conditions in EPBC 2024/___ (to be assessed).	Fauna sighting records.	Ongoing	BCI	Fauna sighting register
Commission research project(s) to inform the strategic protection, better management and long-term ecological functionality of migratory shorebirds habitat (prepared in accordance with Condition 83 of EPBC 2018/8236 and EPBC 2022/9169).	Detailed Research Project Proposal	Within 6 months of the commencement of construction (Refer to Section 4.2 Reporting).	BCI	Research program reporting.
Maintenance activities on marine structures will be restricted to be outside of the environmental blackout period as per Condition B5-8 of MS1211.	Inspection records Fauna sighting records.	During maintenance construction	BCI	Underwater Noise Management Procedure Fauna sighting register
Marine fauna observers will be in attendance and the approved Underwater Noise Management Procedure will be implemented during maintenance activities that need to be carried out from within the marine environment.	Fauna sighting records.	During maintenance construction	BCI	Underwater Noise Management Procedure Fauna sighting register

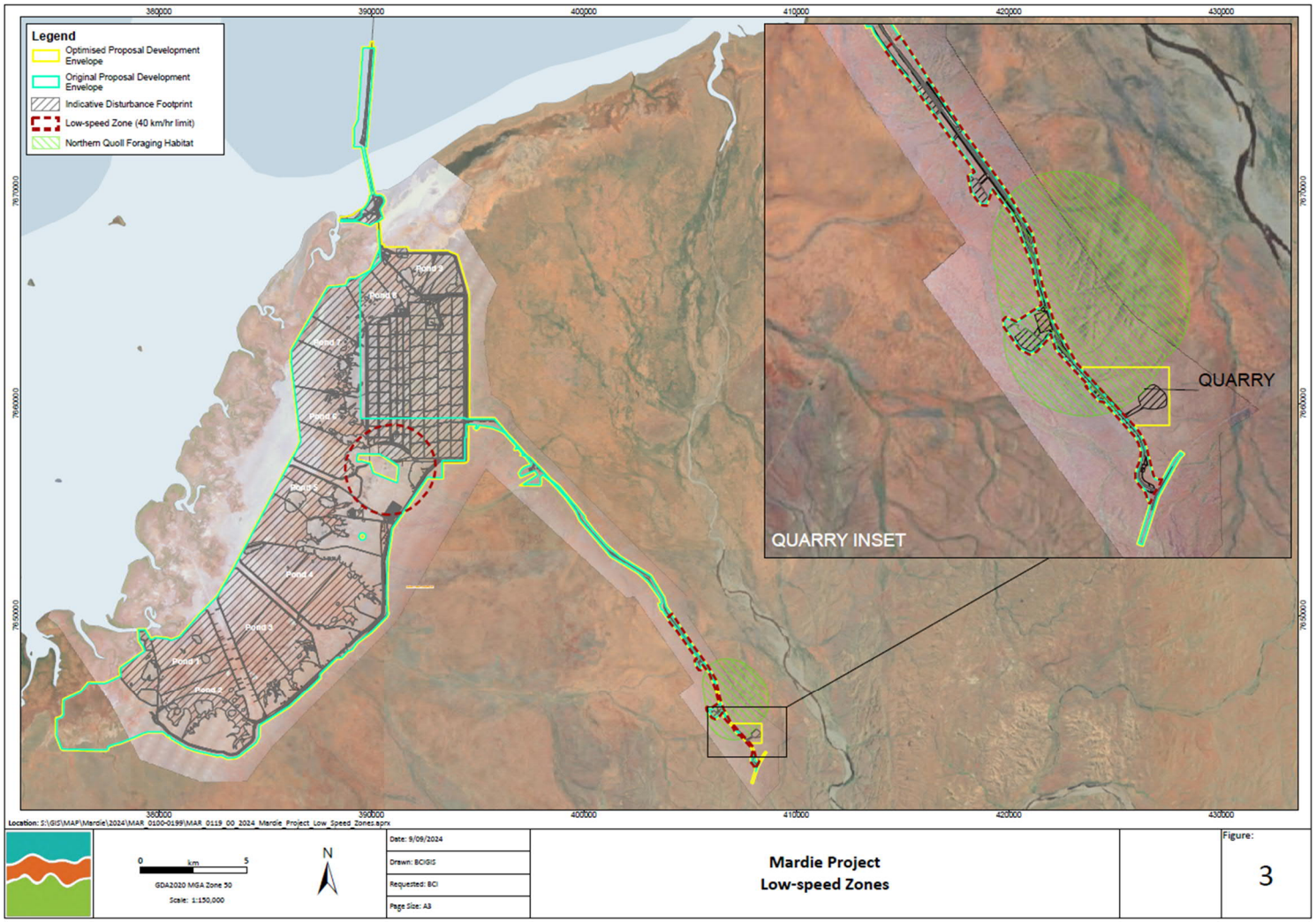

Figure 3: Low-speed Zones

9.3 Erosion and Sediment Control

Most of the site is located within the influence of high tides, with embankment construction methodology allowing free movement of tides up until closure of the pond perimeter. Project activities will be conducted in a way that will reduce the duration of soil exposure to erosive forces (wind and water), either by holding the soil in place or by protective covers. Table 11 provides the environmental management strategies for erosion and sediment control.

Table 12: Environmental Management Strategy for Erosion and Sediment Control

Erosion and Sediment Control				
Potential Impacts – Construction				
Objective	Minimisation of actual or potential environmental harm to receiving environments associated with soil loss and disturbance resulting from work activities. Protect Benthic Community and Marine Habitats beyond the Project development envelope			
Target	No measure of sediment loss beyond the project footprint.			
Potential Impacts	• Increased sediment load from roads, causeways, and embankments. • Loss of BCH, Mangrove or Marine ecosystem function due to loss of light or smothering.			
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Roads, causeways, and embankments (>2.45 mAHD) will be constructed in accordance with the Embankment Construction Methodology which include provisions to: • Apply dust suppression by wetting of exposed surfaces (e.g. water truck); • Protect the soil surface by placement of non-erosive material, protection with geotextile and/or use of soil binder; • Promptly stabilise exposed areas as soon as practicable; • Minimise disturbance to existing vegetation; • Undertake initial civil works in the drier season months (Jul – Dec), as far as schedule allows; and • Construct site access roads to include crossfall drainage and erosion resistant surface.	Visual embankment inspections including photographic evidence during constructions.	Daily	BCI	Daily construction report
	Water quality monitoring as per the Marine Environmental Quality Monitoring and Management Plan (MEQMMP). Visual dust monitoring	As per the designated monitoring schedule within the MEQMMP. Continuous during construction	BCI BCI	MEQMMP (MAR-0000-EV-PLN-BCI-000-0008) HSEC area inspection Forms

Erosion and Sediment Control				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Roads, causeways, and embankments (<2.45 mAHD) will be constructed in accordance with Embankment Construction Methodology which include provisions to: • Stage works to suit favourable tidal periods (i.e. when site is not inundated), as far as practical; and • Schedule works so that activities impacted by tides are completed in the early stages of construction. Remove unsuitable material to outside of the area of tidal influence (e.g. designated protected stockpile area).	Water quality monitoring.	As per the designated monitoring schedule within the MEQMMP.	BCI	MEQMMP (MAR-0000-EV-PLN-BCI-000-0008)
Prepare and implement a Flood Management Plan to reduce indirect impacts due to flood risks (e.g., erosion, evaporative pond wall breakages) to sensitive environmental factors, including but not limited to Mardie Pool and Mt Salt Mound Spring.	Visual inspections including photographs of flooding or erosion	Plan to be prepared at completion of detailed design. Plan to be implemented continuously during operations	BCI	GMMP (000-EV-PLN-0005)

Erosion and Sediment Control				
The windrows along the trafficable areas of the pond walls will be inspected twice yearly – before and after cyclone season, and maintenance repairs initiated as part of a regular road repair program. • Waste gypsum from the salt wash plant settling ponds can be used for windrow repair. • Inspections for scours will be conducted prior to cyclone season and any maintenance repairs completed. • After cyclones, road surfaces will be inspected for scours or breaches and repairs effected at the earliest opportunity before another cyclone event. Stockpiles of road gravel will be kept at strategic locations because cyclonic rain will collect in borrow pits making them unusable, and in some low-lying areas access roads may be cut off making access for loaded gravel trucks challenging. • Cyclonic wind and storm surge on evaporation pond sea walls can loosen rock armour. Armour will be inspected after cyclone events and repairs initiated in areas that have been disturbed to ensure they do not become a weak spot in subsequent events.	Visual inspections including photographs of flooding or erosion Road repair program records	Twice per year (before and after cyclone season)	BCI	Inspection records.
All maintenance construction will be carried out in accordance with the Environmental Protection Noise Regulations 1997 (WA) and AS 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites.	Complaints register	During maintenance construction	BCI	Environmental Protection Noise Regulations 1997 (WA) AS 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites

9.4 Acid Sulphate Soils

The management strategies within Table 13 will ensure that the risk of ASS is understood and managed.

Table 13: Environmental Management Strategy for Acid Sulphate Soils

Soils				
Potential Impacts – Construction				
Objective	1. Minimisation of actual or potential environmental harm to receiving environments associated with ASS 2. Protect Benthic Community and Marine Habitats beyond the Project development envelope.			
Target	No impacts to the environment or geotechnical integrity of infrastructure caused by ASS or PAF material.			
Potential Impacts	• Contamination of soils, surface waters and marine environment. • Degradation or corrosion of engineered structures.			
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Conduct geotechnical investigations of potential borrow areas to determine the risk of ASS.	ASS sampling of construction borrow material.	During geotechnical investigations	BCI	Desktop ASS assessment (completed for DFS)
	Mapping of ASS/PAF material	Prior to construction	BCI	GIS Spatial database
Excavation and groundwater abstraction will be avoided in areas recorded as posing risk of ASS.	Geotechnical investigations report. GIS spatial mapping.	During construction	Contractors	GIS Spatial database
If required: ASS/PAF material to be managed in accordance with an ASS procedure	ASS soil handling records. GIS spatial mapping.	If ASS material is encountered.	Contractors	ASS Procedure (if ASS is recorded in the Project) GIS Spatial database

9.5 Waste

The management of hazardous and non-hazardous waste will be standardised during the construction phase to protect human health and the surrounding environment. Waste streams generated during the construction phase will include:

- Wastewater from treatment plants;
- Putrescible waste (including food scraps, paper and packaging);
- Inert waste (including cleaning items and non-hazardous industrial waste);
- Recyclable and potentially reusable materials (including macro and micro plastics);
- Disposable items (including parts and substances arising from servicing machinery);
- Unserviceable or unwanted tools, machinery, vehicles, clothing, appliances, furniture, bedding, structures or parts thereof; and
- Hazardous waste (including hydrocarbon/chemical contaminated materials – refer to Section 9.6).

The environmental management strategy for waste has been provided in Table 14.

Table 14: Environmental Management Strategy for Waste

Waste	
Objective	Ensure general waste (industrial, inert, recyclable and putrescible waste) is effectively contained and does not interact with the surrounding environment. Apply principles of waste minimisation through careful product selection, reuse and recycling. Waste management practices and procedures meet industry standards and satisfy statutory requirements.
Target	• All waste is either recycled or removed to an appropriate WA government waste disposal facility. • No cross contamination of waste. • No waste to reach environmentally sensitive areas within or surrounding the project.
Potential Impacts	• Dispersal of wastes in project and surrounding areas which result in visual pollution. • Release of hazardous or toxic pollutants into the environment. • Attraction of feral animals because of poor putrescible waste management.

Waste				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
All waste will be segregated.	Inspections	As required	BCI	Waste Register
All wastes (putrescible, recyclable, non-reusable) will be securely contained and sent for disposal at a WA Government licensed waste disposal facility. The putrescible landfill on site will be used for putrescible or inert wastes	Inspections	As required	BCI	Waste Register
All non-putrescible wastes (apart from inert wastes) will be taken offsite for disposal.	Inspections	At least once a month	BCI	Waste Register
Reusable wastes will be catalogued and stored within a designated laydown area.	Inspections	As required	BCI	Waste Register
All general-purpose bins will be lidded and emptied regularly to ensure the lids remain completely shut.	Inspections	As required	Contractor	Inspection Form
Vessels and equipment involved in coastal and marine construction works will carry secure waste storage containers.	Inspections	As required	Contractor	Inspection Form
All hazardous substance will be sent off site for disposal.	Controlled waste tracking forms	As required.	BCI	Controlled Waste Tracking Procedure

9.6 Hydrocarbons and Chemicals

Management actions have been assigned for the handling, storage, disposal and clean-up of hydrocarbons and chemicals that will be required during construction phase. These strategies have been summarised in Table 15.

Table 15: Environmental Management Strategy for Hydrocarbons and Chemicals

Hydrocarbons and Chemicals				
Objective	Identify the potential direct and indirect impacts of chemical and hydrocarbons and develop management measures to minimise the potential environmental impacts associated with chemical and hydrocarbon transport, storage, handling and disposal.			
Target	• All liquid chemicals are stored in accordance with Australian Standard 1940:2004. • No spills from bulk storage facilities. • All minor spills are remediated effectively. • No sites registered under the CS Act.			
Potential Impacts	• Contamination of groundwater and surface water due to incorrect storage, handling and spillage of hydrocarbons and chemicals. • Dispersal of hydrocarbon wastes within the project and surrounding areas which result in visual pollution. • Injury or death to local fauna (uncovered greases/oils etc.).			
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Hazardous material or chemical bunding will be of sufficient volume for the material or liquid chemical(s) stored. This required bunding volume will be the greater of, 25% of the total stored capacity or 110% of the capacity of the largest vessel. Liquid chemicals will be stored within a bund compliant with Australian Standards 1940 - 2004.– The storage and handling of flammable and combustible liquids and AS 1692 – Tanks for flammable and combustible liquids.	Inspections	As required	All	Inspection Form

Hydrocarbons and Chemicals				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Safety data sheets to be available for all potentially hazardous chemicals.	Safety Data Sheet	Prior to handling chemicals	All	Safety Data Sheet Register
All mobile plant/equipment will be inspected for potential mechanical failure, that could lead to leaks or spills, by a suitably qualified trade (e.g. mechanic, fitter) prior to operating on Site.	Mechanical inspections	Prior to utilising equipment.	BCI	Mechanical Inspection Form Mechanical Inspection Register.
Prestart mechanical and safety inspections are conducted.	Prestart Equipment inspections	As required	All	Prestart Inspection Form
All mobile equipment will be serviced within a designated service area.	Inspections	As required	All	Inspection Form
The refuelling/service truck will be equipped with drip trays, spill recovery and clean up materials	Daily workplace inspection	As required	All	Daily Workplace Inspection Form
All spills to ground will be removed as soon as practicable, recorded as an incident (if over 20L) and reported to the Construction Manager	Incident report forms	As required	All	Incident Reporting and Management Procedure Spill Response Procedure
Hypersaline pipelines will be bunded and/or double cased to ensure containment of spills.	Commissioning report	During commissioning	Contractor	N/A
Pipeline pressure/flow leak detection monitoring will be installed and interlocked with the pump, resulting in a shutdown of pumping if the flow drops below a certain level.	Commissioning report	During commissioning	Contractor	N/A

9.7 Weeds

Weeds can be spread from existing infestations and can be introduced to the Project area through vehicles and earth moving equipment. Weeds have potential to reduce habitat quality for conservation significant species.

Mesquite is a weed that is prevalent in the northern part of the Project area and requires special management in accordance with the BCI Weed Management Plan, which includes key aspects of the Pilbara Mesquite Management Committee (PMMC) Mesquite Management Strategy.

The management strategies within Table 16 will ensure that new weed species are not introduced to the Project area and that weeds from within the Project area are not spread beyond the Project.

Table 16: Environmental Management Strategy for Weeds

Weeds	
Objective	To ensure that new weed species are not introduced to the Project area and that weeds from within the Project area are not spread beyond the Project.
Target	• No new weed species identified in the Project area. • No earthmoving equipment enters the Project area containing soil and debris. • No mobile equipment leaves site containing weed seeds and/or soil. • Decrease in area within the Development Envelope that is densely infested with Mesquite compared to baseline.
Potential Impacts	• Loss or decline in habitat. • Reduction in biological diversity. • Delayed rehabilitation success. • Loss or decline of pastoral productivity.

Weeds				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Earthmoving equipment will be free of all soil and debris prior to entering the Project area.	Vehicle Weed Inspection Form Vehicle Weed Inspection Register	Prior to earthmoving equipment entering the Project area	BCI	Vehicle Weed Inspection and Clearing Procedure Vehicle Weed Inspection Form Vehicle Weed Inspection Register
Implement the approved Mesquite Management Plan.	Vehicle Weed Inspection Form Vehicle Weed Inspection Register	Prior to earthmoving equipment arriving and leaving the Project area.	BCI	Mesquite Management Plan
Establish baseline mapping of mesquite within the development envelope.	Mesquite extent spatial data in GIS.	Complete	BCI GIS	ArcGIS spatial layer for Mesquite.
Site inductions and toolbox training to include Mesquite awareness.	Project Induction. Toolbox topic – Mesquite awareness.	Complete Prior to clearing in Mesquite infested areas of OMP Development Envelope.	PMMC	Project Induction Powerpoint presentation.
Develop and implement clearing and soil movement procedure for areas infested with Mesquite.	Clearing monitoring.	Prior to clearing in Mesquite infested areas of OMP Development Envelope.	BCI	Mesquite management plan
Where possible, topsoil will not be stripped in areas of high mesquite infestation (mapped as Degraded or Poor quality in vegetation mapping) to prevent further spread.	Topsoil stockpile inspections. Post clearing survey	Weekly during clearing activities. Annual material balance reconciliation.	PMMC	Inspections reports

Weeds				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Internal Ground Disturbance Permitting procedure to include Mesquite hygiene requirements.	GDP procedure and GDP form.	Complete	BCI	GDP Register
Conduct Mesquite clearing trials.	Mesquite clearing trial results.	During Construction	BCI	Mesquite clearing trial proposal in consultation with PMMC. Mesquite clearing trial report.
All vehicles leaving the Project are to be inspected to ensure they are free of weed seeds and soil.	Weed Hygiene Checklists	Prior to any vehicle leaving site.	All	Weed Hygiene Checklist (MAR-ENV-CHK-001) Mesquite Management Plan
All road vehicles are washed down before entering the development envelopes	Vehicle Weed Inspection Form Vehicle Weed Inspection Register	Prior to any vehicle entering the development envelopes.	All	Vehicle Weed Inspection and Clearing Procedure Vehicle Weed Inspection Form Vehicle Weed Inspection Register
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Any road vehicle moving from an area of weed infestation is cleaned of any soil and organic matter before it enters any area free of weed infestation	Vehicle Weed Inspection Form Vehicle Weed Inspection Register	Prior to any vehicle moving between an area of weed infestation and an area free of weed infestation.	All	ArcGIS spatial layer for Mesquite. Weed Hygiene Checklist (MAR-ENV-CHK-001)
BCI will not move any soil from any area of weed infestation to any area free of weed infestation.	Weed Hygiene Checklists	Prior to any vehicle moving between an area of weed infestation and an area free of weed infestation	All	ArcGIS spatial layer for Mesquite. Weed Hygiene Checklist (MAR-ENV-CHK-001)

Weeds				
All Project vehicles entering or leaving the development envelope (excluding the location where the development envelope intersects with the North West Coastal Highway) are cleaned of any soil and organic matter at the Mardie access road washdown station	Vehicle Weed Inspection Form Vehicle Weed Inspection Register	Prior to any vehicle entering/exiting the development envelopes.	All	Vehicle Weed Inspection and Clearing Procedure Vehicle Weed Inspection Form Vehicle Weed Inspection Register
All public vehicles entering or leaving the development envelope (excluding the location where the development envelope intersects with the North West Coastal Highway) have access to the Mardie access road washdown station, and clearly legible and comprehensible signage that directs the public to clean vehicles of any soil and organic matter is erected on both sides of the road, for drivers entering and leaving the development envelope.	Vehicle Weed Inspection Form Vehicle Weed Inspection Register	Prior to any vehicle entering/exiting the development envelopes.	All	Vehicle Weed Inspection and Clearing Procedure Vehicle Weed Inspection Form Vehicle Weed Inspection Register

9.8 Heritage

There are several significant heritage sites identified within the Project area. These sites and the relationships with the traditional owners will be managed as per the heritage strategy summarised in Table 17.

Table 17: Heritage Management Strategy

Heritage				
Objectives	To identify and manage Aboriginal heritage that may be affected by the Project in a manner that complies with Legislation, the Land Access Deeds with the Yaburara Mardudhunera and Kuruma Mardudhunera Native Title claim groups and the commitments made to these groups.			
Targets	• No unlawful disturbance of heritage areas. • No Project activities to be conducted outside of the Land Access Deeds with the Yaburara Mardudhunera and Kuruma Mardudhunera Native Title claim groups.			
Potential Impacts	• The destruction of significant Aboriginal sites and objects. • Lost relationships with the Yaburara Mardudhunera and Kuruma Mardudhunera Traditional Owners.			
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Heritage sites and their buffer zones will be clearly delineated in the field within the Project area. Access to these areas' entry will be prohibited.	Areas marked to signify heritage areas. GIS Data	Prior to construction	BCI	Heritage Sites Register Inspection
Clearing activities to be conducted under the GDP process.	GDP	Prior to disturbance activities taking place.	All	GDP (Issued after Ground Disturbance Request Form (BCI-ENV-FRM-001) is submitted and approved). Site Clearing Permit Form (0000-EV-FRM-0003) Ground Disturbance Register (0000-EV-LST-0005)

Heritage				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Should the Contractor or employee become aware of a potential heritage site within an area of proposed clearing, all activity will cease immediately in this area and the Contractor will inform the Mardie Construction Supervisor.	Hazard report	As required.	All	Incident Reporting and Management Procedure
Any disturbance to heritage sites will be reported as an incident to the Mardie Environmental Advisor immediately.	Incident Report	As required	All	Incident Reporting and Management Procedure

9.9 Greenhouse Gas Emissions

BCI have followed the guidance set out by The *National Greenhouse and Energy Reporting Act 2007* (NGER Act) to provide a framework for how greenhouse gas emissions will be reported as outlined in Table 18.

Table 18: Greenhouse Gas Emissions Strategy

Greenhouse Gas Emissions				
Objectives	Ensure that the Project gas emissions align with the NGER Act.			
Targets	• Remain under designated NGER Act trigger and threshold criteria.			
Potential Impacts	• Increased carbon footprint contributing to climate change. • Localised degradation of environmentally significant areas.			
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
All parties during construction are to record greenhouse gas emission data.	Monthly Reports	Monthly	All	NGER Act Consumption Register
All reporting to be conducted as per the framework in the NGER Act.	Reports	As required	All	NGER Act

9.10 Water Management

Most of the site is located within the influence of high tides, with embankment construction methodology allowing free movement of tides up until closure of the pond perimeter. Project activities will be conducted in a way that will minimise interactions with surface water and groundwater as far as practicable.

Table 19 provides the environmental management strategies for surface water and groundwater.

Table 19: Water Management Strategy

Water Management	
Objectives	• To minimise harm to protected matters and their habitats, including Mardie Pool, open riparian woodlands vegetation and BCH, BCI must ensure that the construction of the intertidal rock causeway does not impede or alter any natural water flows to and from BCH or Mardie Pool, or otherwise harm the existing coastal tidal inundation regime. • To minimise harm to protected matters, BCI must ensure that surface water diversions do not impede or alter any existing intertidal flows or surface water flows to the Mardie Pool, open riparian woodlands vegetation or BCH, and that the intertidal flows and surface water flows are equivalent to the modelled predictions described in the OMP Environmental Review Document (ERD).[4]
Targets	• no adverse impact to water levels or water quality in Mardie Pool as a result of changes to groundwater regimes or groundwater quality; • no adverse impact to water levels or water quality in Mardie Pool as a result of surface water flows associated with the Project; • No changes to the extent of surface water flooding during a one (1)-year ARI or changes to tidal inundation as a result of the construction of the intertidal causeway that are greater than predicted in Causeway Tidal Inundation Assessment – technical memorandum (Advisian 2022). [5]
Potential Impacts	Reduction in surface water volume or quality flowing into Mardie Pool Loss of BCH, Mangrove or Marine ecosystem function due to reductions in surface water flows

[4] Preston Consulting (2022). *Optimised Mardie Project Supplementary Report*. Prepared for Mardie Minerals Pty Ltd. Available at: https://www.epa.wa.gov.au/proposals/optimised-mardie-project
[5] Advisian (2022). *Causeway Tidal Inundation Assessment – Technical Memorandum*. Document number 311012-A01000-HYD-MEM-0034. Available at: https://www.epa.wa.gov.au/proposals/optimised-mardie-project

Water Management				
Management Action	Monitoring / Evidence	Timing	Responsibility	Supporting Documents
Floodways and culverts will be installed at the locations which the *Causeway Tidal Inundation Assessment – technical memorandum (Advisian 25 July 2022, Doc No: 311012-A01000-HYD-MEM-0034)* demonstrates will ensure that the Intertidal Flow Objective will be achieved.	Visual embankment inspections including photographic evidence during construction.	Daily	BCI	Daily construction report Causeway Tidal Inundation Assessment – technical memorandum (Advisian 25 July 2022, Doc No: 311012-A01000-HYD-MEM-0034)
Undertake daily visual monitoring at the peak of every high tide and at least once at the midpoint between high tides, commencing within 1 month of the commencement of the construction of the intertidal rock causeway and continuing until at least 1 month after all construction of the intertidal rock causeway has been completed, to determine whether the Intertidal Flow Objective is being achieved.	Visual embankment inspections including photographic evidence during construction Reporting: refer to Section 4.2.	At least once each month and for seven days following each large storm event (natural meteorological events that cause major change such as tree fall, storm surges and noticeable landform change) until the completion of the action.	BCI	Summary of daily camera footage reports
Monitor surface water flows at least once each month to determine whether the surface water flows to the Mardie Pool are maintained and equivalent to the modelled predictions in the *Causeway Tidal Inundation Assessment – technical memorandum (Advisian 25 July 2022, Doc No: 311012-A01000-HYD-MEM-0034).* The monitoring must include data collection from Mardie Pool, the intertidal zone, and at least three points within each of the drainage channels.	In field monitoring Reporting: refer to Section 4.2.	At least once each month.	BCI	Monthly monitoring report

Water Management				
If the monitoring, inundation modelling and further engineering solutions undertaken and implemented after the construction of the intertidal rock causeway shows that the Intertidal Flow Objective is unlikely to be achieved, then the intertidal rock causeway will be removed to ensure the Intertidal Flow Objective is achieved within 6 months of the completion of the construction of the causeway.	Visual embankment inspections including photographic evidence during construction Reporting: refer to Section 4.2.	Ongoing	BCI	Monthly monitoring report

10. OTHER CONDITIONAL ENVIRONMENTAL MANAGEMENT PLANS

Conditional EMPs have or are being developed to satisfy the obligations stipulated within the EP Act and EPBC Act approvals. The BCI Environment team is responsible for monitoring of the implementation of the following Conditional EMPs as approved:

- Aboriginal Cultural Heritage Management Plan;
- Benthic Communities and Habitat Monitoring and Management Plan (BCHMMP);
- Dredge Management Plan;
- Erosion and Sediment Control Plan;
- Groundwater Management Plan (GMMP);
- Illumination Plan for marine and terrestrial fauna;
- Long-term Migratory Shorebird Monitoring and Management Plan;
- Marine Environmental Quality Monitoring and Management Plan (MEQMMP);
- Marine pest management procedure for vessels and immersible equipment;
- Marine Turtle Monitoring Program;
- Mesquite Management Plan; and
- Underwater Noise Management Procedure.

11. MONITORING & CORRECTIVE ACTION

11.1 Audit & Inspection

Audits will be conducted to ensure the ongoing compliance with regulatory requirements, adequacy and effectiveness of the CEMP, and to facilitate continuous improvement. Environmental audits are planned and scheduled with all other project audits, and detail the type of audit, duration, auditors (including the Lead Auditor), and dates.

The findings from internal audits on the implementation of the CEMP for the project are provided to the Construction Manager and Manager Environmental Approvals and Compliance.

Whenever practicable, personnel conducting an audit address the identified deficiencies immediately during the inspection. In all other cases the Action will be added into the INX InControl Event Management Register and a nominated person will be made responsible for ensuring the action is managed in accordance with the set date for completion. The Environmental Advisor monitors and reports on the progress of rectification of any outstanding corrective actions.

11.1.1 Contractor Audits and Inspections

Contractors are required to undertake audits of their workspace, as communicated to the Contractor through the tender and contract.

11.2 Environmental Non-Compliance

All non-compliances, including those raised by project audits, are registered and controlled in accordance with Incident Reporting and Investigation and using INX InControl.

Possible non-compliances include regulatory non-compliance, non-compliance with the management measures outlined in this CEMP, and mitigation strategies/ management measures outlined in the CEMP sub-plans. Possible non-compliances are to be registered and controlled using INX InControl.

Where detected, any non-compliance or environmental impact exceeding specified limits are investigated by the Environmental Advisor to determine the extent of possible non-compliance. The non-compliance is corrected as soon as possible with necessary action taken to prevent recurrence.

All non-compliances are reported to BCI and clearly identify the corrective/ preventative actions to be taken and the close-out date.

11.3 Environmental Complaints

Third party environmental complaints are managed in accordance with the BCI Communication and Consultation processes.

11.4 Environmental Breach

Contractors found to be in breach of this CEMP are managed in accordance with the contract under which they have been engaged.

12. ADAPTIVE MANAGEMENT

BCI's ESMS provides for ongoing review and improvement of existing systems and controls. BCI conducts an annual comprehensive business strategy planning process which guides the overall business operation for the following year. KPIs for the business and individuals are determined from these reviews. The achievement of compliance with environmental management obligations is considered in the strategic objectives for the Project, enabling the identification of issues to upper management and the allocation of resources where necessary to implement improvements.

Specific ongoing review commitments of the CEMP will be implemented and shall assess the appropriateness of the CEMP to the Project activities based on audit information, and determine if any changes to the CEMP are required as a result of scope, legislative or organisational changes.

As required under Condition 51 of EPBC 2018/8236, BCI are required to update the CEMP at least every five years while construction activities are being undertaken. All revisions of the CEMP shall be submitted to DWER and DCCEEW for approval in accordance with MS1211, EPBC 2018/8236 and EPBC 2022/9169. This CEMP will also be updated as required by conditions of approval in EPBC 2024/___ (to be assessed).

13. REFERENCES

Document Number	Description
0000-LH-PLN-0001	Aboriginal Cultural Heritage Management Plan
R220411-ENV-001	Benthic Communities and Habitat Monitoring and Management Plan
	Controlled Waste Tracking Procedure
0000-EV-PLN-007	Dredge Management Plan
BCI-0000-CN-PLN-0003 Rev 0 Previously issued as MAR-WHS-PLN-003	Emergency Response Manual
BCI-ENV-POL-001	Environment and Community Policy
MAR-0000-EV-RRG-BCI-000-0001	ESMS Risk Register
BCI-ENV-PRO-006 Previously issued as MAR-0000-EV-PRO-EGM-020-0004	Fauna Management Procedure
	Flood Management Plan
MAR-0000-EV-PRO-BCI-000-003	Ground Disturbance Procedure
0000-EV-LST-0005	Ground Disturbance Register
BCI-ENV-FRM-001	Ground Disturbance Request Form
000-EV-PLN-0005	Groundwater Monitoring and Management Plan
BCI-WHS-PRO-022 Previously issued as MAR-0000-HS-PRO-BCI-000-0004	Hazardous Chemical Management
BCI-WHS-ST-002-0	Health and Safety Critical Control Standards
0000-ENV-PLN-0014	Illumination Management Plan
BCI-WHS-PR-009	Incident Reporting and Management Procedure
	Licence to Operate Register
MAR-0000-ENV-PLN-BCI-000-0008)	Marine Environmental Quality Monitoring and Management Plan
21WAU-0060-08/ T210234	Marine Pest Management Procedure
0000-EV-PLN-0008	Marine Turtle Monitoring Program
0000-EV-PLN-0005 Rev 4	Mesquite Management Plan
0000-EV-PLN-0011	Migratory Shorebird Monitoring and Management Plan
0000-EV-LET-0005	*Minuria Tridens* Research & Offset Strategy
BCI-RMG-PRO-001	Risk Management Procedure
	Safe Work Instructions
0000-EV-FRM-0003	Site Clearing Permit Form
BCI-ENV-PRO-007 Previously issued as MAR-0000-EV-PRO-EGM-020-0005	Spill Response Procedure
MAR-0000-LH-PLN-BCI-000-0002	Stakeholder and Communication Management Plan
MAR- WHS-PLN-007	Traffic Management Plan

Document Number	Description
0000-EV-PRO-0007	Underwater Noise Management Procedure
MAR-0000-EV-PRO-BCI-000-0004	Vehicle Weed Inspection and Cleaning Procedure
BCI-ENV-PRO-005 Previously issued as MAR-0000-EV-PRO-EGM-020-0003	Waste Management Procedure
0000-HS-CHK-0004	Weed Hygiene Exit Checklist Light Vehicle
0000-HS-CHK-0005	Weed Hygiene Exit Checklist Trucks
0000-EV-PLN-0003	Weed Management Plan

14. DEFINITIONS

Term	Definition
ACR	Annual Compliance Report
ASS	Acid Sulphate Solis
ANCOLD	Australian National Committee on Large Dams
BCH	Benthic Communities and Habitat
BCHMMP	Benthic Communities and Habitat Monitoring and Management Plan
CEMP	Construction Environmental Management Plan
CS Act	*Contaminated Sites Act 2003* (WA)
BCI	BCI Minerals Limited
Cth	Commonwealth
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEVELOPMENT ENVELOPE	The areas represented in Figures 1 and 2 by the zones designated as 'Original Proposal Development Envelope' and 'Optimised Proposal Development Envelope'
DFS	Original Mardie Salt Project (approved under MS1175 and EPBC 2018/8236)
DWER	Department of Water and Environmental Regulation
EMP	Environmental Management Plan
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986* (WA)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
ERD	Environmental Review Document
ESMS	Environment and Social Management System
GDP	Ground Disturbance Permit
GIS	Geographic Information System
GMMP	Groundwater Monitoring and Management Plan
HSEC	Health, Safety, Environment and Communities
ICAM	Incident Cause Analysis Method
JHA	Job hazard analysis
km	Kilometre
kmph	Kilometre per hour
KPI	Key Performance Indicator
KTMS	Kainite type mixed salt
ktpa	Kilotonnes per annum
L	litre
m	Metres

Term	Definition
mm	Millimetre
MCP	Mine Closure Plan
mAHD	Metre Australian Height Datum
MEQMMP	Marine Environmental Quality Monitoring and Management Plan
MEER	Marine Environmental Emergency Response
MS	Ministerial Statement
Mtpa	Million tonnes per annum
NGER Act	*National Greenhouse and Energy Reporting Act 2007* (Cth)
OMP	Optimised Mardie Project (approved under MS1211 and EPBC 2022/9169)
PAF	Potentially Acid Forming
PEC	Priority Ecological Community
Project	Mardie Salt and Potash Project
PMMC	Pilbara Mesquite Management Committee
RRDMMA	Robe River Delta Mangrove Management Area
SOP	Sulphate of Potash
SSE	Senior Site Executive
SWG	Soilwater Group
WA	Western Australia