Offshore Dredge Spoil Disposal - Mardie Project

Application Number: **02690** Commencement Date: **15/11/2024** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Offshore Dredge Spoil Disposal - Mardie Project

1.1.2 Project industry type *

Mining

1.1.3 Project industry sub-type

Other

1.1.4 Estimated start date *

01/04/2026

1.1.4 Estimated end date *

30/09/2027

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

Mardie Minerals Pty Ltd (Mardie Minerals; a wholly owned subsidiary of BCI Minerals Limited) is seeking to transport and dispose of dredge spoil from capital and maintenance dredging activities for the Mardie Project (EPBC 2018/8236 and EPBC 2022/9169) within a defined offshore spoil ground 'DMPA4' (Proposed

Action). Mardie Minerals has approval under Condition 36(c) of EPBC 2018/8236 and EPBC 2022/9169 to dredge up to 800,000 cubic metres (m3) within the Mardie Project dredge channel. The current volume proposed to be dredged and disposed is estimated to be up to 355,000 m3 (including 10% over dredge).

The Proposed Action is located in WA State marine waters. DMPA4 is approximately 25 kilometres (km) (13.5 Nautical Miles (NM)) offshore from the Mardie Project, 10.5 km (5.7 NM) northwest of Sholl Island and 116 km (63 NM) northeast of Onslow, Western Australia (WA) (Att1_Figures_1_250124, Figure 1, Page 1).

The Project Area, including DMPA4 and the zones of impact, comprises an area of 1,105 ha. DMPA4 comprises an area of 30.3 ha (Disturbance Footprint - Direct). The Disturbance Footprint – Indirect is defined as the outer boundary of the Zone of Moderate Impact (ZoMI), and includes the 355 ha portion of the Zone of High Impact (ZoHI) that lies outside DMPA4. The combined ZoHI and ZoMI (without DMPA4) cover an area of 1,075 ha (Disturbance Footprint – Indirect). The Project Area and Disturbance Footprints are shown in Figure 2 of Attachment 1 (Att1_Figures_1_250124, Figure 2, Page 2).

In January 2022, Mardie Minerals was granted approval for the Mardie Project via EPBC 2018/8236 under the *Environment Protection and Biodiversity Conservation Act 1986* (Cth; EPBC Act). The Mardie Project is a greenfields high quality salt and sulphate of potash (SoP) project and associated export facility at Mardie, approximately 80 km southwest of Karratha, in the Pilbara region of WA. Mardie Minerals subsequently referred the Optimised Mardie Project to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) as a significant amendment to the Mardie Project, with the purpose of accommodating increased salt and SoP production, facilitated by additional *Mining Act 1978* (WA) tenure secured by Mardie Minerals. In September 2024, the Optimised Mardie Project was granted approval via EPBC 2022/9169.

In order to construct the export facility approved for the Mardie Project, dredging is required to develop a transhipment berth pocket and approximately 4.9 km channel. The disposal method approved under Condition 36(g) of EPBC 2018/8236 and EPBC 2022/9169 is onshore disposal. However, following engagement with dredging contractors, it was found that onshore disposal would be technically challenging, due to the shallow water depths inshore and the associated long slurry pumping distance. None of the dredging contractors approached to tender for the dredging works were supportive of the proposed onshore disposal approach. Additional to the technical concerns, were the likely impacts to *Minuria tridens* (Vulnerable) that occupy portions of the land-based dredge disposal area. No impacts to *Minuria tridens* are permitted under Condition 10 of EPBC 2018/8236 and EPBC 2022/9169.

As a result, several offshore disposal sites were considered, and DMPA4 was chosen as the preferred disposal location as it is close to the Mardie Project, and it was considered unlikely that the benthic communities and habitats (BCH) within the Disturbance Footprint (direct and indirect) represent particular regional or conservation significance compared to other areas within the Mardie and Pilbara region, where higher covers and diversities are observed (Att2_BCH Survey Report DMPA4 2024, Section 6, Page 26).

This Proposed Action is therefore to dispose of the dredge spoil produced from the Mardie Project within DMPA4, including the transport of dredge material via split hull hopper barges from the Mardie Project dredge areas to DMPA4.

The modelled scenario assumes that dredge spoil would be disposed at DMPA4 by split hull hopper barges across three hopper loads per day of approximately 1,200 m3 (on average), for a total of approximately 3,600 m3 being disposed per day (Att3_DMPA4 Dredge Plume Modelling 2024, Page 5). The modelled schedule has been broken into four separate sequences that in total, cover a duration of 98 days (Att3_DMPA4 Dredge Plume Modelling 2024, Table 3, Page 4). It should be noted that the maximum (of three) runs may not be possible on some days, and/or the dredging activities may take more or less than 98 days to get the expected 355,000 m3 design dredge volume to be disposed of at DMPA4. Details of the monitoring programs at DMPA4 are within the Dredge and Spoil Disposal Management Plan (DSDMP), which include:

- Marine Water Quality Monitoring Program (Att4_DSDMP 2024, Section 7.1, Pages 55-65);
- Benthic Habitat Monitoring Program (Att4_DSDMP 2024, Section 7.2, Pages 65-75); and

- Marine Fauna Monitoring (Att4_DSDMP 2024, Section 7.3, Pages 75-84).

The start date of the Proposed Action is expected to take place from 1 April 2026 to 30 September 2027. No dredging will occur during the 1 October to 31 March environmental blackout period.

The proposed vessel route from the dredging area to DMPA4 is shown in Figure 3 of Attachment 1 (Att1_Figures_1_250124, Figure 3, Page 3). From the dredging area, the vessels will initially move north along the transhipment vessel route for the Mardie Project. The route diverts in a northwestern direction between Sholl Island and Stewart Island to reach the spoil ground. The total length of the route is approximately 14.85 NM. The proposed vessel route may change based on prevailing weather, currents and tide conditions during the transport of dredged material to DMPA4 to ensure safe passage. The transport of dredged material via marine barges are regulated under the *Navigation Act 2012*, the *Shipping Act 1981*, and the International Maritime Organization (IMO) regulations.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

Yes

1.2.3 Is the proposed action the first stage of a staged development (or a larger project)?

No

1.2.4 Related referral(s)

EPBC Number	Project Title
2018/8236	Mardie Project, 80 km south west of Karratha, WA
2022/9169	Optimised Mardie Solar Salt Project

1.2.5 Provide information about the staged development (or relevant larger project).

In January 2022, Mardie Minerals was granted approval for the Mardie Project via EPBC 2018/8236 under the EPBC Act. The Mardie Project is a greenfields high quality salt and SoP project and associated export facility at Mardie, approximately 80 km southwest of Karratha, in the Pilbara region of WA. Mardie Minerals subsequently referred the Optimised Mardie Project to DCCEEW as a significant amendment to the Mardie Project, with the purpose of accommodating increased salt and SoP production, facilitated by additional *Mining Act 1978* (WA) tenure secured by Mardie Minerals. In September 2024, the Optimised Mardie Project was granted approval via EPBC 2022/9169.

This Proposed Action is to revise the dredge material disposal method approved under EPBC 2018/8236 and EPBC 2022/9169 to include offshore disposal.

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

Environment Protection Act 1986 (WA)

The key piece of legislation for a project with the potential to impact the environment in WA is the State's *Environmental Protection Act 1986* (EP Act). This is supported by the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual* (EPA, 2021a). The EP Act specifies the objectives and requisite procedures of environmental impact assessment (EIA) that proponents and stakeholders must comply with. Further guidance documents are provided by the WA Environmental Protection Authority (EPA) to define the environmental considerations expected as part of a project's EIA and environmental management. The *Statement of environmental principals, factors, objectives and aims of EIA* (EPA, 2021b) overarches the EIA environmental considerations, outlining the guiding principles and defining the specific factors to be considered and their objectives. Of particular relevance for dredging and disposal are those under the 'Sea' theme. This Proposed Action is to be referred to the WA EPA under the EP Act as a significant change to the Mardie Project.

Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The Mardie Project has been referred in two stages; the Original Mardie Project and the Optimised Mardie Project. The Original Mardie Project was assessed by DCCEEW and approved in January 2022 (EPBC 2018/8236). The Optimised Mardie Project was referred to DCCEEW in April 2022 and approved in September 2024 (EPBC 2022/9169). In October 2024, DCCEEW authorised the decision to amend the original EPBC 2018/8236 conditions to mirror the conditions of EPBC 2022/9169.

According to the Significant Impact Guidelines 1.1 (DotE, 2013), this Proposed Action has the potential to impact listed threatened species and listed migratory species and therefore requires referral under the EPBC Act.

Environment Protection (Sea Dumping) Act 1981 (Cth)

The Proposed Action is set to take place in WA State coastal waters. A permit under the *Environment Protection (Sea Dumping) Act 1981* (Sea Dumping Act) is required to undertake sea dumping activities in the marine environment. Mardie Minerals is currently finalising an application for a permit under the Sea Dumping Act to use DMPA4 as a Spoil Disposal area. This application will be assessed in parallel with this Proposed Action.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

The following stakeholders have been consulted to date or will be consulted with regarding the Proposed Action:

Commonwealth Government

- DCCEEW (EPBC Assessments and Sea Dumping Branch).

State Government

- EPA.
- Department of Water and Environmental Regulation (DWER).
- Department of Jobs, Tourism, Science and Innovation (DJTSI).
- Department of Planning, Lands and Heritage (DPLH).
- Department of Primary Industries and Regional Development (DPIRD).

Other

- Pilbara Ports Authority (PPA).
- Mineral Resources Limited.
- Western Australian Fishing Industry Council (WAFIC).
- Recfishwest.
- Port of Ashburton Technical Advisory and Consultative Committee (TACC).

Issues raised and outcomes of consultation that has taken place to date related to offshore spoil disposal are outlined in the attached Stakeholder Consultation Register (Att5_Stakeholder Consultation Register_1_250124).

Consultation will be ongoing with most of the stakeholders identified throughout the phases of the Proposed Action.

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	137515078
Organisation name	Preston Consulting Pty Ltd
Organisation address	6000 WA

Referring party details

Name	Annaliese Eastough
Job title	Environmental Consultant
Phone	0488737273
Email	aeastough@prestonconsulting.com.au
Address	Level 1/226 Adelaide Terrace, Perth WA 6000

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	50152574457
Organisation name	MARDIE MINERALS PTY LTD
Organisation address	6005 WA

Person proposing to take the action details

Name	Snyman Van Straaten
Job title	Manager of Environmental Approvals and Compliance
Phone	0400616790
Email	snyman.vanstraaten@bciminerals.com.au
Address	Level 1, 1 Altona Street, West Perth WA 6005

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

Mardie Minerals' active projects include the Mardie Project (EPBC 2018/8236) and the Optimised Mardie Project (EPBC 2022/9169). To-date, Mardie Minerals' environmental management record has been satisfactory. All exploration activities have been conducted in accordance with relevant legislation. Two infringement notices were issued to Mardie Minerals in 2024, discussed below.

Infringement notice CEB24/116 issued to Mardie Minerals on 6 June 2024. The notice relates to condition 4 of EPBC 2018/8236 (prior to variation):

4. *The approval holder must submit a Groundwater Monitoring and Management Plan (GMMP) to the Minister for approval. The approval holder must not commence operations until the GMMP has been approved by the Minister in writing. The approval holder must implement the approved GMMP…*

Commencement of operations is defined within EPBC 2018/8236 (prior to variation) as 'the first instance of transferring seawater into any evaporation pond as part of the action'. Pond 0 is considered an evaporation pond. It is part of Pond 1 according to all referral and approval documentation. The first instance of transferring seawater into any evaporation pond as part of the action (rather than commissioning of the pumps) was on 28 December 2023. However, the GMMP was not submitted and approved prior to 28 December 2023, resulting in a non-compliance against this condition. The GMMP (Revision M; 31 August 2024) was approved for implementation to facilitate progressive filling of Ponds 1, 2 and 3 with seawater on 9 September 2024.

Infringement notice CEB24/118 issued to Mardie Minerals on 6 June 2024. This notice relates to condition 24(b) of EPBC 2018/8236 (prior to variation), which refers to the Illumination Plan:

24(b) *The plan must be submitted and approved by the Minister prior to the commencement of the operation. The Illumination Plan must be implemented once the Illumination Plan is approved.*

Commencement of operations is defined within EPBC 2018/8236 (prior to variation) as 'the first instance of transferring seawater into any evaporation pond as part of the action'. Pond 0 is considered an evaporation pond. It is part of Pond 1 according to all referral and approval documentation. The first instance of transferring seawater into any evaporation pond as part of the action (rather than as part of commissioning of the pumps) was on 28 December 2023. The Illumination Plan was not submitted and approved prior to 28 December 2023, resulting in a non-compliance against this condition. The Illumination Plan (Revision 5; BCI-ENV-PLN-001) was approved on 31 January 2024.

Mardie Minerals paid the amounts of the infringement notices by 20 September 2024.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

Mardie Minerals has an Environmental Policy (Att6_BCI Environmental Policy 2022) and an Environmental and Social Management Plan (ESMP) (Att7_Mardie Project ESMP). The ESMP has been developed to identify the environmental and social management framework for the development and operation of the Mardie Project.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	50152574457
Organisation name	MARDIE MINERALS PTY LTD
Organisation address	6005 WA

Proposed designated proponent details

Name	Snyman Van Straaten
Job title	Manager of Environmental Approvals and Compliance
Phone	0400616790
Email	snyman.vanstraaten@bciminerals.com.au
Address	Level 1, 1 Altona Street, West Perth WA 6005

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	137515078
Organisation name	Preston Consulting Pty Ltd
Organisation address	6000 WA
Representative's name	Annaliese Eastough
Representative's job title	Environmental Consultant
Phone	0488737273
Email	aeastough@prestonconsulting.com.au
Address	Level 1/226 Adelaide Terrace, Perth WA 6000

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	50152574457
Organisation name	MARDIE MINERALS PTY LTD

Organisation address	6005 WA
Representative's name	Snyman Van Straaten
Representative's job title	Manager of Environmental Approvals and Compliance
Phone	0400616790
Email	snyman.vanstraaten@bciminerals.com.au
Address	Level 1, 1 Altona Street, West Perth WA 6005

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

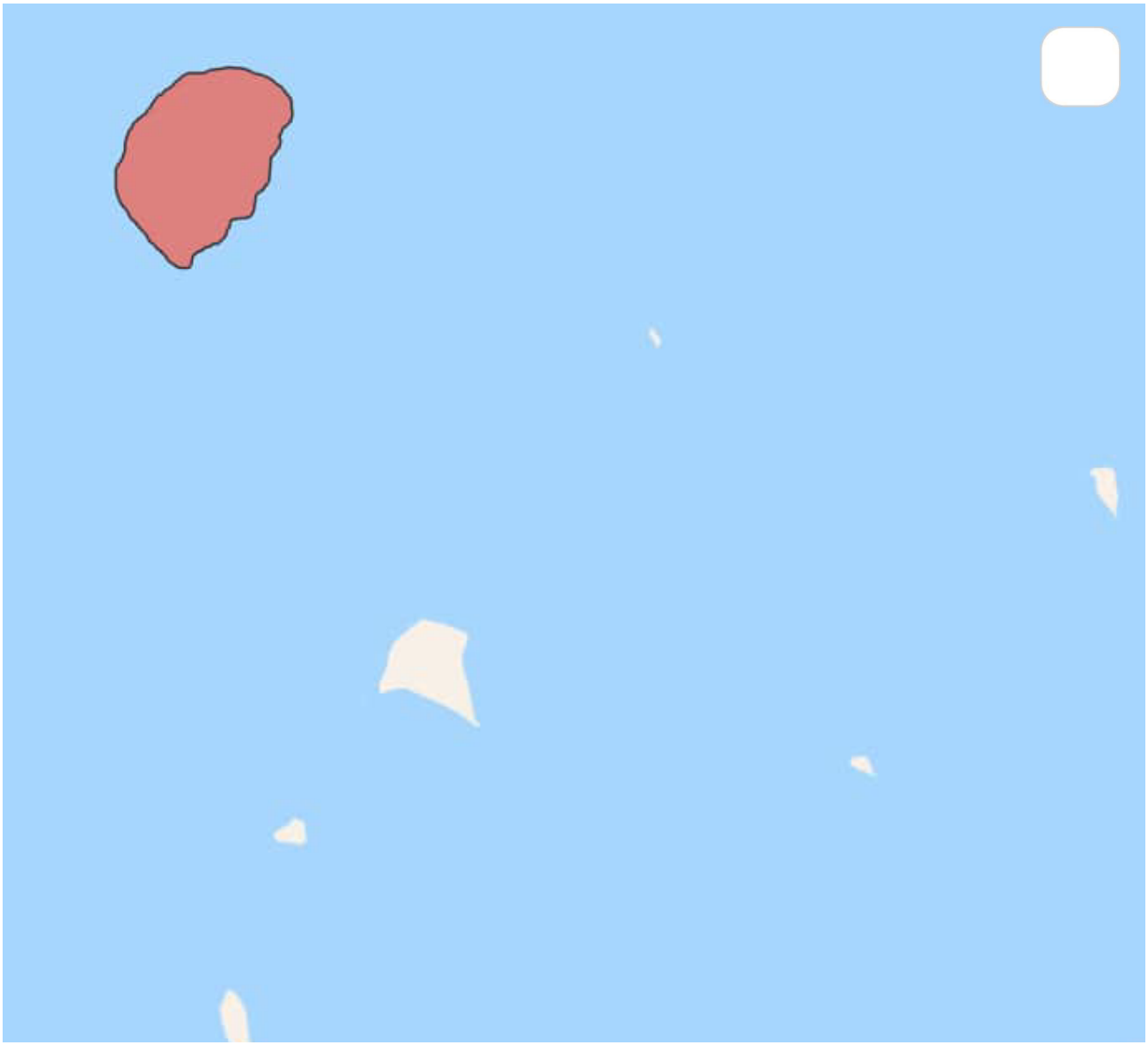
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Proposed designated proponent

2. Location

2.1 Project footprint



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2.2 Footprint details

2.2.1 What is the address of the proposed action? *

There is no address for the Proposed Action, as it is located in WA State marine waters, approxi

2.2.2 Where is the primary jurisdiction of the proposed action? *

Western Australia

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The Proposed Action is within WA State marine waters, 13.5 NM north west offshore within the 3M Limit: Coastal Waters.

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

O2 Marine was engaged to undertake a bathymetric survey, a BCH investigation, and sediment sampling of DMPA4. The purpose of this investigation was to determine the suitability of DMPA4 as a disposal site and to inform this Referral and related documents/approvals.

The key objectives of the DMPA4 investigation were to:

1. Undertake a Multibeam Eco Sounder (MBES) survey to provide bathymetric and backscatter data;
2. Undertake a Side Scan Sonar (SSS) survey within DMPA4 to provide backscatter data to help inform BCH classification;
3. Undertake ground-truthing (via towed video transects) to identify key BCH and validate SSS and backscatter data ;
4. Undertake sediment sampling within DMPA4 (Att2_BCH Survey Report DMPA4 2024, Appendix A, Page 31); and
5. Report on bathymetric and BCH results (Att2_BCH Survey Report DMPA4 2024).

Further detail about the survey effort and methods are provided in the BCH Survey Report (Att2_BCH Survey Report DMPA4 2024, Section 3, Pages 6-14).

The findings of this investigation are detailed in the results and discussion sections of the BCH Survey Report (Att2_BCH Survey Report DMPA4 2024, Section 4, Pages 15-31) summarised in the sections below.

SSS data indicates that DMPA4 contains a largely featureless seafloor comprised of unconsolidated sediments with no visual evidence of hard substrate, suggesting an absence of any exposed reef systems in the survey area. Water depths at DMPA4 are around 20 m, with multibeam data revealing a depth range of less than 2 m across the survey area. Subtle ridge features (<40 cm elevation) can be observed at several locations across the area. While the hydrographic data only provided limited evidence, it is probable that much area is underlain by pavement reef that is covered by a thin veneer of unconsolidated sediments (Att2_BCH Survey Report DMPA4 2024, Section 4.1, Pages 15-18).

3.1.2 Describe any existing or proposed uses for the project area.

There are no current or existing uses of the Project Area other than occasional boating and commercial and recreational fishing.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

DMPA4 is located in WA State marine waters. The closest Marine Protected Area is the Great Sandy Island Nature Reserve (Sholl Island), approximately 5.7 NM southeast of DMPA4. A search of the Protected Matters Search Tool (PMST) found no identified key ecological features within a 5.3 NM (10 km) buffer of DMPA4 (Att8_PMST Report DMPA4_241022, Page 2).

The DMPA4 was mapped for BCH distribution and cover, and two BCH categories were reported. BCH types were not distributed consistently throughout the area, however observed variations were mainly subtle changes in level of cover. DMPA4 can be broadly characterised as a filter feeder dominated habitat with a predominantly sparse to moderate level of cover. It is unlikely that the habitats at this site represent particular regional or conservation significance compared to other areas within Mardie and the Pilbara region, where higher covers and diversities are observed (Att2_BCH Survey Report DMPA4 2024, Section 6, Page 31).

Further details of BCH categories are provided in the BCH report (Att2_BCH Survey Report DMPA4 2024, Section 4.3, Pages 28-30).

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The seafloor in the nearshore coastal zone (i.e. shoreward of DMPA4) is predominantly flat with the exception of numerous small islands, which form a semi-enclosed barrier. This coastal platform slopes mildly seaward with turbid waters (particularly to 10 m and deeper in the north) and increasing tidal influence from south to north. Outside of the island chain, the bathymetry deepens and waters are much less influenced by turbidity (Att2_BCH Survey Report DMPA4 2024, Section 2, Page 5).

Water depths at DMPA4 are around 20 m, with multibeam data revealing a depth range of less than 2 m across the survey area. (Att2_BCH Survey Report DMPA4 2024, Section 4.1, Pages 15-18). Water depths at surveyed sites ranged between 18-21 m (Att2_BCH Survey Report DMPA4 2024, Section 3.2.3, Pages 9-10).

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

Flora

The Proposed Action is set to take place in WA State marine waters, therefore flora assessments are not applicable.

Fauna

The following information has been summarised from the DSDMP (Att4_DSDMP 2024, Section 2.6, Pages 22-29).

O2 Marine (Att9_Marine Fauna Review 2020, Section 3.2, Page 26) undertook an assessment of the likelihood of occurrence of conservation significant marine fauna species, based on the list of species provided in the Environmental Scoping Document (ESD) for the Mardie Project (Preston Consulting, 2018). Pendoley Environmental Pty Ltd (Pendoley) have conducted marine turtle monitoring for the Mardie Project (Att10_Marine Turtle Monitoring Program 2023). The following key marine fauna species were identified which are either known to occur or have a high likelihood of occurring in the vicinity of the Proposed Action:

- Marine mammals:
  - Humpback whale (*Megaptera novaeangliae*).
  - Dugong (*Dugong dugong*).
  - Australian humpback dolphin (*Sousa sahulensis*).
- Marine reptiles:
  - Loggerhead turtle (*Caretta caretta*).
  - Green turtle (*Chelonia mydas*).
  - Flatback turtle (*Eretmochelys imbricate*).
- Short-nosed sea snake (*Aipysurus apraefrontalis*).
  - Elasmobranchs
  - Green sawfish (*Pristis zijsron*).
  - Reef manta ray (*Mobula alfredi*).

In addition to these, further key marine fauna have been identified for DMPA4 based on a new search of the PMST and literature review detailed within the DSDMP (Att4_DSDMP 2024, Section 2.6, Page 22). These additional key marine fauna are:

- Marine mammals:
  - Indo-pacific/spotted bottlenose dolphin (*Tursiops aduncus*).
- Marine reptiles:
  - Leaf-scaled sea snake (*Aipysurus foliosquama*).
- Elasmobranchs:
  - Narrow sawfish (*Anoxypristis cuspidate*).
  - Dwarf sawfish (*Pristis clavata*).

Commercial fisheries species that occur within the region include:

- Bluespotted emperor (*Lethrinus punctulatus*);
- Western king prawns; and
- Brown tiger prawns.

Many of the species listed above are discussed in detail within the DSDMP (Att4_DSDMP 2024, Section 2.6, Pages 22-29). Information from the DSDMP specific to key species interactions with DMPA4 is outlined below.

Humpback Whales

DMPA4 is located approximately 41 km to the east of Barrow Island, 37 km west of Cape Preston and overlaps the humpback whale migration pathway. Jenner and Jenner (2010) completed aerial surveys offshore of Onslow for the Wheatstone Project. These surveys found that humpback whales were present in this area from mid-June through to mid-December (only 1 pod sighted in December surveys), with peak sightings from mid-June to late August. The surveys identified a relatively high proportion of humpback whales milling/resting, with an increasing number resting or milling during the southern migration. During the northern migration whales were predominantly found 50 km offshore and 35 km offshore during the southern migration. Humpback whale mother-calf pairs are the most vulnerable group, and they are known to rest offshore of Onslow, with the highest number of resting pairs observed within the 50 m depth contour (within 35 km of the coast). A precautionary approach will be implemented for offshore disposal during humpback whale migration (Att4_DSDMP 2024, Section 2.6.1, Page 23).

Dugong

No dugong were observed in the waters around Mardie during over 700 hours of vessel-based observations. O2 Marine concluded that this was most likely due to the lower value of the subtidal BCH in the area as suitable feeding or foraging habitat for dugong. However, surveys for seagrass (and dugong) were not undertaken during peak seagrass season (October-December). Nevertheless, dugong may be present in the Project Area and management measures have taken the precautionary approach that consider impacts to this species.

Seagrass was also not found to present within the spoil ground DMPA4, and therefore it would not represent preferred habitat, indicating that dugong would likely not reside in the area (though they may travel through) (Att4_DSDMP 2024, Section 2.6.1, Page 24).

Australian Humpback Dolphin

Aerial surveys completed around Spoil Ground E for the Wheatstone Project (offshore of Onslow, east of DMPA4) found that larger dolphin pods (>100 individuals) can be sighted offshore though the majority of dolphin sightings were recorded in water depths less than 50 m (Jenner and Jenner, 2010). Within shallower waters, smaller groups were more common. They are also more likely to be found in relatively shallow and protected coastal habitats such as inlets, estuaries, major tidal rivers, shallow bays, inshore reefs and coastal archipelagos, rather than in open stretches of coastline. Therefore the Australian humpback dolphins are likely to be present within the vicinity of the dredging footprint and the DMPA4 location, but it does not represent important habitat for the species, being more likely to be present closer to protected waters (Att4_DSDMP 2024, Section 2.6.1, Page 24).

Indo-pacific bottlenose dolphin

The indo-pacific bottlenose dolphin has been recorded throughout the year within the region and share similar behavioural activities with the Australian humpback dolphin, with some degree of spatial overlap. At a regional scale, there may be some partitioning between the species with bottlenose dolphins preferring deeper waters close to sloping bathymetry (Hanf et al., 2022). Finer scale studies support this, with significant differences in habitat use and fine-scale habitat selection (e.g. Hunt et al., 2017). This species may be present within the vicinity of the DMPA4 location from time to time but does not represent important habitat for the species (Att4_DSDMP 2024, Section 2.6.1, Page 24).

Turtles

The marine turtle monitoring program completed for the Mardie Project found that the marine turtle nesting activity was greatest on Sholl and Long Islands. With the exception of the single Hawksbill nest recorded on the mainland in December during the 2018/19 survey (albeit past the peak of the Hawksbill nesting season), turtles nested most successfully on the offshore islands during all surveys.

The main species recorded on the offshore islands was Flatbacks, with relatively less nesting effort seen for Hawksbill and Green turtles at the same locations. The snapshot monitoring data from Round, Middle, and Angle Islands confirmed similar species composition and abundance at these sites. These results are

consistent with turtle activity throughout the Pilbara, where Flatback and Hawksbill nesting is dominant on nearshore island habitat, and Flatback Turtles are the most common mainland nesting species.

DMPA4 does not represent preferred foraging habitat for turtles, as it is dominated by bare sand and filter feeders, and turtle foraging studies completed in the region finding higher densities of foraging turtles over reef habitats. The nesting islands such as Sholl Island will be near the indicative vessel route to DMPA4, however, this will occur outside of turtle nesting and hatching seasons to prevent impacts to these activities (Att4_DSDMP 2024, Section 2.6.2, Page 25).

Sea snakes

DMPA4 is within the distribution range of the short-nosed sea snake, with a new species distribution extending from Exmouth Gulf and around the Muiron Island to the Montebello Islands Marine Park (Udyawer et al., 2020). Although the spoil ground location represents suitable habitat, no sea snakes have been identified at the location and BCH within the spoil ground does not represent preferred reef habitat. Other species of sea snake such as the leaf-scaled sea snake also do not have preferred habitat within DMPA4 (Udyawer et al., 2020)(Att4_DSDMP 2024, Section 2.6.2, Page 25).

Narrow Sawfish

Narrow sawfish are found from Onslow up to the Northern Kimberley. They are commonly found offshore in deeper waters and are more likely to be recorded within the offshore spoil ground area than the dredging area, based on recent sawfish capture records from the Pilbara Trawl Fishery (Harry et al., 2024). Therefore, a precautionary approach will be applied for this species (Att4_DSDMP 2024, Section 2.6.3, Page 26).

Reef Manta Ray

Giant manta rays were identified offshore of Onslow during aerial surveys for the Wheatstone Project and were predominantly in water depths ranging from 50 - 150 m, they were broadly and sparsely distributed (Jenner and Jenner, 2010). Giant manta rays may be present within the vicinity of the spoil ground from time to time though it is unlikely as the spoil ground is only within ~20 m depth (Att4_DSDMP 2024, Section 2.6.3, Page 27).

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

Sediments

DMPA4

Sediment sampling was undertaken by O2 Marine as part of a broader investigation into the bathymetry, BCH and sediment at DMPA4 (Att2_BCH Survey Report DMPA4 2024, Section 1.2.1, Page 3). The field survey for this investigation was conducted over a period of seven days from 20 September – 26 September 2024. The results of the sediment assessment of DMPA4 is included as Appendix A of the BCH Report, and is summarised below (Att2_BCH Survey Report DMPA4 2024, Appendix A, Page 31).

Sediments within DMPA4 were sampled in 2024 at four random locations and analysed for various analytes to characterise the sediments within the area. Results generally reflect sediment characteristics expected from an offshore greenfield site in the Pilbara. The majority of the contaminants (metals, hydrocarbons, TBT and BTEXN) were either below the laboratory LoRs, below the NAGD (2009) ISQG-low screening levels, or comparable to concentrations along the Pilbara coast as documented in DEC (2006).

PSD results indicate that all four sites within DMPA4 are largely comprised of coarse sand (approximately 55% of each sample), with smaller proportions of fine sand and gravel. These results are comparable to five northern most sediment samples (SS1, SS2, SS3, SS4, and SS5) collected within the dredge channel in 2022.

Dredging footprint and surrounding sediments

A baseline sediment assessment of the Mardie Project dredging footprint and surrounding sediments (Att11_Baseline Marine Sediment Assessment 2019, Section 6.2, Page 55) identified that of the Contaminants of Potential Concern (CoPC) analysed, only arsenic and nickel (95% UCL of mean) concentrations exceeded the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018) and NAGD screening levels (ISQG-Low) (NAGD, 2009). In comparison to other marine sediment programs in similar areas of the Pilbara (DEC, 2006), some concentrations of metals and nutrients were naturally higher than previously recorded (Att11_Baseline Marine Sediment Assessment 2019, Section 6.2, Page 55). However, sediment is still deemed suitable for offshore disposal (Att4_DSDMP 2024, Section 2.4.1, Page 21).

As per the recommendations of O2 Marine, revised site-specific environmental quality criteria (EQC) were developed for the Mardie Project (refer Table 18 of Attachment 11 (Att11_Baseline Marine Sediment Assessment 2019, Section 6.7, Page 58)).

Further sediment sampling within the revised dredge footprint was undertaken in 2023 (Att12_Marine Sediment Quality Assessment 2023). All contaminants analysed during this sampling campaign were below the NAGD screening levels (ISQG-Low). In comparison to the site-specific EQC developed, sediments were also below these EQC values (Att12_Marine Sediment Quality Assessment 2023, Section 5, Page 20).

BCH

BCH mapping was undertaken by O2 Marine as part of a broader investigation into the bathymetry, BCH and sediment at DMPA4 (Att2_BCH Survey Report DMPA4 2024, Section 1.2.1, Page 3). The field survey for this investigation was conducted over a period of seven days from 20 – 26 September 2024 within the DMPA4 Detailed Study Area and the ZoHI/ZoMI (refer to Figure 2 and Figure 12 of Attachment 2 (Att2_BCH Survey Report DMPA4 2024, Sections 2.1 and 4.2, Pages 3 and 24)). The results of the BCH assessment of DMPA4 and the ZoHI/ZoMI is detailed below.

Assemblage

Ground truthing revealed a diversity of benthic assemblage types inhabiting sandy sediments across the proposed spoil ground DMPA4, and predicted zones of impact. The dominant classes of BCH observed in underwater video were Sparse to Low Cover Mixed Assemblage (~49%) and Moderate Cover Mixed Assemblage (~23%). Mixed Assemblage classes were filter feeder dominant, comprising of ascidians (*Polycarpa sp., Pyura sp*), sponges (species unidentified), soft (*Alcyonacea, Sinularia sp*) and hard corals, gorgonians (*Juncella fragilis*) and several unidentified species of macroalgae.

Other assemblages of BCH that were observed less frequently included High Cover Mixed Assemblage (~8.8%), Bare Sediment (~8.4%), Sparse to Low Cover Macroalgae (~7.7%). The remaining classes collectively comprised less than 5% of observations, including Sparse to Low Cover Filter Feeders (~2.3%), Moderate Cover Filter Feeders (~0.2%) and Moderate and Sparse to Low Cover Seagrass (~0.3%, <0.1%). Seagrasses were small ephemerals (*Halopola ovalis*) with low to moderate cover, as were macroalgae (e.g. *Padina*).

While BCH classes appeared clustered in areas, there were no obvious patterns in the distribution of any particular assemblage type in towed video data. The lack of clear patterns in BCH distribution reflects a similar lack of apparent feature in the sidescan or backscatter data, suggesting the seafloor is comprised of a homogenous substrate. (Att2_BCH Survey Report DMPA4 2024, Section 4.2, Pages 19-27).

Distribution

Two mapping classifications were assigned to DMPA4. Overall, the towed video transects indicated a heterogenous pattern of BCH types and cover, not revealing any clear correlation with observable changes in bathymetry or substrate type. BCH types and levels of cover are likely to be more closely associated with minor differences in substrate form and the depth of unconsolidated sediments. Despite the observed

heterogeneity of BCH types and cover across the area, filter feeders were largely dominant throughout. As such, DMPA4 can be characterized by a sparse to moderate cover mixed assemblage predominantly comprised of sessile filter feeders (including soft corals, gorgonians, sponges, hydroids, and ascidians), alongside varying covers of subdominant species such as macroalgae, hard corals, and ephemeral seagrass. While other classes and densities of BCH were noted within the survey area, it was not feasible to further refine the classification or accurately represent the level of heterogeneity. Analysis of elevation and terrain in the MBES data allows delineation of areas unconsolidated sediments (~15.2%) from areas of low-profile reef covered by a sediment veneer (~84.8%) (Att2_BCH Survey Report DMPA4 2024, Section 4.3.1, Pages 28-30).

Towed video transects from across the predicted zones of impact reveal a continuation of the filter feeder-dominant habitat observed within DMPA4 and the Detailed Study Area. The spatial distribution of low-profile reef features could not be mapped with the same level of confidence as in the Detailed Study Area, however observations of similar biota and levels of cover infer a similar mix of substrate types, including unconsolidated sediment, and sand-veneered low-profile reef. As such, ‘Sparse to Moderate Filter Feeders’ was assigned as the classification for the zones of impact (Att2_BCH Survey Report DMPA4 2024, Section 4.3.2, Pages 28-30).

Discussion

Bathymetric data indicates minimal depth variation of less than 2 m (ranging from -20.2 m to -21.6 m) across the Detailed Study Area. Several small ridges, with approximately 0.3 m elevation changes, suggest the potential existence of low-profile reefs (limestone pavement) beneath the sandy substrate. This possibility is further supported by the presence of certain organisms which typically require hard substrates, such as hard corals and macroalgae (Att2_BCH Survey Report DMPA4 2024, Section 5, Page 31). Low-profile reefs are recognized as significant features that support various marine organisms by providing hard substrates for filter feeders like sponges and soft corals. Surveys conducted by UWA (2009) found that sand-inundated reefs generally supported less dense sponge assemblages, aligning with the dominant observation of sparse to low cover assemblages throughout DMPA4. Since only sand was observed in the towed video transects, the presence of low-profile reefs can only be inferred. However, based on the observed terrain and existing knowledge the prevalence of this type of morphology in this region (Scott et al., 2006; UWA, 2009), this is likely accurate (Att2_BCH Survey Report DMPA4 2024, Section 5, Page 31).

At a fine scale (meters), the BCH types and densities across towed video transects displayed a reasonably heterogenous pattern not showing any clear correlation with detectable changes in bathymetry or boundaries in assemblage extent, therefore BCH types and densities may be more closely associated with minor differences in substrate form and the depth of unconsolidated sediments. Overall, however, DMPA4 can be characterised as a relatively homogenous habitat, supporting a sparse to moderate cover mixed assemblage predominantly comprised of sessile filter feeders (including soft corals, gorgonians, sponges, hydroids, and ascidians), alongside varying cover of subdominant species such as macroalgae, hard corals, and ephemeral seagrass. Such sessile filter feeder assemblages are typical of sand-veneered and exposed pavements, which are prevalent on the inner North West Shelf and represent one of the most widespread BCH types in the Pilbara region (Chevron, 2014). Whilst the spatial distribution of unconsolidated sediment and sand-veneered low-profile reef could not be mapped within the zones of impact, towed video collected across these areas reveals the continued presence of filter-feeder dominant assemblages with predominantly sparse to moderate levels of cover (Att2_BCH Survey Report DMPA4 2024, Section 5, Page 31).

3.3 Heritage

3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

There are no Commonwealth Heritage places or other places recognised as having heritage values relevant to the Proposed Action (Att8_PMST Report DMPA4_241022, Page 2).

3.3.2 Describe any Indigenous heritage values that apply to the project area.

The Project Area is situated in WA State marine waters, approximately 13.5 NM from the mainland. Review of the Aboriginal Cultural Heritage Inquiry System indicates there are no registered or other Aboriginal Cultural Heritage sites in the vicinity of the DMPA4, including the vessel route (DPLH, 2024).

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

Water Quality

The following information has been obtained from the DSDMP (Att4_DSDMP 2024, Section 2.5, Pages 21-22).

Nearshore waters typical of this region are characterised by variable turbidity and high sedimentation rates, with associated highly variable light regimes and seawater temperatures. Offshore waters exhibit fewer extremes in the water quality, but still display occasional high levels of sedimentation and turbidity, low light

and variable seawater temperatures (Pearce *et al*, 2003).

Light, turbidity, seawater temperature and sedimentation rates are typically weather dependent and show a strong seasonal transition from the dry to the wet seasons. Large daily tidal ranges (>5 m), strong winds (gusts >50 km/h) and increased wave activity (such as associated with cyclonic activity) can impact background conditions resulting in increased turbidity (in the form of increase suspended sediment concentration (SSC)) due to coastal runoff and wind/wave driven sediment resuspension. In summary, waters in the vicinity of the Project Area are subject to naturally elevated levels of turbidity and a reduced light climate heavily influenced by discrete weather events (Pearce *et al*, 2003).

O2 Marine (2020) identified the following from marine water quality baseline studies conducted at the Mardie Project study area:

- Salinity levels recorded a median value of 37.5 ppt, and appeared to be indicative of a sheltered bay, which was thought to be due to the influence of the Passage Islands which act as a natural barrier and appear to restrict mixing with lower salinity oceanic waters.
- Turbidity and SSC were found to be higher at the inshore monitoring location than at the offshore location, which is consistent with other Pilbara water quality investigations (Jones *et al*., 2019; MScience, 2009; Pearce et al., 2003).
- Derived Daily light Integral (DLI) around the coastal islands was highest during wet season and lowest during the dry season and correlated with seasonal change in solar elevation angle, which is a primary factor influencing the amount of available benthic light in these areas. Conversely, DLI was low year-round at the inshore location (i.e., dredging area). Factors influencing benthic light levels are different between the islands and dredging area. However, the lowest light levels in both areas corresponded closely with high SSC and turbidity levels, associated with the passing of several Tropical Cyclones and low-pressure systems over the sampling period.
- Importantly, the EPA (2021c) SSC and DLI thresholds for *possible* and *probable* effects on coral were found to be poorly suited as criteria for monitoring dredging effects in the Mardie Project area. Frequent natural exceedances of SSC and DLI thresholds indicates that these thresholds are unsuitable for use as water quality and dredge activity monitoring criteria in the Mardie Project area. It is noted that EPA (2021c) recognises these potential limitations of the thresholds and advises that WAMSI is in the process of developing thresholds for turbid water coral communities. Once these new turbid water thresholds are available, they should be evaluated against the baseline data collected in this program and as part of the pre-dredging baseline to determine suitability for use in dredge monitoring.
- Laboratory analysis of marine water samples showed no evidence of contamination and the current allocation of maximum and high levels of ecological protection are appropriate for the marine waters of the Mardie Project area.

Waves

The following information has been obtained from the DSDMP (Att4_DSDMP 2024, Section 2.2.3, Page 12).

The northwest shelf of WA experiences waves generated from three primary sources: Indian Ocean swell, locally generated wind-waves and tropical cyclone waves. Along the shoreline the ambient (non-cyclonic) wave climate is generally mild. In dry season months low amplitude swell originating in the Indian Ocean propagates to the site and occurs in conjunction with locally generated sea waves of short period (<5s). In the wet season the wave climate is locally generated sea waves from the south to southwest. In general, the significant wave height is dominated by locally generated sea conditions within the range of 0.5m to 1m at short wave periods (Tp< 5 s). Measured data from an ADCP instrument deployed approximately 15 km offshore for the Mardie Project has been analysed to characterise the wave conditions in the wet and dry seasons.

Whilst the non-cyclonic ambient wave conditions are generally mild, in contrast the strong winds in a tropical cyclone can generate extreme wave conditions. It is noted that the offshore island features would provide some natural protection form extreme wave conditions depending on the direction of propagation. Extreme cyclonic waves contribute to the total water level through wave run-up which is the maximum vertical extent of wave uprush on a beach and is comprised both wave set-up and swash. The impact of cyclonic waves on the study site is dependent on the prevailing water level conditions and direction of cyclone approach.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	Yes	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No World Heritage sites occur within or in proximity to the Proposed Action.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No National Heritage sites occur within or in proximity to the Proposed Action.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Ramsar Wetlands occur within or in proximity to the Proposed Action.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species	Common name
No	No	Aipysurus apraefrontalis	Short-nosed Sea Snake, Short-nosed Seasnake
No	No	Aipysurus foliosquama	Leaf-scaled Sea Snake, Leaf-scaled Seasnake
No	Yes	Balaenoptera musculus	Blue Whale
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris canutus	Red Knot, Knot
No	No	Calidris ferruginea	Curlew Sandpiper
No	Yes	Carcharias taurus (west coast population)	Grey Nurse Shark (west coast population)
No	Yes	Carcharodon carcharias	White Shark, Great White Shark
Yes	Yes	Caretta caretta	Loggerhead Turtle
Yes	Yes	Chelonia mydas	Green Turtle
Yes	Yes	Dermochelys coriacea	Leatherback Turtle, Leathery Turtle, Luth
Yes	Yes	Eretmochelys imbricata	Hawksbill Turtle
No	No	Macronectes giganteus	Southern Giant-Petrel, Southern Giant Petrel
Yes	Yes	Natator depressus	Flatback Turtle
No	No	Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew
No	No	Phaethon lepturus fulvus	Christmas Island White-tailed Tropicbird, Golden Bosunbird
No	No	Phaethon rubricauda westralis	Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird
No	Yes	Pristis clavata	Dwarf Sawfish, Queensland Sawfish
No	No	Pristis pristis	Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish

Direct impact	Indirect impact	Species	Common name
No	Yes	Pristis zijsron	Green Sawfish, Dindagubba, Narrowsnout Sawfish
No	Yes	Rhincodon typus	Whale Shark
No	Yes	Sphyrna lewini	Scalloped Hammerhead
No	No	Sternula nereis nereis	Australian Fairy Tern

Ecological communities

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4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

The Proposed Action is to dispose of up to 355,000 m3 (including 10% over dredge) of dredge material into DMPA4. The disposal will result in the direct loss of BCH where the material is dumped, as well as the loss or temporary impact of BCH within areas affected by sedimentation in the water column.

Modelling results show that the plume generated by disposal of sediments at the DMPA4 site result in both the ZoMI and ZoHI plumes being confined to deep waters (>16m). It can be noted the plumes extend from the DMPA4 in a general northeast-southwest direction, which mimics the movement of the tidal flow, averaging a 1-1.5 knot velocity, in this area. The plumes do not pass through any of the sensitive marine areas shown in the AHO chart (Att3_DMPA4 Dredge Plume Modelling 2024, Page 10).

The overall map of the dredge spoil plume impact area that exceeds the WAMSI thresholds was determined using 80th percentile (P80) background suspended sediment concentration (SSC) for the DMPA4 location is shown in Figure 7 of the Dredge plume model report (Att3_DMPA4 Dredge Plume Modelling 2024, Figure 7, Page 10). This presents the ZoMI and ZoHI for the representative model run period based on the release of dredge spoil from a 1,200 m3 capacity split hull hopper barge. DMPA4 has an area of 30.3 ha, and the dumping will result in a maximum ZoHI (P80) of 385 ha (incorporating DMPA4) and ZoMI (P80) of 720 ha. It is noted that the ZoHI/ZoMI area differs slightly from the Baird report, due to Baird's use of an older coordinate reference system for calculating areas.

Potential direct and indirect impacts to environmental values (including threatened species) as a result of the transporting and disposal of dredge material in DMPA4 are summarised below.

Direct Impacts:

- BCH: Direct permanent loss of 4.61 ha sparse to moderate filter feeders on unconsolidated sediment and 25.65 ha of sparse to moderate filter feeder on low profile reed with sand veneer within DMPA4;
- Disturbance, injury or death of marine fauna as a result of disposal operations;
- Injury or death of marine fauna due to vessel movement (strike);
- Injury or alteration of behaviour from underwater noise from dredging operations; and
- Alteration of behaviour from artificial light from vessels during dredging and disposal.

Indirect Impacts:

- BCH: Indirect permanent loss of 355 ha of sparse to moderate filter feeders within the ZoHI, and indirect recoverable impact of 720 ha of sparse to moderate filter feeders within the ZoMI;
- Indirect impacts on marine fauna habitat through decreased water quality; and
- Introduced Marine Pests (IMP) translocation from construction or operational vessels.

DMPA4 is situated offshore, and 23 listed threatened species were identified in the PMST Report as potentially occurring within DMPA4 and the surrounding 10 km (Att8_PMST Report DMPA4_241022, Pages 3-5). No threatened ecological communities occur within or in proximity to the Proposed Action, and as such are not discussed further in this referral.

Key threatened species identified in the PMST Report (Att8_PMST Report DMPA4_241022, Pages 3-5) that may be directly and/or indirectly impacted by the Proposed Action are listed below. Species that are predominantly associated with coastal areas (such as shorebirds) and coral (seasnakes) have not been included due to the lack of impacts in those areas.

- Blue Whale (*Balaenoptera musculus*; Endangered);
- Loggerhead Turtle (*Caretta caretta*; Endangered);
- Green Turtle (*Chelonia mydas*; Vulnerable);
- Leatherback Turtle (*Dermochelys coriacea*; Endangered);
- Hawksbill Turtle (*Eretmochelys imbricata*; Vulnerable);
- Flatback Turtle (*Natator depressus*; Vulnerable);
- Green Sawfish (*Pristis zijsron*; Vulnerable);
- Dwarf sawfish (*Pristis clavate*; Vulnerable);
- Grey Nurse Shark (West Coast population) (*Carcharias taurus*; Vulnerable);
- Great White Shark (*Carcharodon carcharias*; Vulnerable);
- Whale Shark (*Rhincodon typus*; Vulnerable); and
- Scalloped Hammerhead (*Sphyrna lewini*; Conservation Dependent).

Biologically Important Areas (BIAs) for Turtles were identified within the DMPA4 area and the surrounding 10 km. This included Green Turtle, Hawksbill Turtle and Flatback Turtle foraging habitat, and Hawksbill Turtle inter-nesting (buffer) (Att8_PMST Report DMPA4_241022, Page 17).

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

There are limited BCH values within DMPA4 and the ZoMI/ZoHI, and as such it is unlikely that these areas provide important habitat for the threatened species identified. There are also industry best-practice mitigation measures proposed to address the direct and indirect impacts, particularly for vessel movement between the loading facilities and DMPA4, and dumping within DMPA4 (discussed in Section 4.1.4.10). These monitoring and management measures will minimise the likelihood of impacts such that they are no longer considered significant.

The mitigation actions required to protect environmental values, including marine fauna, from dredge material disposal activities are detailed within the DSDMP (Att4_DSDMP 2024, Section 6, Pages 41-54). This plan takes a precautionary approach and includes the measures summarised in Section 4.1.4.10.

An assessment was made against the Significant Impact Guidelines 1.1 (DotE, 2013) to determine whether the impacts identified can be considered as significant, which is discussed below in the sections below. The criteria for Vulnerable species often use the term ‘important population’, whereas Endangered/ Critically Endangered species use ‘population’.

Lead to a long-term decrease in the size of a population/important population of a species

The Proposed Action is a short-term activity (several months) that has specifically been located in an area with BCH that is not unique or important to any MNES species. MNES species are therefore likely to be traversing the site rather than residing within it. Strict management measures are proposed to ensure that any impacts to MNES that may be present are minimised. These measures are predicted to result in no long-term decreases in the size of a MNES population.

Reduce the area of occupancy of the species/important population

The Proposed Action will impact an area that will remain within the area of occupancy at the completion of the action, it will not result in any long-term reductions for any MNES populations.

Fragment an existing population/important population into two or more populations

The Proposed Action will not result in any fragmentation of habitat as MNES species will be able to freely pass through the area.

Adversely affect habitat critical to the survival of a species

No habitat critical to the survival of any MNES species is present at the Proposal Action.

Disrupt the breeding cycle of a population/important population

Specific mitigation measures are proposed to prevent any disruptions to the breeding cycle of MNES species. Refer to Section 4.1.4.10.

Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

The Proposed Action will result in temporary and permanent impacts to BCH within the ZoMI and ZoHI respectively. These impacts are however within an area that is only traversed by MNES species, with no likely residents. As such the Proposed Action is unlikely to result in impacts that would cause any MNES species to decline.

Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species habitat (or vulnerable species in vulnerable species habitat)

The Proposed Action has the potential to result in IMPs being established, however the implementation of controls (refer to Section 4.1.4.10) is predicted to minimise the risks such that this outcome would be extremely unlikely.

Introduce disease that may cause the species to decline

The Proposed Action is not predicted to provide any vectors for disease.

Interfere (substantially) with the recovery of the species

As discussed above, the Proposed Action is considered unlikely to interfere with the recovery of any MNES species.

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

The Proposed Action has a limited number of potential impact pathways, all of which can be appropriately managed by Sea Dumping Permit conditions and through the implementation of the DSDMP. It is predicted that a decision of 'not a controlled action – particular manner' would be appropriate in this case, with a condition requiring the implementation of the DSDMP and other vessel strike prevention measures (described in Section 4.1.4.10).

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Avoidance and mitigation measures are detailed within the DSDMP (Att4_DSDMP 2024, Section 6, Pages 41-54). The DSDMP will be implemented to ensure residual impacts to threatened species potentially occurring within the Project Area are not significant. Some of the avoidance and mitigation measures included within the DSDMP are summarised below:

- Pre- and post-dredge bathymetric surveys;
- Scheduling to avoid key ecological windows (1 October - 31 March);
- Marine water quality monitoring;
- BCH monitoring;
- Monitoring and management zones;
- Noise management protocols and procedures:
    - When in transit, all Project vessels will be operated in accordance with EPBC Regulations 2000- Part 8 Division 8.1;
    - Minimise the duration of run-time for vessel engines, thrusters and dredging plant by avoiding stand-by or running mode to the degree practical and consistent with safe operations;
- Dredge spoil or vessel strike avoidance strategies:
    - Dedicated Marine Fauna Observers (MFOs) on all dredges/barges during humpback whale season (June to November) including transit to Spoil Ground DMPA4;
    - Report any injured or deceased marine fauna (whale, dugong, turtle, manta ray or dolphin, fish) or indications of coral mass spawning on the Project Area;
    - Vessels to operate at a safe speed to avoid interaction with marine fauna at all times within Project boundaries. Vessels of at least 20 m in length will not exceed the maximum speed of 8 knots within port operational waters and 12 knots outside port operational waters. All vessels operated for the Project will not exceed 8 knots within 500 m of any identified cetacean, dugong, or marine turtle;
- Chemical / oil spill controls:
    - All vessel equipment to be designed and operated to prevent spills and leaks through the provision of in-built safeguards such as, but not limited to, relief valves, overflow protection, and automatic and manual shut-down systems;
- Recording and reporting requirements;

- IMP control measures:
    - All relevant vessels should comply with Commonwealth Department of Agriculture and Water Resources – Australian Ballast Water Management Requirements, the National Biofouling Management Guidelines for commercial vessels; and
    - All vessels that mobilise to the Project Area are required to complete the WA DPIRD's 'Vessel Check' risk assessment (https://vesselcheck.fish.wa.gov.au).

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No offsets are proposed, as the impacts from the Proposed Action will not be significant following avoidance and mitigation measures.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species	Common name
No	No	Actitis hypoleucos	Common Sandpiper
No	No	Anous stolidus	Common Noddy
No	Yes	Anoxypristis cuspidata	Narrow Sawfish, Knifetooth Sawfish
No	Yes	Balaenoptera edeni	Bryde's Whale
No	Yes	Balaenoptera musculus	Blue Whale
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris canutus	Red Knot, Knot
No	No	Calidris ferruginea	Curlew Sandpiper

Direct impact	Indirect impact	Species	Common name
No	No	Calidris melanotos	Pectoral Sandpiper
No	No	Calonectris leucomelas	Streaked Shearwater
No	Yes	Carcharhinus longimanus	Oceanic Whitetip Shark
No	Yes	Carcharias taurus	Grey Nurse Shark
No	Yes	Carcharodon carcharias	White Shark, Great White Shark
Yes	Yes	Caretta caretta	Loggerhead Turtle
Yes	Yes	Chelonia mydas	Green Turtle
Yes	Yes	Crocodylus porosus	Salt-water Crocodile, Estuarine Crocodile
Yes	Yes	Dermochelys coriacea	Leatherback Turtle, Leathery Turtle, Luth
Yes	Yes	Dugong dugon	Dugong
Yes	Yes	Eretmochelys imbricata	Hawksbill Turtle
No	No	Fregata ariel	Lesser Frigatebird, Least Frigatebird
No	No	Macronectes giganteus	Southern Giant-Petrel, Southern Giant Petrel
Yes	Yes	Megaptera novaeangliae	Humpback Whale
Yes	Yes	Mobula alfredi	Reef Manta Ray, Coastal Manta Ray
Yes	Yes	Mobula birostris	Giant Manta Ray
Yes	Yes	Natator depressus	Flatback Turtle
No	No	Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew
Yes	Yes	Orcaella heinsohni	Australian Snubfin Dolphin
No	Yes	Orcinus orca	Killer Whale, Orca
No	No	Phaethon lepturus	White-tailed Tropicbird
No	Yes	Pristis clavata	Dwarf Sawfish, Queensland Sawfish
No	No	Pristis pristis	Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish
No	Yes	Pristis zijsron	Green Sawfish, Dindagubba, Narrowsnout Sawfish
No	Yes	Rhincodon typus	Whale Shark

Direct impact	Indirect impact	Species	Common name
Yes	Yes	Sousa sahulensis	Australian Humpback Dolphin
No	No	Sterna dougallii	Roseate Tern
Yes	Yes	Tursiops aduncus (Arafura/Timor Sea populations)	Spotted Bottlenose Dolphin (Arafura/Timor Sea populations)

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.5.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

The Proposed Action is to dispose of up to 355,000 m3 (including 10% over dredge) of dredge material into DMPA4. The disposal will result in the direct loss of BCH where the material is dumped, as well as the loss or temporary impact of BCH within areas affected by sedimentation in the water column.

Modelling results show that the plume generated by disposal of sediments at the DMPA4 site result in both the ZoMI and ZoHI plumes being confined to deep waters (>16m). It can be noted the plumes extend from the DMPA4 in a general northeast-southwest direction, which mimics the movement of the tidal flow, averaging a 1-1.5 knot velocity, in this area. The plumes do not pass through any of the sensitive marine areas shown in the AHO chart (Att3_DMPA4 Dredge Plume Modelling 2024, Page 10).

The overall map of the dredge spoil plume impact area that exceeds the WAMSI thresholds was determined using 80th percentile (P80) background suspended sediment concentration (SSC) for the DMPA4 location is shown in Figure 7 of the dredge plume model report (Att3_DMPA4 Dredge Plume Modelling 2024, Figure 7, Page 10). This presents the ZoHI and ZoMI for the representative model run period based on the release of dredge spoil from a 1,200 m3 capacity split hull hopper barge. DMPA4 has an area of 30.3 ha, and the dumping will result in a maximum ZoHI (P80) of 385 ha (incorporating DMPA4) and ZoMI (P80) of 720 ha. It is noted that the ZoHI/ZoMI area differs slightly from the Baird report, due to Baird's use of an older coordinate reference system for calculating areas.

Potential direct and indirect impacts to environmental values (including migratory species) as a result of the transporting and disposal of dredge material in DMPA4 are summarised below.

Direct Impacts:

- BCH: Direct permanent loss of 4.61 ha sparse to moderate filter feeders on unconsolidated sediment and 25.65 ha of sparse to moderate filter feeder on low profile reed with sand veneer within DMPA4;
- Disturbance, injury or death of marine fauna as a result of disposal operations;
- Injury or death of marine fauna due to vessel movement (strike);
- Injury or alteration of behaviour from underwater noise from dredging operations; and
- Alteration of behaviour from artificial light from vessels during dredging and disposal.

Indirect Impacts:

- BCH: Indirect permanent loss of 355 ha of sparse to moderate filter feeders within the ZoHI, and indirect recoverable impact of 720 ha of sparse to moderate filter feeders within the ZoMI;

- Indirect impacts on marine fauna habitat through decreased water quality; and
- IMP translocation from construction or operational vessels.

Within DMPA4, 36 listed migratory species were identified in the PMST Report (Att8_PMST Report DMPA4_241022, Pages 5-8). Key migratory species identified in the PMST Report (Att8_ PMST Report DMPA4_241022, Pages 5-8) that may be directly and indirectly impacted by the Proposed Action are listed below. Migratory species that are also listed as threatened species have not been included in this section, as they have already been discussed under 'Threatened Species and Ecological Communities'. Species that are predominantly associated with coastal areas (such as shorebirds) have not been included due to the lack of impacts in those areas.

- Dugong (*Dugong dugon*);
- Humpback Whale (*Megaptera novaeangilae*);
- Salt-water Crocodile (*Crocodylus porosus*);
- Reef Manta Ray (*Mobula alfredi* as *Manta alfredi*);
- Giant Manta Ray (*Mobula birostris as Manta birostris*);
- Australian Snubfin Dolphin (*Orcaella heinsohni*);
- Australian Humpback Dolphin (*Sousa sahulensis* as *Sousa chinensis*); and
- Indo-Pacific Bottlenose Dolphin (*Tursiops aduncus* (Arafura/Timor Sea populations)).

A BIA for Humpback Whale migration (north and south) was identified within the DMPA4 area and the surrounding 10 km (Att8_PMST Report DMPA4_241022, Page 18). During northern and southern migration humpback whales likely to be present within the vicinity of DMPA4. During the southern migration, humpback whale mother-calf pairs are most likely to utilise inshore waters thus representing the most sensitive time where they could be impacted by dredging activities. Dredge material disposal will avoid these ecological windows.

4.1.5.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.5.6 Describe why you do not consider this to be a Significant Impact. *

There are limited BCH values within DMPA4 and the ZoMI/ZoHI, and as such it is unlikely that these areas provide important habitat for the migratory species identified. There are also industry best-practice mitigation measures proposed to address the direct and indirect impacts, particularly for vessel movement between the loading facilities and DMPA4, and dumping within DMPA4 (discussed in Section 4.1.5.10). These monitoring and management measures will minimise the likelihood of impacts such that they are no longer considered significant.

The mitigation actions required to protect environmental values, including marine fauna, from dredge material disposal activities are detailed within the DSDMP (Att4_DSDMP 2024, Section 6, Pages 41-54). This plan takes a precautionary approach and includes the measures summarised in Section 4.1.5.10.

An assessment was made against the Significant Impact Guidelines 1.1 (DotE, 2013) to determine whether the impacts identified can be considered as significant, which is discussed in the sections below.

Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species

No important habitat for any MNES species is present at the Proposal Action.

Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species

The Proposed Action has the potential to result in IMPs being established, however the implementation of controls (refer to Section 4.1.5.10) is predicted to minimise the risks such that this outcome would be extremely unlikely.

Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species

Specific mitigation measures are proposed to prevent any disruptions to the breeding cycle of MNES species. Refer to Section 4.1.5.10. With the implementation of these controls it is considered unlikely that the Proposed Action would disrupt the lifecycle of any migratory species.

4.1.5.7 Do you think your proposed action is a controlled action? *

No

4.1.5.9 Please elaborate why you do not think your proposed action is a controlled action. *

The Proposed Action has a limited number of potential impact pathways, all of which can be appropriately managed. The Proposed Action will not be a controlled action as it will be subject to Sea Dumping Permit conditions and through the implementation of the DSDMP. It is predicted that a decision of 'not a controlled action – particular manner' would be appropriate in this case, with a condition requiring the implementation of the DSDMP and other vessel strike prevention measures (described in Section 4.1.5.10).

Modelling results show that the plume generated by disposal of sediments at the DMPA4 site result in both the ZoMI and ZoHI plumes being confined to deep waters (>16m). It can be noted the plumes extend from the DMPA4 in a general northeast-southwest direction, which mimics the movement of the tidal flow, averaging a 1-1.5 knot velocity, in this area. The plumes do not pass through any of the sensitive marine areas shown in the AHO chart (Att3_DMPA4 Dredge Plume Modelling 2024, Page 10).

Given the information above, impacts to EPBC-listed fauna habitat are minor in the context of the wider Pilbara region, and indirect impacts will be minimised through design elements, adherence to Sea Dumping Permit conditions and the development and implementation of a DSDMP.

4.1.5.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Avoidance and mitigation measures are detailed within the DSDMP (Att4_DSDMP 2024, Section 6, Pages 41-54). The DSDMP will be implemented to ensure residual impacts to migratory species potentially occurring within the Project Area are not significant. Some of the avoidance and mitigation measures included within the DSDMP are summarised below:

- Pre- and post-dredge bathymetric surveys;
- Scheduling to avoid key ecological windows (1 October - 31 March);
- Marine water quality monitoring;
- BCH monitoring;
- Monitoring and management zones;
- Noise management protocols and procedures:
    - When in transit, all Project vessels will be operated in accordance with EPBC Regulations 2000- Part 8 Division 8.1;
    - Minimise the duration of run-time for vessel engines, thrusters and dredging plant by avoiding stand-by or running mode to the degree practical and consistent with safe operations;

- Dredge spoil or vessel strike avoidance strategies:
    - Dedicated MFOs on all dredges/barges during humpback whale season (June to November) including transit to Spoil Ground DMPA4;
    - Report any injured or deceased marine fauna (whale, dugong, turtle, manta ray or dolphin, fish) or indications of coral mass spawning on the Project Area;
    - Vessels to operate at a safe speed to avoid interaction with marine fauna at all times within Project boundaries. Vessels of at least 20 m in length will not exceed the maximum speed of 8 knots within port operational waters and 12 knots outside port operational waters. All vessels operated for the Project will not exceed 8 knots within 500 m of any identified cetacean, dugong, or marine turtle;
- Chemical / oil spill controls:
    - All vessel equipment to be designed and operated to prevent spills and leaks through the provision of in-built safeguards such as, but not limited to, relief valves, overflow protection, and automatic and manual shut-down systems;
- Recording and reporting requirements;
- IMP control measures:
    - All relevant vessels should comply with Commonwealth Department of Agriculture and Water Resources – Australian Ballast Water Management Requirements, the National Biofouling Management Guidelines for commercial vessels; and
    - All vessels that mobilise to the Project Area are required to complete the WA DPIRD's 'Vessel Check' risk assessment (https://vesselcheck.fish.wa.gov.au).

4.1.5.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No offsets are proposed, as the impacts from the Proposed Action will not be significant following avoidance and mitigation measures.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action does not include any actions that would involve nuclear impacts.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is located entirely within WA State Marine Waters and is not within any Commonwealth Marine Areas.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is in WA.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not a coal mining or coal seam gas development.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action will not occur within Commonwealth Land. The Proposed Action is entirely within WA State marine waters.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is located in WA. No activity is being proposed in any places overseas.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)

- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

The approved disposal method under Condition 36(g) of (EPBC 2018/8236 and EPBC 2022/9169) is onshore disposal. However, following engagement with the market following the EPBC referral it was found that onshore disposal would be technically challenging, due to the shallow water depths inshore and associated long slurry pumping distance.

Of most concern was the likely impacts to *Minuria tridens* (Vulnerable) that occupy portions of the land-based dredge disposal areas.

Condition 10 of EPBC 2018/8236 states:

- “The approval holder must not harm any *Minuria tridens* within the development envelope from the 23 June 2023 until the completion of the Action.”

Condition 10 of EPBC 2022/9169 states:

- “The approval holder must not harm any *Minuria tridens* within the development envelope from the date of this approval and until the completion of the Action”.

Mardie Minerals evaluated several design options and contracting strategies to address challenges associated with onshore disposal. However, the challenges identified above remained. None of the dredging contractors approached to tender for the dredging works were supportive of the proposed onshore disposal approach.

As a result of the above considerations, offshore disposal was considered the preferred disposal method.

Several offshore disposal sites have been identified and investigated for this Proposed Action, including:

- Spoil Ground E;
- DMPA1;
- DMPA2; and
- DMPA3.

Spoil Ground E was identified as a potential spoil disposal area, which was previously used for the Chevron Wheatstone Project as a spoil disposal site (Chevron, 2016). Spoil Ground E is situated in Commonwealth Marine Waters, approximately 120 km (65 NM) southwest of the Mardie Project. Due to the extensive travel distance between the dredging location and Spoil Ground E (over 80 NM), it was not considered to be a viable option.

Several offshore disposal sites closer to the Mardie Project (within approximately 14.5 NM) were investigated by Baird (Att3_DMPA4 Dredge Plume Modelling 2024, Figure 1, Page 1). DMPA4 was identified during a 2022 reconnaissance survey as a possible spoil disposal area. Compared to other investigated disposal sites, DMPA4 is positioned further away from Sholl Island and other reef systems containing key BCH receptors, therefore offering a lower risk proposition from potential effects on BCH associated with dredge spoil disposal (Att2_BCH Survey Report DMPA4 2024, Section 1.2.1, Page 1).

In order to determine the most suitable disposal location, Baird was engaged to undertake spoil ground disposal plume modelling for two sites; DMPA1 (Att13_DMPA1 Dredge Plume Modelling 2024) and DMPA4 (Att3_DMPA4 Dredge Plume Modelling 2024, Page 10). A comparison of the extent of the sediment plumes resulting from Baird's offshore disposal modelling at DMPA1 (first pass and second pass) and DMPA4 was undertaken. Analysis using GIS was performed and the differences in area measurements presented. In summary, the extent of the sediment plumes resulting from offshore disposal at DMPA4 were at least 53% lower when compared with the plumes at the two DMPA1 option sites (Att3_DMPA4 Dredge Plume Modelling 2024, Page 10).

DMPA4 was chosen as the preferred disposal location as it is close to the Mardie Project, it is located further from Sholl Island and sensitive areas than other sites, and it was considered unlikely that the BCH within the Disturbance Footprint (direct and indirect) would have particular regional or conservation significance compared to other areas within the Mardie and Pilbara region, where higher BCH cover and diversities are observed (Att2_BCH Survey Report DMPA4 2024, Section 6, Page 26).

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att1_Figures_1_250124.pdf Figures	24/01/2025	No	High
#2.	Document	Att1_Figures_1_250124.pdf Figures	23/01/2025	No	High
#3.	Document	Att1_Figures_1_250124.pdf Figures	23/01/2025	No	High
#4.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	13/11/2024	No	High
#5.	Document	Att3_DMPA4 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA4	20/09/2024	No	High
#6.	Document	Att3_DMPA4 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA4	19/09/2024	No	High
#7.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	09/12/2024	No	High

#8.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High
#9.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High

1.2.6 Commonwealth or state legislation, planning frameworks or policy documents that are relevant to the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	Environmental Impact Assessment (Part IV Divisions 1 & 2) Procedures Manual Requirements https://www.epa.wa.gov.au/sites/default/files/Po..			High
#2.	Link	Matters of National Environmental Significance – Significant impact guidelines 1.1 https://www.dcceew.gov.au/environment/epbc/publi..			High
#3.	Link	Statement of environmental principles, factors, objectives and aims of EIA https://www.epa.wa.gov.au/sites/default/files/Po..			High

1.2.7 Public consultation regarding the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att5_Stakeholder Consultation Register_1_250124.pdf Stakeholder Consultation Register	24/01/2025	No	High

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att6_BCI Environmental Policy 2022.pdf Environment Policy	22/01/2022	No	High
#2.	Document	Att7_Mardie Project ESMP.pdf Environmental and Social Management Plan	24/02/2022	No	High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#2.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#3.	Document				

		Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	High	
#4.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#5.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High

3.1.3 Natural features, important or unique values that applies to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#2.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#3.	Document	Att8_PMST Report DMPA4_241022.pdf Protected Matters Report	22/10/2024	No	High

3.1.4 Gradient relevant to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#2.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#3.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att10_Marine Turtle Monitoring Program 2023.pdf Marine Turtle Monitoring Program	06/07/2023	No	High
#2.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High
#3.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High
#4.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High
#5.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High

#6.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	High
#7.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	High
#8.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	High
#9.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	High
#10.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	High
#11.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	High
#12.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	High
#13.	Document	Att9_Marine Fauna Review 2020.pdf Marine Fauna Report	23/04/2020	High
#14.	Link	A Description of Mega Fauna Distribution and Abundance in the SW Pilbara Using Aerial and Acoustic.. https://www.epa.wa.gov.au/sites/default/files/Pr..	31/05/2010	High
#15.	Link	A Description of Mega Fauna Distribution and Abundance in the SW Pilbara Using Aerial and Acoustic.. https://www.epa.wa.gov.au/sites/default/files/Pr..	31/05/2010	High
#16.	Link	A Description of Mega Fauna Distribution and Abundance in the SW Pilbara Using Aerial and Acoustic.. https://www.epa.wa.gov.au/sites/default/files/Pr..	31/05/2010	High
#17.	Link	Demographic characteristics of Australian humpback dolphins reveal important habitat toward the ... https://www.researchgate.net/publication/3097550..	01/02/2017	High

#18.	Link	Dolphin Distribution and Habitat Suitability in North Western Australia: Applications and ... https://www.frontiersin.org/journals/marine-scie..	14/02/2022	High
#19.	Link	Mardie Project Environmental Scoping Document https://www.epa.wa.gov.au/sites/default/files/En..	28/11/2018	High
#20.	Link	Prioritising search effort to locate previously unknown populations of endangered marine reptiles https://www.sciencedirect.com/science/article/pi..	01/06/2020	High
#21.	Link	Prioritising search effort to locate previously unknown populations of endangered marine reptiles. https://www.sciencedirect.com/science/article/pi..	01/06/2020	High
#22.	Link	Trends in catch rates of sawfish on the Australian North West Shelf. Endangered Species Research https://www.int-res.com/articles/esr2024/53/n053..	01/02/2024	High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att11_Baseline Marine Sediment Assessment 2019.pdf Sediment Quality Assessment	13/06/2019	No	High
#2.	Document	Att11_Baseline Marine Sediment Assessment 2019.pdf Sediment Quality Assessment	12/06/2019	No	High
#3.	Document	Att11_Baseline Marine Sediment Assessment 2019.pdf Sediment Quality Assessment	12/06/2019	No	High
#4.	Document	Att12_Marine Sediment Quality Assessment 2023.pdf Sediment Quality Assessment	20/09/2023	No	High
#5.	Document	Att12_Marine Sediment Quality Assessment 2023.pdf Sediment Quality Assessment	19/09/2023	No	High
#6.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#7.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#8.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#9.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High

#10.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#11.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#12.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#13.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#14.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#15.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High
#16.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High
#17.	Link	Ecosystem characterisation of Australia's North West Shelf https://library.dbca.wa.gov.au/FullTextFiles/064..	01/06/2006		High
#18.	Link	Guidelines for Fresh and Marine Water Quality https://www.ienvi.com.au/revision-to-the-austral..			High
#19.	Link	Matters of National Environmental Significance – Significant impact guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..			High
#20.	Link	Matters of National Environmental Significance – Significant impact guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..			High
#21.	Link	National Assessment Guideline for Dredging https://www.dcceew.gov.au/sites/default/files/do..			High
#22.	Link	National Assessment Guideline for Dredging https://www.dcceew.gov.au/sites/default/files/do..			High
#23.	Link	Wheatstone – Survey of Benthic Habitats near Onslow, Western Australia (15-70 Metres) https://australia.chevron.com/-/media/australia/..	01/11/2009		High
#24.	Link	Wheatstone – Survey of Benthic Habitats near Onslow, Western Australia (15-70 Metres) https://australia.chevron.com/-/media/australia/..	01/11/2009		High

#25.	Link	Wheatstone Project – Trunkline Installation Environmental Monitoring and Management Plan https://australia.chevron.com/-/media/australia/..	30/10/2014	High

3.3.1 Commonwealth heritage places overseas or other places that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att8_PMST Report DMPA4_241022.pdf Protected Matters Report	21/10/2024	No	High

3.3.2 Indigenous heritage values that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	Aboriginal Cultural Heritage Inquiry System https://espatial.dplh.wa.gov.au/ACHIS/index.html..			High

3.4.1 Hydrology characteristics that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High
#2.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High
#3.	Link	A review of the oceanography of the Dampier Archipelago, Western Australia https://www.researchgate.net/publication/2543397..	01/01/2003		High
#4.	Link	A review of the oceanography of the Dampier Archipelago, Western Australia https://www.researchgate.net/publication/2543397..	01/01/2003		High
#5.	Link	A review of the oceanography of the Dampier Archipelago, Western Australia https://www.researchgate.net/publication/2543397..	01/01/2003		High
#6.	Link	Defining thresholds and indicators of coral response to dredging-related pressures. https://wamsi.org.au/wp-content/uploads/bsk-pdf-..	01/03/2019		High
#7.	Link	Mardie Project Marine Water Quality Baseline https://www.epa.wa.gov.au/sites/default/files/PE..	24/03/2020		High

#8.	Link	Technical Guidance – Environmental impact assessment of marine dredging proposals https://www.epa.wa.gov.au/sites/default/files/Po..	01/09/2021	High
#9.	Link	Technical Guidance – Environmental impact assessment of marine dredging proposals https://www.epa.wa.gov.au/sites/default/files/Po..	01/09/2021	High
#10.	Link	Wheatstone LNG Development: Baseline Water Quality Assessment Report https://australia.chevron.com/-/media/australia/..	01/11/2009	High

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att3_DMPA4 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA4	19/09/2024	No	High
#2.	Document	Att3_DMPA4 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA4	19/09/2024	No	High
#3.	Document	Att8_PMST Report DMPA4_241022.pdf Protected Matters Report	21/10/2024	No	High
#4.	Document	Att8_PMST Report DMPA4_241022.pdf Protected Matters Report	21/10/2024	No	High
#5.	Document	Att8_PMST Report DMPA4_241022.pdf Protected Matters Report	21/10/2024	No	High

4.1.4.6 (Threatened Species and Ecological Communities) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High
#2.	Link	Matters of National Environmental Significance – Significant impact guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..	01/01/2013		High

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High

4.1.5.2 (Migratory Species) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att3_DMPA4 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA4	19/09/2024	No	High
#2.	Document	Att3_DMPA4 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA4	19/09/2024	No	High
#3.	Document	Att8_PMST Report DMPA4_241022.pdf Protected Matters Report	21/10/2024	No	High
#4.	Document	Att8_PMST Report DMPA4_241022.pdf Protected Matters Report	21/10/2024	No	High
#5.	Document	Att8_PMST Report DMPA4_241022.pdf Protected Matters Report	21/10/2024	No	High

4.1.5.6 (Migratory Species) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High
#2.	Link	Matters of National Environmental Significance – Significant impact guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..	01/01/2013		High

4.1.5.9 (Migratory Species) Why you do not think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att3_DMPA4 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA4	19/09/2024	No	High

4.1.5.10 (Migratory Species) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att4_DSDMP 2024.pdf Mardie Project Dredge and Spoil Disposal (DMPA4) Management Plan	08/12/2024	No	High

4.3.8 Why alternatives for your proposed action were not possible

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att13_DMPA1 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA1	05/08/2024	No	High
#2.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No	High

#3.	Document	Att2_BCH Survey Report DMPA4 2024.pdf BCH Survey Report	12/11/2024	No High
#4.	Document	Att3_DMPA4 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA4	19/09/2024	No High
#5.	Document	Att3_DMPA4 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA4	19/09/2024	No High
#6.	Document	Att3_DMPA4 Dredge Plume Modelling 2024.pdf Dredge Plume Modelling DMPA4	19/09/2024	No High
#7.	Link	Wheatstone Project: Dredging and Dredge Spoil Placement Environmental Monitoring and Management Plan https://australia.chevron.com/-/media/australia/..	11/01/2016	High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	137515078
Organisation name	Preston Consulting Pty Ltd
Organisation address	6000 WA
Representative's name	Annaliese Eastough
Representative's job title	Environmental Consultant
Phone	0488737273
Email	aeastough@prestonconsulting.com.au
Address	Level 1/226 Adelaide Terrace, Perth WA 6000

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ By checking this box, I, **Annaliese Eastough of Preston Consulting Pty Ltd**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC

Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

✔ Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	50152574457
Organisation name	MARDIE MINERALS PTY LTD
Organisation address	6005 WA
Representative's name	Snyman Van Straaten
Representative's job title	Manager of Environmental Approvals and Compliance
Phone	0400616790
Email	snyman.vanstraaten@bciminerals.com.au
Address	Level 1, 1 Altona Street, West Perth WA 6005

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Snyman Van Straaten of MARDIE MINERALS PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

✔ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this

project is a controlled action.

Same as Person proposing to take the action information.

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Snyman Van Straaten of MARDIE MINERALS PTY LTD**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

☐ I would like to receive notifications and track the referral progress through the EPBC portal. *

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC 2024/10054

Mr Snyman Van Straaten
Manager of Environmental Approvals and Compliance
Mardie Minerals Pty Ltd
Level 1
1 Altona Street
West Perth WA 6005

Via email: snyman.vanstraaten@bciminerals.com.au

Request for further information for Offshore Dredge Spoil Disposal – Mardie Project, Karratha, WA

Dear Mr Van Straaten

Thank you for referring a proposed action under section 68 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Our initial examination of your referral indicates that there is insufficient information to allow us to consider all the relevant issues.

I request under Section 76 of the EPBC Act further information as outlined below:

- Timing and frequency of maintenance dredging and related spoil disposal.
- Volume of dredge disposed of per maintenance occurrence.
- Location of maintenance dredging spoil disposal.
- Future actions that may also result in the disposal of additional dredge spoil.

In any correspondence with the department please quote the title of the proposed Action and EPBC reference, as shown at the beginning of this letter. You can send information to us by email to cassie.hoepner@dcceew.gov.au and CC northwa.section@dcceew.gov.au.

Please note, under subsection 520(4A) of the EPBC Act and regulation 5.19 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (EPBC Regulations), your referral is subject to cost recovery for the request to provide specific information.

An invoice for $1,701.00 will be sent to the project's nominated entity responsible for payment.

Further details regarding cost recovery can be found on the department's website.

We would appreciate your response to this request for information by the 31 March 2025. Please note that the timing for a decision on your referral stops on the date of this letter and restarts once satisfactory information has been received and any outstanding fees have been paid, if not exempt

or waived. In the event that the proposed Action is determined to be a controlled action, the timing for a decision on an assessment approach also stops on the date of this letter.

We will let you know whether or not approval is required under the EPBC Act as soon as a decision is taken.

If you have any questions about the referral process or this decision, please contact the project manager, Cassie Hoepner, by email to cassie.hoepner@dcceew.gov.au and CC northwa.section@dcceew.gov.au or telephone +61 2 5162 1564 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

Dr Candace Cooke
Director, North WA Assessments
Environment Assessments West
7 March 2025

0000-EV-LET-0153

3 April 2025

Dr Candace Cooke
Director, North WA Assessments
Environment Assessments West
Department of Climate Change, Energy, the Environment and Water

Via e-mail: cassie.hoepner@dcceew.gov.au and northwa.section@dcceew.gov.au

Dear Dr Cooke,

EPBC 2024/10054 OFFSHORE DREDGE SPOIL DISPOSAL – RESPONSE TO REQUEST FOR FURTHER INFORMATION

We refer to your letter dated 7 March 2025 requesting further information on referral EPBC 2024/10054, Offshore Dredge Spoil Disposal.

Consistent with advice received from the Sea Dumping Section during pre-application meetings, Mardie Minerals will apply for separate sea dumping permits for capital and maintenance dredging under the *Environment Protection (Sea Dumping) Act 1981*. The Proposed Action in referral EPBC 2024/10054 is to dispose of dredge spoil from capital and maintenance dredging activities for the Mardie Project (EPBC 2018/8236 and EPBC 2022/9169) within a defined offshore spoil ground 'DMPA4'. We welcome the opportunity to incorporate further information on maintenance dredging as per the below.

– **Timing and frequency of maintenance dredging and related spoil disposal**

Maintenance dredging will be required to ensure safe navigational requirements are maintained in the area, consistent with other navigational hazards.

The timing of maintenance dredging and related spoil disposal will only be between 1 April and 30 September during a calendar year; this is to comply with Condition B5-8 of Ministerial Statement 1211 (Optimised Mardie Project) that stipulates: *The Proponent shall not conduct dredging during the period October – March (inclusive), unless the CEO has confirmed otherwise by notice in writing*.

The frequency of maintenance dredging will be determined from on-site surveys of the dredge footprint and influenced by the rate of sedimentation of seabed areas and the re-suspension of fines into the water column by wave action and tidal currents, which may also include severe weather events such as tropical cyclones. The dredging frequency will also be determined by dredging vessel size and availability.

It is expected that maintenance dredging will need to be undertaken every 2 years to 5 years, and be required for the life of the Mardie Project, i.e. up to 24 November 2084.

– **Volume of dredge disposed of per maintenance occurrence**

Mardie Minerals engaged Baird consultants in 2019 to estimate the annual maintenance dredging volumes for the Mardie Project (EPBC 2018/8236). The estimate is based on sediment transport modelling of ambient wet and dry season periods, and measured turbidity data, geotechnical borehole data and seabed sediment samples.

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The Baird report estimated that sedimentation rates for the dredging proposed as part of the original Mardie Project (EPBC 2018/8236) and Optimised Mardie Project (EPBC 2022/9169) ranges from a total 39,000m^3 to 65,500m^3 (average approx. 50,000m^3) annually. The original dredge footprint for which this estimate was made required up to 800,000m^3 of dredge spoil removal during capital dredging. The dredge footprint has since been revised within the Development Envelope to *inter alia* avoid significant dredging and make best use of the natural seabed level, which ensures more of the offshore area is at design depth where no capital (and maintenance) dredging will be required. The revised dredge footprint represents an approximate 20% reduction to the original footprint. Accordingly, Baird consultants have re-estimated the annual maintenance dredging volumes for the revised dredge footprint to be on average 34,000m^3 annually.

As per the analysis undertaken of seabed samples and geotechnical borehole logs at the dredge footprint, the sediment composition of the maintenance dredge spoil is conservatively predicted to have a lower fines content (i.e. will have more sand) than that of the capital dredging spoil – the assumed loss rate of dredge spoil during maintenance dredging is therefore 20%. After applying the loss rate to the revised average sedimentation rate, Mardie Minerals anticipates the average volume of maintenance dredge spoil to be approximately 27,200m^3 annually.

It is not expected that maintenance dredging will need to be undertaken every year due to annual variability in the sedimentation rate at the site depending on a range of environmental factors (e.g. wave action, tidal currents and severe weather events (cyclones) in close proximity). Mardie Minerals will manage the maintenance dredging effectively through implementation of a monitoring program to confirm available volume at the spoil ground after capital dredging, which includes regular survey and sediment sampling to characterise the sediment (i.e. silt and sand percentages).

– **Location of maintenance dredging spoil disposal**

It is proposed to dispose of the maintenance dredging spoil within spoil ground DMPA4, the details of which are discussed in referral EPBC 2024/10054.

The proposed DMPA4 dimensions are 702m by 431m (30.26ha), and the water depths at surveyed sites ranged between 18 to 21m AHD mean sea level. Disposing dredge spoil to a depth of 2m at DMPA4 yields a total volume of 605,124m^3, with each additional 1m of spoil mounding height adding an additional 302,562m^3. After disposal of the estimated capital dredging volume of 355,000m^3, the estimated available volume within DMPA4 at 2m depth for maintenance dredging spoil is 250,124m^3. Given the annual maintenance dredge volumes outlined above (i.e. 27,200m^3), disposal of dredge spoil to a depth of 2m at DMPA4 provides for approximately 9 years of maintenance dredging, with each additional 1m of spoil disposal at the site providing for an extra 11 years of maintenance dredge disposal.

The sizes of the Zone of High Impact (ZoHI) and Zone of Medium Impact (ZoMI) at DMPA4 are directly related to the sediment composition (i.e. silt and sand percentages) and the rate of disposal of maintenance dredging spoil. As above, the sediment composition of maintenance dredging spoil is predicted to have a lower fines content than from capital dredging, and this will be monitored regularly. BCI also commits that the rate of disposal of maintenance dredging spoil will be equal or less than the disposal during capital dredging. BCI therefore reasonably expects that maintenance dredging spoil will stay within the bounds of the ZoHI and ZoMI for DMPA4.

– **Future actions that may also result in the disposal of additional dredge spoil**

Mardie Minerals is not aware of future actions that may result in disposal of additional dredge spoil.

If the Department requires any further information in relation to EPBC 2024/10054, kindly contact the undersigned via snyman.vanstraaten@bciminerals.com.au or telephone 0400 616 790.

Yours sincerely,

Snyman Van Straaten
MANAGER ENVIRONMENTAL APPROVALS AND COMPLIANCE

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC 2024/10054

Mr Snyman Van Straaten
Manager of Environmental Approvals and Compliance
Mardie Minerals Pty Ltd
Level 1, 1 Altona Street
WEST PERTH WA 6005

Via email: snyman.vanstraaten@bciminerals.com.au

Decision on referral, assessment approach – preliminary documentation for Offshore Dredge Spoil Disposal – Mardie Project, Karratha, WA

Dear Mr Van Straaten

Thank you for referring a proposed action under section 68 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This is to advise you of my decision about the referral of the proposed action to transport and dispose of dredge spoil from the capital and maintenance dredging activities approved in EPBC 2018/8236 and EPBC 2022/9169 within a defined offshore spoil ground 'DMPA4' (proposed action area), Western Australia (WA) state waters, northeast of Onslow, WA.

Decision on referral

As a delegate of the Minister for the Environment and Water, I have decided under section 75 of the EPBC Act that the proposed action is a controlled action. Therefore, further assessment is needed before a decision can be made on whether or not approval can be granted under the EPBC Act.

The information I have considered indicates that the proposed action is likely to have a significant impact on the following matters protected by the EPBC Act:

- Listed threatened species and communities (section 18 & section 18A)
- Listed migratory species (section 20 & section 20A)

Based on the information available in the referral, the proposed action is likely to have a significant impact on the following matters of national environmental significance, including but not limited to:

Sea Snakes

- Leaf-scaled Sea Snake (*Aipysurus foliosquama*) - Critically Endangered
- Short-nosed Sea Snake (*Aipysurus apraefrontalis*) - Critically Endangered

Marine Turtles

- Loggerhead Turtle (*Caretta caretta*) – Endangered, Migratory
- Leatherback Turtle (*Dermochelys coriacea*) – Endangered, Migratory
- Green Turtle (*Chelonia mydas*) – Vulnerable, Migratory
- Hawksbill Turtle (*Eretmochelys imbricata*) – Vulnerable, Migratory
- Flatback Turtle (*Natator depressus*) – Vulnerable, Migratory

Marine Mammals

- Blue Whale (*Balaenoptera musculus*) – Endangered, Migratory
- Australian Snubfin Dolphin (*Orcaella heinsohni*) – Vulnerable, Migratory
- Australian Humpback Dolphin (*Sousa sahulensis*) – Vulnerable, Migratory
- Humpback Whale (*Megaptera novaeangliae*) **-** Migratory
- Australian Bottlenosed Dolphin (*Tursiops aduncus* (Arafura/Timor Sea populations)) **–** Migratory
- Dugong (*Dugong dugon*) - Migratory

Sawfish

- Dwarf Sawfish (*Pristis clavata*) – Vulnerable, Migratory
- Green Sawfish (*Pristis zijsron*) – Vulnerable, Migratory
- Narrow Sawfish (Anoxypristis cuspidata) - Migratory

Sharks

- White Shark (*Carcharodon carcharias*) – Vulnerable, Migratory
- Grey Nurse Shark (*Carcharias taurus* west coast population) – Vulnerable, Migratory
- Whale Shark (*Rhincodon typus*) – Vulnerable, Migratory

Manta Rays

- Reef Manta Ray (*Mobula alfredi* listed as *Manta alfredi*) - Migratory
- Giant Manta Ray (*Mobula birostris* listed as *Manta birostris*) - Migratory

A copy of the document recording this decision is attached and will be published on the department's website.

Please note that this decision only relates to the potential for significant impacts on matters protected by the Australian Government under Chapter 2 of the EPBC Act.

Decision on assessment approach – preliminary documentation

I have also decided, under section 87 of the EPBC Act, that the proposed action will be assessed by preliminary documentation.

Each assessment approach requires different levels of information and involves different steps. All levels of assessment include a public consultation phase, in which any third parties can comment on the proposed action.

You may also need to consult with First Nations people and communities during the assessment process. Please refer to our First Nations engagement guidelines for more information on how and when to engage with First Nations people and communities.

Details on the assessment process for your proposed action and the responsibilities of the proponent are set out in the EPBC Act — Environment Assessment process fact sheet. You can also read about the department's referral and assessment process for further guidance. The project manager will contact you shortly to discuss the assessment process.

Application of the mitigation hierarchy

The information available in the referral indicates that protected matters are present or likely to be present in the proposed action area. As the project design progresses, you should demonstrate that you have exhausted all options to avoid and mitigate harm to these matters in final assessment documentation. Where residual significant impacts cannot be avoided, proposed offsets must deliver an overall conservation outcome that improves or maintains the viability of impacted matters. The department will be in contact to arrange a time to discuss this with you further.

Cost Recovery

Under subsection 520(4A) of the EPBC Act and the *Environment Protection and Biodiversity Conservation Regulations 2000* (EPBC Regulations) your assessment is subject to cost recovery. Attached is a copy of the initial fee schedule for your proposed action. An invoice for Stage 1 will be sent to the project's nominated entity responsible for payment. Fees must be paid before each stage of the assessment can commence. Further details on cost recovery are available on the department's website.

If you disagree with the fee schedule provided, you may apply under section 514Y of the EPBC Act for reconsideration of the method used to work out the fee. You must make your one-off request within 30 business days of the date of this letter. Further details regarding the reconsideration process can be found on the department's website.

Further information required

While I have determined that your project will be assessed by preliminary documentation, some further information will be required to be able to assess the relevant impacts of the action. You should expect to receive a letter from the department within 10 business days of the payment of Stage 1 fees, outlining the information required.

Additional Costs

You may elect under section 132B of the EPBC Act to submit a management plan for approval at any time before the Minister for the Environment and Water makes an approval decision of the proposed action under section 133 of the EPBC Act.

If an election is made under section 132B of the EPBC Act, cost recovery will apply to the approval of any action management plans you submit.

Cost recovery does not apply to the approval of action management plans where you do not elect to submit an action management plan for approval under section 132B of the EPBC Act and the approval of the action management plan does not arise from a variation to the approval conditions that you have requested.

Where you vary an approval condition and it results in you being required to submit an action management plan for approval, cost recovery will apply to the approval of the action management plan. Please refer to the attached Action Management Plan fee election form.

Further guidance

I have also written to the following parties to advise them of this decision:

Other relevant authority or authorities	Mr Alistair Jones, Director General, Department of Water and Environmental Regulation (DWER)

Please also note that once a proposal to take an action has been referred under the EPBC Act, it is an offence under section 74AA(1) to take any component of the action while the decision-making process is ongoing (some exemptions may apply). Persons convicted of an offence under this provision of the EPBC Act may be liable for a penalty of up to 500 penalty units.

The department has published an Environmental Impact Assessment Client Service Charter which outlines the department's commitments when undertaking environmental impact assessments under the EPBC Act.

If you have any questions about the referral process or this decision, please contact the project manager, Cassie Hoepner, by email to cassie.hoepner@dcceew.gov.au and CC northwa.section@dcceew.gov.au or telephone +61 2 5162 1564 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

Kylie Calhoun
Branch Head
Environment Assessments West
14 May 2025

Attached:

- Notice recording the CA and assessment approach decision
- Fee schedule
- Action Management Plan fee election form

Australian Government
Department of Climate Change, Energy, the Environment and Water

Notification of referral decision and designated proponent – controlled action– and assessment approach

Offshore Dredge Spoil Disposal – Mardie Project, Karratha, WA (EPBC 2024/10054)

This decision is made under section 75 and section 87 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Proposed Action

designated proponent	Mardie Minerals Pty Ltd ABN: 50 152 574 457
proposed Action	To transport and dispose of dredge spoil from the capital and maintenance dredging activities approved in EPBC 2018/8236 and EPBC 2022/9169 within a defined offshore spoil ground 'DMPA4' (proposed action area), Western Australia (WA) state waters, northeast of Onslow, WA (See EPBC Act referral 2024/10054).

Referral decision: controlled action

status of proposed Action	The proposed Action is a controlled action. The project will require assessment and approval under the EPBC Act before it can proceed.
relevant controlling provisions	• Listed threatened species and communities (sections 18 and 18A) • Listed migratory species (sections 20 and 20A)

Assessment approach decision

assessment approach	The project will be assessed by preliminary documentation

Person authorised to make decision

name and position	Kylie Calhoun Branch Head Environment Assessments West
signature	
date of decision	14 May 2025

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC 2024/10054

Mr Snyman Van Straaten
Manager of Environmental Approvals and Compliance
Mardie Minerals Pty Ltd
Level 1
1 Altona Street
West Perth WA 6005

Via email: snyman.vanstraaten@bciminerals.com.au

Further information required for Preliminary Documentation for Offshore Dredge Spoil Disposal – Mardie Project, Onslow, WA

Dear Mr Van Straaten

I am writing to you about your proposal to undertake construction to transport and dispose of dredge spoil from the capital and maintenance dredging activities approved in EPBC 2018/8236 and EPBC 2022/9169 within a defined offshore spoil ground 'DMPA4' (proposed action area), Western Australia (WA) state waters, northeast of Onslow, WA. (see EPBC referral 2024/10054).

On 14 May 2025, a delegate of the Minister for the Environment and Water decided that the proposed action is a controlled action and that it will be assessed by Preliminary Documentation. Further information is required to assess the relevant impacts of the proposed action.

I now request, under s95A(2) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), further information as outlined in Attachment A.

Specifically, you are asked to provide the following information:

- Underwater noise modelling
- A risk assessment, with avoidance and mitigation measures
- Updated dredge and spoil disposal management plan

Please also resubmit the information provided in the referral as the basis of the Preliminary Documentation (refer Table B in Attachment A).

Details on the assessment process for the project and the responsibilities of the proponent are set out in the EPBC Act — Environment Assessment process fact sheet. Further information on the referral and assessment process can be found on the department's website.

During the referral public comment period, the department received comments from Geoscience Australia who wish to pass on the following information:

a) Geoscience Australia recommends adoption of the national ocean best practice standards as set out in the field manuals published by the National Environmental Science Program (NESP) and AusSeabed's Australian Multibeam Guidelines and Australia's Sub-Bottom Profiling Guidelines.

b) Geoscience Australia recommends the designated Proponent submit the data collected from preliminary field surveys for inclusion in the national marine database (AusSeabed@ga.gov.au), as this would benefit the marine geoscience program.
c) Geoscience Australia have provided a publication as an example of an appropriate disposal strategy to minimise impacts (Attachment B)

The department will contact you on the week commencing 22 September 2025, to follow up on your progress. If you have any questions about the assessment process or the further information required, please contact Parash Subedi, by email to parash.subedi@dcceew.gov.au and CC NorthWA.Section@dcceew.gov.au and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

Kate Hamer
Director

South WA Section
Environmental Assessments West

2 June 2025

Attachment A: Request for further information for Preliminary Documentation (below)
Attachment B: Publication supplied by Geoscience Australia

EPBC 2024/10054 – Offshore Dredge Spoil Disposal – Mardie Project, Onslow, WA

Attachment A: Request for further information (RFI) under section 95A(2) and Preliminary Documentation requirements

Table A: Request for further information	Response / Location
1. Introduction	
1.1 Referral Decision The following species were triggered under Listed Threatened Species and Communities (s18 and s18A) and will need to be considered throughout the Preliminary Documentation **Sea Snakes** • Leaf-scaled Sea Snake (*Aipysurus foliosquama*) - Critically Endangered • Short-nosed Sea Snake (*Aipysurus apraefrontalis*) - Critically Endangered **Marine Turtles** • Loggerhead Turtle (*Caretta caretta*) – Endangered, Migratory • Leatherback Turtle (*Dermochelys coriacea*) – Endangered, Migratory • Green Turtle (*Chelonia mydas*) – Vulnerable, Migratory • Hawksbill Turtle (*Eretmochelys imbricata*) – Vulnerable, Migratory • Flatback Turtle (*Natator depressus*) – Vulnerable, Migratory **Marine Mammals** • Blue Whale (*Balaenoptera musculus*) – Endangered, Migratory • Australian Snubfin Dolphin (*Orcaella heinsohni*) – Vulnerable, Migratory • Australian Humpback Dolphin (*Sousa sahulensis*) – Vulnerable, Migratory • Humpback Whale (*Megaptera novaeangliae*) – Migratory • Australian Bottlenosed Dolphin (*Tursiops aduncus* (Arafura/Timor Sea populations)) – Migratory • Dugong (*Dugong dugon*) – Migratory **Sawfish** • Dwarf Sawfish (*Pristis clavata*) – Vulnerable, Migratory • Green Sawfish (*Pristis zijsron*) – Vulnerable, Migratory • Narrow Sawfish (*Anoxypristis cuspidata*) – Migratory **Sharks and Rays** • White Shark (*Carcharodon carcharias*) – Vulnerable, Migratory • Grey Nurse Shark (*Carcharias taurus* west coast population) – Vulnerable, Migratory • Whale Shark (*Rhincodon typus*) – Vulnerable, Migratory • Reef Manta Ray (*Mobula alfredi* listed as *Manta alfredi*) – Migratory • Giant Manta Ray (*Mobula birostris* listed as *Manta birostris*) – Migratory	Noted. These species have been included within the following sections of the Preliminary Document: -Section 2.2.2(a): Listed Threatened and Migratory Species -Section 3: Relevant Matters of National Environmental Significance -Section 4: Potential Impacts -Section 6.1: Relevant Impacts and Risk Assessment -Section 6.2: Summary of Impacts to Matters of National Environmental Significance

Table A: Request for further information		Response / Location
2. Baseline information		
2.1 Underwater Noise and plume impacts	The department notes that observation and exclusion zones are presented as a mitigation measure for the impacts of underwater noise, additionally to the information provided at referral, please provide; a) Modelling that indicates that the level of underwater noise produced by the action (split hull hopper barge dumping 1,200 m^3 of dredge spoil) is sufficiently mitigated by the observation and exclusion zones presented.	**a)** Please be advised that a comprehensive technical memorandum instead of detailed numerical noise modelling has been provided as part of the Preliminary Documentation. The memorandum was completed by MScience, which qualitatively evaluates noise sources from vessel operations and disposal activities; it outlines observation/exclusion zones for marine fauna and assesses the risk of impact to marine fauna. This Underwater Noise Risk Assessment for the Proposed Action has been provided as Attachment 17 of the Preliminary Document (Att17_Underwater Noise Risk Assessment 2025). The information within the underwater noise risk assessment has been incorporated into the following sections of the Preliminary Document: -Section 4.1.2: Underwater Noise -Section 5.2.1(b): Observation and Exclusion Zones. As discussed in Section 5.2.1(b) of the Preliminary Document, the risk assessment determined that the sound of the barge engine and movements were more prominent than the dumping activities. Impacts from barge noise are therefore considered to be minimised by the current 500 m observation and 300 m exclusion zone requirements to prevent vessel strike. Note that MScience made a recommendation for a larger 3,000 m observation zone for LF and HF cetaceans. MScience's recommendation was conservative, based on a study of vessels with higher noise levels than those predicted by the Proposed Action, and assumed the cetaceans would remain near the noise source for an extended period. Furthermore, the larger observation zone recommended by MScience is for LF and HF cetaceans (i.e. whales and dolphins), with whales likely to only occur near the Proposed Action from June to November (peak in August to September), during which there will be additional avoidance and mitigation measures in place (i.e. dedicated MFO, adaptive management (Att2_DSDMP 2025)). Existing commitments are also in place for approved dredging activities

Table A: Request for further information		Response / Location
		within the DSDMP (Att2_DSDMP 2025).
	The department notes that the plume created from the dredge spoil dump surpasses the observation and exclusion zones, additionally to the information provided at referral, please provide: a) Mitigation measures to manage any potential impacts to marine fauna affected by the plume created from the dump. b) Map the observation and exclusion zones, overlaying the ZoHI and ZoMI (refer Figure 2, Attachment 1 from the Referral)	**a)** The observation and exclusion zones are designed to avoid or minimise the likelihood of physical injury and noise impacts, not to prevent interaction with the dredge plume (as the plume expands relatively slowly and little can be done to the plume once present). Mitigation measures to manage potential impacts to marine fauna affected by the plume created from dredge spoil disposal are provided within the DSDMP (Att2_DSDMP 2025, Section 7, Pages 48-64) which are summarised in the Preliminary Document in Section 5.2.1 (Dredge and Spoil Disposal Management Plan). It is also anticipated that the Sea Dumping Permit (once issued), will contain conditions that manage potential impacts from the Proposed Action (Section 5.2.2: Sea Dumping Permit). Additional mitigation measures specific to managing potential impacts to marine MNES fauna affected by the plume are provided in Section 5.2.3 (Other Mitigation Measures). **b)** The observation and exclusion zones overlaying the ZoHI and ZoMI are shown in the Preliminary Document in Figure 13 (Current Observation and Exclusion Zones for the Proposed Action).
	The department notes that sea snakes, sharks and sawfish are not considered in observation and exclusion zones. There is a concern that these species may be impacted by the plume created by the dredge spoil dump and/or underwater noise. In addition to the information provided at referral; a) Ensure that all species listed in 1.1 are included in observation and exclusion zones presented. b) Ensure that observation and exclusion zones presented are sufficient to mitigate plume impacts	As stated above, the observation and exclusion zones are designed to avoid or minimise the likelihood of physical injury and noise impacts, not to prevent interaction with the dredge plume (as the plume expands relatively slowly and little can be done to the plume once present). **a)** The DSDMP (Att2_DSDMP 2025, Section 8.3.1, Pages 86-88) has been updated to include all listed species in the proposed observation and exclusion zones. **b)** Refer to comment above. To ensure that observation and exclusion zones are sufficient to mitigate plume impacts on sea snakes, sharks, and sawfish:

Table A: Request for further information		Response / Location
		trained / dedicated MFOs will be in attendance during the works to detect the presence of sea snakes, sharks, and sawfish, and to stop works if required. The use of soft-start and pause protocols to gradually commence operations and pause if these species are observed within the zones, will reduce disturbance.
2.2 Precautionary Principle	The Department notes that your referral documentation refers to the Precautionary Principle in relation to the Narrow Sawfish (*Anoxypristis cuspidata*) – Migratory, Leaf-scaled Sea Snake (*Aipysurus foliosquama*) - Critically Endangered and Short-nosed Sea Snake (*Aipysurus apraefrontalis*) - Critically Endangered a) Detail how you have applied the Precautionary Principle in relation to each of these species. b) Provide appropriate avoidance and mitigation measures in relation to each of these species to prevent/reduce significant impact.	**a)** Details of the application of the Precautionary Principle have been provided within Section 2.6.2 (Pages 29 and 30), Section 7 (Page 48) and Table 19 (Page 88) of the DSDMP (Att2_DSDMP 2025), and within the Preliminary Document in Table 16 (Assessment Against ESD Principles). In summary, where there is uncertainty regarding marine MNES fauna being present within DMPA4 and the surrounding zones of impact, a precautionary approach has been taken and the species have been included in management measures. **b)** Specific reference to avoidance and mitigation measures adopted for the Narrow Sawfish, Short-nosed Sea Sake, and Leaf-scaled Sea Snake have been summarised in the following sections of the Preliminary Document: -Section 4: Potential Impacts -Section 6.1: Relevant Impacts and Risk Assessment -Section 6.2: Summary of Impacts to Matters of National Environmental Significance
2.3 Capital and Maintenance Dredging Disposal	As clarified in the RFI responses on 3 April 2025 and 10 April 2025 maintenance dredge disposal for the life of the Mardie Project is included in this referral. In the Preliminary Documentation, use clear language to explain the project under assessment is for both capital and maintenance dredge spoil disposal for the life of the Mardi Project.	The Preliminary Document has been reviewed to ensure consistent, clear references of capital and maintenance dredging throughout. Section 1.1.1 (Offshore Dredge Spoil Disposal) of the Preliminary Document includes discussion of the dredging volumes required for the capital and maintenance programs.
	Provide further detail on maintenance dredging including: a) Total number of days per event (where event is the disposal of 1, 2 or 5 years of annual accumulation) b) Total number of disposal trips per day (where trip is going from the dredge site out to DMPA4)	Section 1.1.1 (Offshore Dredge Spoil Disposal) of the Preliminary Document includes discussion of the maintenance dredging program. It is noted that the maintenance dredging values have recently been updated, and as such these new values are reflected within the Preliminary Document.

Table A: Request for further information		Response / Location
	c) Total amount of disposal per trip and day (in both m^3 and tonnage)	
	In the PD include the following information: a) For capital dredging, each disposal will consist of 1,200 m^3 which is approximately 424 tonnes per drop 3 times a day (3,600 m^3) for 98 days for a total of 355,000 m^3 b) 27,200 m3 annually for maintenance dredging, disposed of in either annual, 2 yearly or 5 yearly cycles, depending on sedimentation at the dredge site. c) Over the life of the project (until 24 November 2084), a total of 1,550,400 m3 of maintenance dredge disposal is to be dumped at DMPA4 over 57, 29 or 12 events. d) Bringing the total for both capital and maintenance dredge disposal to 1,905,400 m3	Section 1.1.1 (Offshore Dredge Spoil Disposal) of the Preliminary Document includes discussion of the capital and maintenance dredging program. It is noted that the maintenance dredging values have recently been updated, and as such these new values are reflected within the Preliminary Document. **a)** Refer to Section 1.1.1(a) (Capital Dredging). Please note it is not clear to Mardie Minerals how DCCEEW has estimated the capital dredging volume to be "1,200 m^3 which is approximately 424 tonnes per drop…". The mass (in tonnes) of capital dredging volume will be estimated based on the density factor of the dredge material; based on the findings of the geotechnical investigation undertaken of the dredge area, it is expected that approximately 90% of the spoil will be sand/clay type material and approximately 10% will be rocky type material, each of which have different density factors. **b)** Refer to Section 1.1.1(b) (Maintenance Dredging). **c)** Refer to Section 1.1.1(b) (Maintenance Dredging). **d)** Refer to Section 1.1.1(b) (Maintenance Dredging).
2.4 Alternatives	The Department notes that the referral included modelling for an alternative offshore disposal site DPMA1 and mentioned sites DPMA1-3 and Spoil Ground E The information contained in referral EPBC 2024/10054 is in contradiction to Condition 36(g) that dredge spoil must be disposed of onshore from EPBC 2018/8236 and EPBC 2022/9169 and offshore disposal was assessed as an avoidance measure, and informed acceptability for the final decisions under the EPBC Act for EPBC 2018/8236 and EPBC 2022/9169.	**a)** A detailed explanation for the change from onshore to offshore dredge spoil disposal has been provided in Section 5.1.1 (Onshore locations). **b)** Alternative onshore locations originally considered, and the reasoning for why onshore dredge disposal is not feasible, is described in Section 5.1.1 (Onshore locations). Alternative offshore locations considered for dredge disposal have been identified within Section 5.1.2 (Offshore locations). **c)** Considerations for other potential dredge spoil disposal sites

Table A: Request for further information		Response / Location
	Provide the following in the Preliminary Documentation: a) A detailed explanation for why it would now be acceptable to reverse this avoidance measure and dispose of dredge spoil offshore b) All alternative **onshore** and offshore locations considered for the disposal of dredge spoil c) Outline considerations involved with each site d) Detail reasoning behind each location not being selected for the disposal of dredge spoil e) Actions and timeframes for addressing the contradiction of conditions of previous approvals	have been provided in Section 5.1.1 (Onshore locations) and Section 5.1.2 (Offshore locations). **d)** Reasoning for other locations not being selected for dredge spoil disposal have been provided in Section 5.1.1 (Onshore locations) and Section 5.1.2 (Offshore locations). **e)** Mardie Minerals propose that the mechanism for amending conditions in the Approved Proposal is through section 143 (1) (c) of the EPBC Act, which states that: c) *the holder of the approval agrees to the proposed revocation, variation or addition, or the Minister has extended the period for which the approval has effect under section 145D, and the Minister is satisfied that any conditions attached to the approval after the proposed revocation, variation or addition are necessary or convenient for:* *(i) protecting a matter protected by any provision of Part 3 for which the approval has effect; or* *(ii) repairing or mitigating damage to a matter protected by a provision of Part 3 for which the approval has effect (whether or not the damage has been, will be or is likely to be caused by the action).* With regard to the Proposed Action, Mardie Minerals submits that: a) as the holder of the approval, Mardie Minerals would agree to the variation, and b) As articulated throughout the Preliminary Document; after going out to tender for onshore spoil disposal, and as a result of the significant body of further work has been undertaken to investigate potential offshore spoil disposal areas and the potential impacts of offshore spoil disposal, it has become clear that a change to offshore disposal is both necessary and convenient for mitigating damage to MNES (see

Table A: Request for further information		Response / Location
		Table 11 (Potential Impacts to Marine MNES Fauna) in Section 6.1 (Relevant Impacts and Risk Assessment) of the Preliminary Document). Regarding the timeframes for amendment of conditions in the Approved Proposal, Mardie Minerals propose that at an appropriate stage in the assessment process of the Proposed Action (i.e. if/when the intent to grant an approval is known and communicable) it would be appropriate for Mardie Minerals to meet with the DCCEEW Assessments, Post Approvals, Compliance and Sea Dumping branches to discuss specifics, including how new and existing conditions might interrelate effectively. It may, for example, be appropriate to include conditions of approval in a single instrument (either resulting from the referral of the Proposed Action or the application for a Sea Dumping Permit) and for all other instruments to simply redirect to that instrument.
2.5 Dredge and Spoil Disposal Management plan	The Department notes that a Dredge and Spoil Disposal Management plan (DSDMP 2024) was provided in the referral and was approved for EPBC 2018/8236 and EPBC 2022/9169. The DSDMP 2024 states that: A long term DSDMP for maintenance dredging will be submitted to Decision-Making Authorities for assessment in due course As clarified during the referral process, maintenance dredging disposal for the life of the Mardie Project was included in the EPBC referral 2024/10054, therefore DSDMP must be updated to include maintenance dredging/disposal before the delegate can make a decision on the acceptability of the action as detailed in EPBC project 2024/10054. a) Use clear language to identify management measures that apply to dredging, capital disposal and maintenance disposal	The responses below refer to the DSDMP (Att2_DSDMP 2025), with details provided on where the information has been addressed. **a)** Text added to Section 7 (Page 48) of the DSDMP to be clear that management measures apply for "*dredge (capital and maintenance) and disposal (capital and maintenance)*" **b)** Table 12 in Section 8.1.2 (Page 66) of the DSDMP title has been updated to clearly indicate it is for dredge and disposal program **c)** Section 8.1.4 (Page 67) of the DSDMP "*Maintenance dredging monitoring locations will be refined following the completion of capital dredging, as per the proposed Long Term DSDMP*" **d)** Section 8.1.9 (Page 76) of the DSDMP indicates the aerial plume validation will be used for dredging and spoil disposal **e)** Footnote added to second bullet point in Section 8.2.1 (Page

Table A: Request for further information		Response / Location
	b) Confirm that Table 11 threshold limits also apply to dredge spoil disposal c) Confirm timing of installation of monitoring stations for maintenance disposal d) Confirm if aerial plume validation is being used for monitoring plume from spoil disposal e) 'No irreversible loss of BCH outside of the authorised dredging and disposal ZoHI' (pg 65 DSDMP 2024)– define the threshold of reversible loss (or point to in existing documentation) and what changes will be looked for f) Describe baseline and ongoing surveys for maintenance disposal g) Describe distress behaviours that Marine Fauna Observers (MFOs) will be looking out for in the observation zone to initiate shut down h) Amend overlap between: a. Key migration and breeding windows between 1 October and 31 March will be avoided b. Dedicated MFOs (in addition to trained MFO) on all barges during humpback whale season (June to November) including transit to Spoil Ground DMPA4	76) of the DSDMP to clarify: "The EPA considers impacts within the ZoMI as reversible, provided that recovery of the benthic communities and habitats occurs within five years post-impact. If recovery is anticipated to take longer than five years, the impact may be classified under the ZoHI, indicating irreversible loss (EPA 2021)" **f)** For Marine water quality monitoring, monitoring stations will be installed 8 weeks prior to commencement of maintenance dredging / disposal and monitoring will continue until no less than 30 days post maintenance dredge/disposal completion. Maintenance dredging monitoring locations will be refined following the completion of capital dredging, as per the proposed Long Term DSDMP (refer to Section 8.1.4 (Page 67) of the DSDMP. For BCH monitoring, a baseline condition assessment for the disposal monitoring sites will be undertaken at least 3 months prior to the commencement of disposal activities (refer to Section 8.2.5 (Page 80) of the DSDMP. During maintenance disposal, a reactive BCH survey will be undertaken in the event that a level 3 management event is triggered (i.e., DLI EPO Trigger as defined in Table 14 (pg 72) of the DSDMP). Refer to Section 8.2.9 (Page 85) of the DSDMP for summary of baseline, reactive, and post-disposal monitoring/surveys that will be undertaken. **g)** Refer to Section 8.3.2 (Page 91) of the DSDMP. **h)** Table 18 in Section 8.3.1 (Page 87) of the DSDMP indicates: a. "*no dredging or disposal will occur from 1 October to 31 March*" b. Dedicated and trained MFO inside of the whale season (June – November) for the following activities: • Dredging; • Transit to spoil ground; and • Disposal.

Table A: Request for further information		Response / Location
3. Likely impacts		
3.1 All species in 1.1	The preliminary documentation must include (also refer Table B, item 4) a description of all the potential impacts, including direct, indirect, and offsite impacts which will or are likely to occur to Matters of National Environmental Significance (MNES) species as listed, as a result of the proposed action. The impacts of the proposed action on these MNES should be considered in the broadest scope, with all components considered, including any associated supporting infrastructure, with the following information to be outlined: a. Identification and characterisation of the nature of all direct and indirect impacts (within the proposed action area and surrounding areas) for each species, including timing and whether the impact is likely to be temporary or permanent. b. A risk assessment of all identified direct and indirect impacts (within the proposed action area and surrounding areas) from the proposed action to the listed threatened species, including whether the nature and/or scale of the potential impacts are unknown, unpredictable, or irreversible, and an outline of the residual risk levels including at least the following issues: i. Elevated underwater noise increases the risk of displacement, adverse behavioural and physiological changes to marine fauna ii. Reduction in marine environmental quality (e.g. increased suspended sediment/turbidity/bioaccumulation of contaminates) may impact on marine fauna behaviours	**a)** The nature and characterization of all direct and indirect impacts for each MNES species has been provided in Section 4 (Potential Impacts), with a summary for each individual MNES species provided in Section 6.2 (Summary of Impacts to Matters of National Environmental Significance). Information regarding the timing of these impacts is summarized in Section 1.1.3 (Frequency). **b)** A risk assessment associated with each of the potential impacts has been provided within Section 6.1 (Relevant Impacts and Risk Assessment). The risk assessment was informed by the risk criteria provided in Section 6.1.1 (Risk Criteria). **c)** Current surveys, species information and relevant policies etc. were referenced relevant to each marine MNES fauna species within Section 6.2 (Summary of Impacts to Matters of National Environmental Significance). This table is comparable to the risk assessment within Section 6.1 (Relevant Impacts and Risk Assessment). All relevant references have been included either as attachments or references where publicly available. **d)** An assessment of the acceptability of impacts was provided within Section 6.1 (Relevant Impacts and Risk Assessment). Statutory documents relevant to each marine MNES fauna species are referenced within Section 6.2 (Summary of Impacts to Matters of National Environmental Significance). This table is comparable to the risk assessment within Section 6.1 (Relevant Impacts and Risk Assessment). All relevant references have been included either as attachments or references where publicly available. **e)** All relevant conservation advice and recovery plans have been referenced within the following sections of the

Table A: Request for further information		Response / Location
	iii. Increased risk of injury/mortality from vessel strike iv. Increased risk of pollution incidents v. Increased risk of the introduction of Introduced Marine Species (IMS) vi. Artificial Light c. The risk assessment should include references to current surveys and regional-scale species information as well as specifically referencing page numbers of any relevant policy guidelines, studies, surveys, management plans, or consultations with subject matter experts to support the arguments in the risk assessment of these impact pathways and any documents referenced must be included as attachments. d. Provide an assessment of the acceptability of impacts (direct, indirect, and offsite) on listened threatened species and communities and migratory species, considering the proposed avoidance and mitigation measures (see section 3**. Avoidance and mitigation** of this table) and the statutory documents for each matter (Table C, item 2.4). e. The preliminary documentation must demonstrate that the proposed action will have regard to the Conservation Advice for the relevant species and is not inconsistent with the Recovery Plan for the relevant matter (Table C, item 2.4).	Preliminary Documentation: - Section 1.3.6: Other Relevant Standards, Policies and Guidance Materials - Section 6.2: Summary of Impacts to Matters of National Environmental Significance - References
4. Avoidance and Mitigation		
4.1 All species in 1.1	The preliminary documentation must provide (also refer Table B, item 5) a discussion of how the Offsets mitigation hierarchy (avoid, mitigate, and offset) has been applied and considered for this proposed action to limit harm to MNES, including reasons why no further avoidance was proposed. In doing so;	The preliminary document includes discussion of the offset mitigation hierarchy in Section 5 (Proposed Avoidance and Mitigation Measures), which details alternatives, followed by avoidance and mitigation measures. No offsets are proposed for this Proposed Action, as the residual impacts are not considered significant. Given the limited scope of the Proposed

Table A: Request for further information		Response / Location
	a. Provide details of all avoidance measures that will be implemented. b. Provide details of all mitigation measures that will be implemented to minimise the risks contained within the Risk Assessment (Item 2.1). For each proposed mitigation measure, include: i. Clearly defined objectives (using **S**pecific, **M**easurable**, A**chievable, **R**elevant**, T**imebound (SMART) principles). ii. Performance and completion criteria. iii. Monitoring and reporting arrangements. iv. Potential risks/threats and any measures that would be implemented to mitigate against these risks, and any proposed monitoring to confirm the effectiveness of these measures. c. Provide evidence supporting the effectiveness of avoidance and mitigation measures mentioned above (reference your intended use of best practice techniques, standards and accepted industry guidance), noting that the effectiveness of a particular measure is a reflection of the confidence in the ability of the measure to reduce the risk or threat. d. Any management commitments must be clearly distinguished from recommendations or statements of best practice made by the document author or other technical expert. It is preferable to provide a consolidated table of management commitments, including details on funding, roles and responsibilities, and measurable performance criteria (as per item 3.1c).	Action, the DSDMP is the primary document that contains most of the relevant mitigation measures. **a)** The avoidance measures are outlined within Section 5.2 (Avoidance and Mitigation Measures). **b)** The mitigation measures are outlined within Section 5.2 (Avoidance and Mitigation Measures). These are compared to the risks contained within the Risk Assessment within Section 6.1 (Relevant Impacts and Risk Assessment). The DSDMP (Att2_DSDMP 2025, Section 7, Page 48) provides further detail on these specific mitigation measures, which includes clearly defined objectives following SMART principles, performance and completion criteria (management targets and actions), monitoring and reporting arrangements, and a summary of the risks and mitigations to manage these (including monitoring programs to confirm the effectiveness of these measures). **c)** The DSDMP (Att2_DSDMP 2025, Section 7, Page 48) details avoidance and mitigation measures for the impacts from the Proposed Action. The Preliminary Document discusses evidence relevant to the key DSDMP avoidance and mitigation measures, provided in Section 5.2.1(a) (Effectiveness of Mitigation Measures) **d)** Management measures are clearly defined within Section 5.2 (Avoidance and Mitigation Measures), which are provided in detail (including details on roles and responsibilities, and performance criteria) within the DSDMP (Att2_DSDMP 2025, Section 5, Page 43). Mardie Minerals will be solely responsible for funding these measures.

Table B: Information from the referral (suggested template to follow)		Response / Location
1. Description of the action	A description of all components of the action, as described in the referral documentation. Referring to relevant maps, design drawings and figures of the proposed action site. Please ensure all project elements are labelled.	The description of the Proposed Action has been provided in Section 1 (Introduction). Labelled figures have been provided throughout this section to support the text.
2. Description of the environment	A description of all environments, as it relates to the proposed action, as described in the referral documentation.	A description of the environment for the Proposed Action has been provided in Section 2 (Description of the Environment)
3. Relevant Matters of National Environmental Significance (MNES)	Details of all the relevant MNES, as described in the referral as listed in Table A.1	Details for all relevant MNES, as described in the referral and listed in Table A.1, have been provided within the Preliminary Document in the following sections: - Section 2.2.2(a): Listed Threatened and Migratory Species - Section 3: Relevant Matters of National Environmental Significance - Section 6.1: Relevant Impacts and Risk Assessment - Section 6.2: Summary of Impacts to Matters of National Environmental Significance This information has been summarised predominantly from the following attachments: - Att2_DSDMP 2025 - Att8_PMST Report DMPA4_241206 - Att9_Marine Fauna Review 2020 - Att10_Marine Turtle Monitoring Program 2023 - Att11_Marine Turtle Survey Report 2024 - Att12_Marine Turtle Survey Report 2025
4. Impacts	Description of the direct and indirect impacts contained in the referral documentation, including: a. Zone of High impact 355 ha b. Zone of Moderate impact 720 ha c. Elevated underwater noise increases the risk of displacement, adverse behavioural and physiological changes to marine fauna d. Reduction in marine environmental quality (e.g. increased suspended sediment/turbidity/bioaccumulation	The direct and indirect impacts listed by DCCEEW have been discussed within the following sections of the Preliminary Document: - Section 4: Potential Impacts - Section 4.1.1: Zones of Impact - Section 4.1.2: Underwater Noise - Section 4.1.3: Marine Environmental Quality - Section 4.1.4: Vessel Strike - Section 4.1.5: Introduced Marine Pests

Table B: Information from the referral (suggested template to follow)		Response / Location
	of contaminates) may impact on marine fauna behaviours e. Increased risk of injury/mortality from vessel strike f. Increased risk of pollution incidents g. Increased risk of the introduction of Introduced Marine Species (IMS) Artificial Light	- Section 4.1.6: Artificial Light - Section 6.1: Relevant Impacts and Risk Assessment - Section 6.2: Summary of Impacts to Matters of National Environmental Significance
5. Proposed avoidance and mitigation measures	a. Description of the site selection to avoid high value areas. b. Description of the avoidance and mitigation measures contained in the referral documentation including how the mitigation hierarchy has been applied to the proposed action to result in a net gain for each protected matter. c. Discuss risk and provide management plans where applicable to manage identified risks to acceptable levels. d. Dredge and Spoil Disposal Management plan (DSDMP).	**a)** Site selection to avoid high value areas has been discussed within the Preliminary Document in Section 5.1 (Alternatives). **b)** The avoidance and mitigation measures (including the application of the mitigation hierarchy) have been described in Section 5.2 (Avoidance and Mitigation Measures), with the detailed mitigation measures within the DSDMP (Att2_DSDMP 2025). **c)** A risk assessment associated with each of the potential impacts has been provided within Section 6.1 (Relevant Impacts and Risk Assessment). The risk assessment was informed by the risk criteria provided in Section 6.1.1 (Risk Criteria). Management plans have been referred to within Section 5.2 (Avoidance and Mitigation Measures) and Section 6.1 (Relevant Impacts and Risk Assessment). Some of the key management plans for the Proposed Action include the DSDMP (Att2_DSDMP 2025) and the Illumination Plan (BCI, 2024a). **d)** The DSDMP has been provided at Attachment 2 (Att2_DSDMP 2025) and is described in the Preliminary Document (Section 5.2.1: Dredge and Spoil Disposal Management Plan).
6. Baseline species information	Description of the baseline data contained in the referral documentation, including (but not limited to): a. Referral Document b. Site and regional context maps	This information has been provided within the following sections of the Preliminary Document: - Section 2: Description of the Environment - Section 7: Supporting Baseline and Modelling

Table B: Information from the referral (suggested template to follow)		Response / Location
	c. Stakeholder Consultation register d. DMPA4 Dredge Plume Modelling 2024 e. BCH Survey Report DMPA4 2024 f. Dredge and Spoil Disposal Management plan (DSDMP 2024) g. DMPA1 Dredge Plume Modelling 2024 h. Marine Turtle Monitoring Program 2023 i. Marine Fauna Review 2020 j. Marine Sediment Quality Assessment 2023 k. Baseline Marine Sediment Assessment 2019 l. RFI responses on 3 April 2025 and 10 April 2025	Information - Appendices

Table C: General content, style, and formatting requirements		Response / Location
1. Considerations for decision making		
1.1 Ecologically Sustainable Development (ESD)	1.1.1 The description of how the proposed action meets the principles of ESD, as defined in section 3A of the EPBC Act should consider and address the following; **Section 3A - *Principles of ecologically sustainable development*:** a. *decision making processes should effectively integrate both long term and short term economic, environmental, social, and equitable considerations.* b. *if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.* c. *the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.* d. *the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making.* e. *improved valuation, pricing and incentive mechanisms should be promoted.*	This information has been provided within the Preliminary Document in Section 8.1 (Principles of Ecological Sustainable Development).
1.2 Economic and Social Matters	1.2.1 An analysis of the economic and social impacts of the action, both positive and negative. 1.2.2 Details of any public consultation activities undertaken and their outcomes. 1.2.3 Details of any consultation with Indigenous stakeholders. 1.2.4 Details of any Underwater Cultural Heritage (UCH) surrounding the proposed action. Guidelines - Assessing and Managing Impacts to Underwater Cultural Heritage in Australian Waters Underwater Cultural Heritage Guidance for Offshore Developments	This information has been provided within the Preliminary Document in Section 8.2 (Economic and Social Matters).

Table C: General content, style, and formatting requirements		Response / Location
	Indigenous engagement 1.2.5 Identify existing or potential native title rights and interests, including any areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the proposed action and the potential for managing those impacts. 1.2.6 Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. 1.2.7 The department considers that best practice consultation, in accordance with the *Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act* (2016) includes: a. identifying and acknowledging all relevant affected Indigenous peoples and communities. b. committing to early engagement. c. building trust through early and ongoing communication for the duration of the project, including approvals, implementation, and future management. d. setting appropriate timeframes for consultation; and e. demonstrating cultural awareness. 1.2.8 Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities. 1.2.9 Projected economic costs and benefits of the project, including the basis for their estimate through cost/benefit analysis or similar studies. 1.2.10 Employment opportunities expected to be generated by the project (including construction and operational phases).	

Table C: General content, style, and formatting requirements		Response / Location
1.3 Environmental record of the person proposing to take the action	1.3.1 Include details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against: a. the person proposing to take the action b. for an action for which a person has applied for a permit, the person making the application. c. if the person is a body corporate – the history of its executive officers in relation to environmental matters; and d. if the person is a body corporate that is a subsidiary of another body or company (the parent body) – the history in relation to environmental matters of the parent body and its executive officers.	This information has been provided in Section 1.5.1 (History of Responsible Environmental Management)
2. Content, style, and formatting requirements		
2.1 Style	2.1.1 Be written so that any conclusions reached can be independently assessed. Include all key claims, findings, proposals, and undertakings in the main document.	This has been noted and considered during preparation of the Preliminary Document.
2.2 Format	2.2.1 Be in a suitable format to be published in hardcopy (A4 or A3 size, with maps and diagrams in A4 or A3 size and in colour) and published in electronic format (e.g., MSWord or PDF) on the internet.	This has been noted and considered during preparation of the Preliminary Document.
2.3 Content	2.3.1 Include a cross-reference table indicating where the information fulfilling the requirements in Table A and B is included in the preliminary documentation.	Provided in this document.
2.4 Relevant standards, policies and other guidance material	Refer to all relevant standards, policies and other guidance material published by the department. Any instances where published guidance is not followed must be justified. Where no Commonwealth standards exist, state government and industry standards may be useful. Relevant standards, policies and other guidance material include, but are not limited to: ***Formatting*** a. Department of Agriculture, Water and the Environment (2021). Guide for providing maps and boundary data for EPBC Act projects. Canberra, ACT: Commonwealth of Australia. Available from: https://www.environment.gov.au/system/files/resources/5bb0509e-c4b5-	All relevant standards, policies and other guidance materials published by DCCEEW have been referenced within the following sections of the Preliminary Documentation: - Section 1.3.6: Other Relevant Standards, Policies and Guidance Materials - Section 6.2: Summary of Impacts to Matters of National Environmental Significance - References

Table C: General content, style, and formatting requirements		Response / Location
	4f7a-910b-5b04d82db491/files/epbca-maps-data- guidelines.pdf b. Department of the Environment (2003). Criteria for Determining ESD Relevance. Commonwealth Department of Climate Change, Energy the Environment and Water, Canberra. https://www.dcceew.gov.au/sites/default/files/documents/esd-criteria-relevance.pdf c. Department of the Environment (2014). Environmental Management Plan Guidelines. Canberra, ACT: Commonwealth of Australia. Available from: https://www.agriculture.gov.au/sites/default/files/documents/environmental-management-plan- guidelines.pdf ***Offsets*** d. Department of Sustainability, Environment, Water, Population and Communities (2012). Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy. Canberra, ACT: Commonwealth of Australia. Available from: https://www.environment.gov.au/system/files/resources/12630bb4-2c10-4c8e-815f-2d7862bf87e7/files/offsets-policy_2.pdf ***All species*** e. Department of the Environment, Water, Heritage and the Arts (2013). EPBC Act Policy Statement – Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Available from: https://www.dcceew.gov.au/sites/default/files/documents/nes-guidelines_1.pdf ***Mammals*** f. Department of the Environment (2015). *Conservation Management Plan for the Blue Whale - A Recovery Plan under the Environment Protection and Biodiversity Conservation Act 1999*. Canberra, ACT: Commonwealth of Australia. Available from: http://www.environment.gov.au/biodiversity/threatened/publications/recovery/blue-whale-conservation- management-plan g. Threatened Species Scientific Committee (2022). *Listing Advice* Megaptera novaeangliae *Humpback Whale*. Canberra: Department of Agriculture, Water and the Environment. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/38-listing-advice-26022022.pdf.	

Table C: General content, style, and formatting requirements		Response / Location
	h. Department of Climate Change, Energy, the Environment and Water (2024). *National Recovery Plan for the Southern Right Whale* Eubalaena australis. Department of Climate Change, Energy, the Environment and Water, Canberra. Available from: http://www.dcceew.gov.au/environment/biodiversity/threatened/recovery-plans/southern-right-whale. i. Department of the Environment (2025) Conservation Advice for *Orcaella heinsohni* (Australian snubfin dolphin) j. Department of the Environment (2025) Conservation Advice for *Sousa sahulensis* (Australian humpback dolphin) k. Department of the Environment (2012) Species group report card cetaceans ***Marine Turtles*** l. Department of the Environment and Energy (2017). *Recovery Plan for Marine Turtles in Australia*. Australian Government, Canberra. Available from: http://www.environment.gov.au/marine/publications/recovery-plan-marine-turtles-australia- 2017 m. Threatened Species Scientific Committee (2009). *Commonwealth Listing Advice on* Dermochelys coriacea. Department of the Environment, Water, Heritage and the Arts. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/1768-listing-advice.pdf. n. Department of the Environment (2012) Species group report card - marine reptiles ***Sharks*** o. Department of Sustainability, Environment, Water, Population and Communities (2013). *Recovery Plan for the White Shark* (Carcharodon carcharias). Department of Sustainability, Environment, Water, Population and Communities. Available from: http://www.environment.gov.au/biodiversity/threatened/recovery-plans/recovery-plan-white-shark- carcharodon-carcharias. p. Department of the Environment (2014) Recovery Plan Grey Nurse Shark q. Department of the Environment (2014 Issues paper Grey Nurse shark	

Table C: General content, style, and formatting requirements		Response / Location
	r. Department of the Environment (2015) Conservation Advice Whale Shark (*Rhincodon typus*) ***Sea Snakes*** s. Department of the Environment (2010) Approved Conservation Advice for *Aipysurus foliosquama* (Leaf-scaled Sea Snake) t. Department of the Environment (2010) Approved Conservation Advice for *Aipysurus apraefrontalis* (Short-nosed Sea Snake) ***Sawfish*** u. Department of the Environment (2009) Approved Conservation Advice for *Pristis clavata* (Dwarf Sawfish) v. Department of the Environment (2008) Approved Conservation Advice for Green Sawfish (Pristis zijsron) w. Department of the Environment (2015) Sawfish river sharks multispecies recovery plan ***Other*** x. Department of the Environment (2012) Marine bioregional plan for the North-west Marine Region North-west Marine Bioregional plan y. Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) (2011). *Survey guidelines for Australia's threatened fish. EPBC Act survey guidelines 6.4* . z. Department of Climate Change, Energy, the Environment and Water (2024). *National Guidelines for the Survey of Cetaceans, Marine Turtles and the Dugong* aa. Department of the Environment and Water Resources (2007) *Industry Guidelines on the Interaction between offshore seismic exploration and whales* bb. Department of the Environment and Energy (2017) *Australian National Guidelines for Whale and Dolphin Watching 2017* cc. Department of the Environment and Energy, 2020. *National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds*.	

Table C: General content, style, and formatting requirements		Response / Location
	Threat Abatement Plans dd. Department of the Environment and Energy (2018). Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (2018). Canberra, ACT: Commonwealth of Australia. Available from: http://www.environment.gov.au/biodiversity/threatened/publications/tap/marine-debris-2018. ***Indigenous Consultation*** ee. Engaging with First Nations People and Communities on Assessments and Approvals under Environment Protection and Biodiversity Conservation Act 1999 (interim guidance) - DCCEEW ***Unexpected Finds*** • Remains of vessels (including associated articles such as anchors or other artefacts) that have been in Australian waters for 75 years of more are automatically protected under the UCH Act, whether or not their location is currently known. • Protected UCH cannot be adversely impacted without a permit. This includes any indirect adverse impacts. • In accordance with section 40 of the UCH Act discovery of UCH must be reported to the Minister for the Environment and Water within 21 days of discovery. • The Western Australian Museum's Maritime Archaeology Department assists with the day-to-day administration of the UCH Act and can also advise on any requirements of the Maritime Archaeology Act 1973 (WA). • It is advisable to have an unexpected finds protocol for both Underwater Cultural Heritage (UCH) and Aboriginal Cultural Heritage in the event that something is uncovered during spoil disposal (or dredging).	
2.5 Maps, diagrams and	2.5.1 Maps, plans, diagrams, technical information (e.g., specifications, schematics) and images provided must be clearly annotated, in	This has been noted and considered during preparation of the Preliminary Document.

Table C: General content, style, and formatting requirements		Response / Location
images	colour and of high resolution. 2.5.2 All maps submitted as part of the response must be consistent with the department's Guide for providing maps and boundary data for EPBC Act projects (2021)	
2.6 Referencing standards	2.6.1 Reference all sources using the Harvard standard of referencing. Ensure that other supporting documents (e.g., academic studies, regulatory standards) are publicly accessible, with electronic links provided where possible.	All sources used within the Preliminary Document have been referenced in Harvard standard, are publicly accessible, and electronic links/doi's have been provided where possible.
2.7 Evidence based conclusions	2.7.1 Where appropriate, the information provided must be supported by: a. Evidence based conclusions based on the best available peer-reviewed scientific literature with supporting references cited or expert opinion provided and/or the views of suitably qualified experts. b. Scientifically robust methodologies that are appropriate for purpose, and sufficient description of the methodology used and justification of why the methodology was selected. 2.7.2 Include detailed technical information, studies or investigations necessary to support the information in the stand-alone document as appendices.	This has been implemented during preparation of the Preliminary Document.
2.8 Inclusion of sensitive information	2.8.1 Not contain any commercial in confidence markings 2.8.2 If the preliminary documentation contains sensitive information, please indicate and discuss this with the assessment officer. 2.8.3 Redact the contact details of departmental officers. 2.8.4 Include the names, roles and qualifications (where relevant) of all persons involved in preparing the preliminary documentation. 2.8.5 The response will form part of the preliminary documentation that must be published for public comment.	There is no sensitive information within the Preliminary Document.
2.9 Ecological data	2.9.1 The preliminary documentation must include an appendix of occurrence records (both sightings and evidence of presences) for all listed threatened and migratory species identified during field	No field surveys for the Proposed Action have been conducted that have identified occurrence records. As such, Mardie Minerals has provided occurrence records

Table C: General content, style, and formatting requirements		Response / Location
	surveys for the proposed action. This data may be used by the department to update the relevant species distribution models that underpin the publicly available Protected Matters Search Tool (PMST). 2.9.2 The species occurrence records must be provided in accordance with the department's *Guidelines for biological survey and mapped data* (2018) using the species observation data template provided with this request for additional information. Sensitive ecological data must be identified and treated in accordance with the department's *Sensitive Ecological Data – Access and Management Policy V1.0* (2016) or subsequent revision.	that have been obtained from MFO sightings during construction of the Approved Proposal.

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC 2024/10054

Mr Snyman Van Straaten
Manager of Environmental Approvals and Compliance
Mardie Minerals Pty Ltd
Level 1
1 Altona Street
West Perth WA 6005

Via email: snyman.vanstraaten@bciminerals.com.au

Further information required for Preliminary Documentation for Offshore Dredge Spoil Disposal – Mardie Project, Onslow, WA

Dear Mr Van Straaten

I am writing to you about your proposal to undertake construction to transport and dispose of dredge spoil from the capital and maintenance dredging activities approved in EPBC 2018/8236 and EPBC 2022/9169 within a defined offshore spoil ground 'DMPA4' (proposed action area), Western Australia (WA) state waters, northeast of Onslow, WA. (see EPBC referral 2024/10054).

On 14 May 2025, a delegate of the Minister for the Environment and Water decided that the proposed action is a controlled action and that it will be assessed by Preliminary Documentation.

On 2 June 2025, a further information request, under s95A(2) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), was sent to form the basis of the Preliminary Documentation (PD).

On the 18 July 2025, you provided your response to the Request for Further Information (RFI). Following the review of the RFI, the department now requests that you provide the further information on the PD provided, as outlined in Attachment A.

Specifically, you are asked to provide the following information:

- Provide comment on the changes to the maintenance dredge volume estimates from those provided at the referral stage.
- Provide additional information on how the proposed action represents a lower impact pathway for Marine Matters of National Environmental Significance (MNES) versus the onshore disposal conditioned under the related Mardie Project approvals (EPBC 2018/8236 and EPBC 2022/9169).
- Justification for not adopting the observational zones recommended by the Noise memorandum.
- Clarify the use and intent of the term 'Management Zones' in the PD and the Dredge and Spoil Disposal Management Plan (DSDMP).

The department considers these items could be sufficiently addressed through a supplementary addendum to the PD. If the request information is addressed through amendment to the previously submitted PD, please provide detail comment on where and how the documentation has been updated.

Details on the assessment process for the project and the responsibilities of the proponent are set out in the EPBC Act — Environment Assessment process fact sheet. Further information on the referral and assessment process can be found on the department's website.

If you have any questions about the assessment process or the further information required, please contact Parash Subedi, by email to parash.subedi@dcceew.gov.au and CC NorthWA.Section@dcceew.gov.au and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely,

Dr Candace Cooke
Director
North WA Section
Environmental Assessments West

19 August 2025

Attachment A: Request for further information for Preliminary Documentation (below)

EPBC 2024/10054 – Offshore Dredge Spoil Disposal – Mardie Project, Onslow, WA

Attachment A: Request for further information (RFI) under section 95A(2) and Preliminary Documentation requirements

RFI received from DCCEEW 20 August 2025		BCI Response / Location of update in Preliminary Documentation
Table A: Request for further information		
I. Referral Decision The following species were triggered under Listed Threatened Species and Communities (s18 and s18A) and will need to be considered throughout the Preliminary Documentation **Sea Snakes** • Leaf-scaled Sea Snake (*Aipysurus foliosquama*) - Critically Endangered • Short-nosed Sea Snake (*Aipysurus apraefrontalis*) - Critically Endangered **Marine Turtles** • Loggerhead Turtle (*Caretta caretta*) – Endangered, Migratory • Leatherback Turtle (*Dermochelys coriacea*) – Endangered, Migratory • Green Turtle (*Chelonia mydas*) – Vulnerable, Migratory • Hawksbill Turtle (*Eretmochelys imbricata*) – Vulnerable, Migratory • Flatback Turtle (*Natator depressus*) – Vulnerable, Migratory **Marine Mammals** • Blue Whale (*Balaenoptera musculus*) – Endangered, Migratory • Australian Snubfin Dolphin (*Orcaella heinsohni*) – Vulnerable, Migratory • Australian Humpback Dolphin (*Sousa sahulensis*) – Vulnerable, Migratory • Humpback Whale (*Megaptera novaeangliae*) – Migratory • Australian Bottlenosed Dolphin (*Tursiops aduncus* (Arafura/Timor Sea populations)) – Migratory • Dugong (*Dugong dugon*) – Migratory **Sawfish** • Dwarf Sawfish (*Pristis clavata*) – Vulnerable, Migratory • Green Sawfish (*Pristis zijsron*) – Vulnerable, Migratory • Narrow Sawfish (*Anoxypristis cuspidata*) – Migratory **Sharks and Rays** • White Shark (*Carcharodon carcharias*) – Vulnerable, Migratory • Grey Nurse Shark (*Carcharias taurus* west coast population) – Vulnerable, Migratory • Whale Shark (*Rhincodon typus*) – Vulnerable, Migratory • Reef Manta Ray (*Mobula alfredi* listed as *Manta alfredi*) – Migratory • Giant Manta Ray (*Mobula birostris* listed as *Manta birostris*) – Migratory		Noted. The species listed have been assessed for potential impact explicitly by Mardie Minerals in the Preliminary Documentation (see response to item 2.1 below, and also Attachment 23 to the Preliminary Document).
1. Updated Maintenance Dredge Estimates		
1.1	The department recognises that the estimated maintenance dredge values provided in the PD (Section 1.1.1b) are significantly greater than the values provided in the RFI during the Referral stage. The uncertainty of forecasting maintenance dredging requirements across extended timeframe is noted by the department and the precautionary approach of overestimation is endorsed to address potential impacts to MNES. Noting this, the department is seeking clarification on how the approximately 80% increase in the maintenance dredging volume has been considered in the impact assessment and if/how this has influenced BCI consideration of significant residual impact to MNES resulting from the proposed action.	The Department's endorsement of the precautionary approach being undertaken with regards to maintenance dredge volume estimation is noted and welcomed. A detailed response to this RFI item is provided in Attachment 22 of the Preliminary Document. Section 1.1.1(b) (page 4) of the Preliminary Document has also been updated to reference Attachment 22. In summary, the estimated increase in maintenance dredge volume is not predicted to change to the already precautionary assessment of residual impacts associated with disposal of maintenance dredge spoil at sea because: 1. There is no change to direct impacts resulting from smothering of benthic substrate/habitats already predicted to result from capital and maintenance dredging. Additional maintenance volumes will not smother additional habitat, instead they will simply result in greater depth of dredge spoil at the existing capital disposal site. 2. The ZOMI and ZOHI boundaries for disposal of maintenance spoil are expected to be smaller than those already identified in the sediment plume modelling for capital dredging due to: a. The dredging/disposal volumes and rates will be significantly lower than those generated during the capital dredging.

RFI received from DCCEEW 20 August 2025		BCI Response / Location of update in Preliminary Documentation
		b. The higher sand and lower fines content of maintenance spoil limits turbidity and spread of the disposal plume. c. Mardie Minerals' ongoing commitment to best-practice disposal and monitoring methods, including controlled disposal within small dump boxes within DMPA 4, turbidity monitoring as per the Dredge and Spoil Disposal Management Plan (Att_2 DSDMP 2025), and adaptive management through baseline, progress, and clearance surveys before, during, and after dredging 3. Controls already in place to minimise the potential for impacts on MNES resulting from vessel transit and disposal are precautionary and will ensure any additional vessel activity required to dispose of higher maintenance spoil volumes continues to present a consistent and low risk to MNES
1.2	Provide further explanation of the methods used to estimate maintenance dredge volume outlined in section 1.1.1b. Outline the likelihood of further re-estimation of maintenance dredge volumes and how adaptive management will be informed to mitigate impacts to MNES.	A detailed response to this RFI item is provided in Attachment 22 of the Preliminary Document. Section 1.1.1(b) (page 4) of the Preliminary Document has also been updated to reference Attachment 22. In summary, the increase in dredge volume was due to: 1. Previous modelling of sediment entrainment by Baird (2019) identified sedimentation rates (and hence maintenance dredge volumes) for the previous, larger dredge channel (800,000m3) in six separable portions. 2. Revision of the dredge design in 2024, prior to the submission of this sea disposal referral, resulted in a significant reduction in the amount of capital dredging required, down to 355,000m3 with some of these separable portions no longer required to be dredged. The volume of predicted maintenance dredge spoil was adjusted downward accordingly. 3. Subsequent analysis of maintenance spoil volumes was undertaken by WSP Australia in 2025. WSP Australia have based their higher estimates of maintenance dredging volumes on sedimentation rates observed at the nearby port of Ashburton. 4. In line with the precautionary approach taken by Mardie Minerals for this referral, we have subsequently updated our maintenance dredge volume estimates to align with the higher volumes estimated by WSP Australia. The likelihood of further re-estimation/adaptive management is summarised as follows: 5. Sedimentation rates, and therefore maintenance dredging volumes, are particularly difficult to accurately estimate with confidence using numerical modelling as they are heavily dependent on the variability of natural conditions and can fluctuate significantly from year to year. 6. In practice, the most reliable sedimentation rates for channels are based on monitoring and dredging records built up over time after construction. 7. In Section 3.4, page 34, Section 4, page 40 and Section 8, page 65 of the Dredge and Spoil Disposal Management Plan (Att2_DSDMP 2025), Mardie Minerals sets out the regular monitoring of the dredge pocket that will be undertaken to determine and manage the necessary maintenance dredging schedule throughout the life of the project. 8. Any change to potential environmental impacts (including reductions to potential impacts) resulting from Mardie Minerals monitoring and management of actual maintenance dredging volumes will be reported to the regulator as part of our regular reporting required under the PD/DSDMP.
2. Acceptability of impact to Marine MNES given existing Marie Project approvals conditions (EPBC2018/8236 and EPBC 2022/9196)		
2.1	The department recognised the considerate body of work conducted by BCI in exploring alternatives disposal action (onshore and offshore). However, it is not clear to the department how the information presented in Table 11 (Potential Impacts to Marine MNES Fauna) (section 6.1 of the PD) represents a lower impact pathway to Marine MNES impact than the onshore disposal required by previous approval condition 36(g) of EPBC 2022/9169 "'*To avoid and mitigate harm to marine fauna and their habitats from dredging operations, the approval holder must: …. ensure that all dredged material is deposited onshore within the ponds and terrestrial infrastructure*" and condition 18(e) of EPBC 2022/9169 "*To minimise impacts to marine fauna and their habitats from dredging operations, the approval holder must …. ensure that all dredged material is deposited onshore within the*	Noting there is no Condition 18(e) of EPBC 2022/9169, Mardie Minerals assume the Department is referring to EPBC 2022/9169 Condition 36(g) "*To avoid and mitigate harm to marine fauna and their habitats from dredging operations, the approval holder must:… ensure that all dredged material is deposited onshore within the ponds and terrestrial infrastructure*" The Preliminary Documentation (PD) has been updated to include Attachment 23 (referenced in Section 5.1.1) which contains a risk assessment of the potential impact to MNES fauna (marine and terrestrial) and how the proposed shift from onshore to offshore disposal best mitigates potential impacts to MNES (marine and terrestrial) in accordance with ~~of~~ Condition 36(g) of approvals EPBC 2018/8236 and Condition 36(g) of EPBC

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	ponds and terrestrial infrastructure within the development envelope." Provide further information on how the proposed shift from onshore to offshore disposal best mitigates potential impacts to Marine MNES and is in accordance with Condition 36(g) of approvals EPBC 2018/8236 and condition 18(e) of EPBC 2022/9169. A summary highlighting the changes to impacts by species (species outlined in item I) would be suitable in addressing this matter.	2022/9169. The risk assessment (Attachment 23) is based on the expected methodology for the disposal of dredge spoil as per the submissions received from contractors from the previous onshore tender process. Attachment 23 considers the potential impacts by species (as outlined in item I). A summary enabling more direct comparison of the risk assessments for the onshore and offshore disposal of dredge spoil has been provided in Attachment 24.
3. Observation Zones for Dredge disposal zones		
3.1	The Noise memorandum commission by BCI to address the previous RFI request, recommended the adoption of a 3 kilometre (km) observation zone during the disposal of dredge spoil, to mirror the existing observation zone for dredging activity and to mitigate noise impacts to Cetacean (Low and High frequency and Sirenians). Please provide justification on why these recommendations have not been adopted in the PD and Dredge and Spoil Disposal Management Plan (DSDMP). The noise memorandum identified that noise induced behavioural responses for individual (SPL Rmax) is estimated at a radius of 3.14 km and the temporary threshold shift (TTS) for hearing damage and/or impairment 0.17km. The department recognises the existing avoidance, minimization, mitigation outlined by BCI but request further justification given the 'moderate' risk classifications provided in the noise memorandum, the recommendation by MScience to adopt and align with the existing observation zones for dredging and the proposed action occurring in a Biologically Important Area (BIA) for Humpback whales.	Whilst we note that observation zones for sea dumping at other disposal sites nationally are typically 1,000m or less and we cannot find any evidence to suggest that larger observation zones will reduce the risk of potential impacts to MNES, Mardie Minerals has updated the Preliminary Documentation to align with the recommendations in the MScience (Att17) noise memorandum as follows: ○ Section 5.2.1 (b) (page 59) now refers to the exclusion zone and observation zone as 300m and 3,000m, respectively; and ○ Figure 13 (page 60) has been updated to reflect the exclusion zone and observation zone as 300m and 3,000m, respectively. Table 19 (page 88) in Section 8 of the DSDMP (Rev 5) (Attachment 2) has been updated to reflect the exclusion zone and observation zone as 300m and 3,000m, respectively.
4. The Term "management Zones" in the Dredge and Spoil Disposal Management Plan (DSDMP)		
4.1	The department seeks clarification on the use of the term 'Management Zones' used in the PD and DSDMP. The department's understanding is that the term is used to refer to both the observation and/or exclusion zones. As such all-mitigation measure which state reference to a 'management zone' are application to both the observation and exclusions zones and by default the entirety of the observation zone due to their increase size and overlap with the exclusion zones. If this is not the intention BCI, and the term 'Management Zones' has been used in some cases to refer solely to the exclusion zone, please clarify as such and provide clarifying where the term has been used across the PD and DSDMP.	Attachment 2 (DSDMP (Rev 5)) has been updated such that the acronyms, abbreviation & definitions list (Page v) includes the term 'management zone' defined as "the area including the exclusion zone and the observation zone". Likewise, the Preliminary Documentation 'Definitions Table' (page 87) has been updated to include the above definition of the 'Management Zones',