Decision Report

Application for Works Approval

Part V Division 3 of the Environmental Protection Act 1986

Works Approval Number W6666/2022/1

Applicant Paulsens East Iron Ore Pty Ltd

ACN 643 291 230

File number DER2021/000719

Premises PEIO Project Transshipment Facility

Warrirda Road Onslow Western Australia 6710

Legal description

As defined by the coordinates in Schedule 2 of the works

approval and as depicted in Schedule 1

Date of report 5 January 2023

Proposed Decision Intent to grant works approval

Alana Kidd

Manager, Resource Industries

an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the operation of the premises. As a result of this assessment, works approval W6666/2022/1 (W6666) has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary and overview of premises

On 14 December 2021, Paulsens East Iron Ore Pty Ltd (the Applicant), a wholly owned subsidiary of Strike Resource Limited, submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is for the operation of a transshipment anchorage area (TAA) for the bulk loading of iron ore. The premises relates to category 58 and assessed production capacity under Schedule 1 of the Environmental Protection Regulations 1987 (EP Regulations) which are defined in works approval W6666/2022/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6666/2022/1.

Iron ore product produced from the Paulsens East Iron Ore (PEIO) Project will be transported to an offsite stockpile site where it will be conditioned to above the Dust Extinction Moisture (DEM) level prior to loading into rota-boxes. The conditioned ore will then be transported to the Port of Ashburton for loading onto a Special Purpose Transshipment Vessel (SPTV) at the Ashburton Cargo Wharf (ACW) under works approval W6642/2022/1. The SPTV has a cargo capacity of approximately 10,000 -15,000 tonnes (t), with loading of the vessel taking approximately fifteen hours.

The SPTV will then transport the conditioned ore for approximately 3 hours or 26 km (14 nautical miles) offshore to a TAA currently located in State Waters, as defined under Commonwealth legislation, *Coastal Waters (State Power) Act 1989* and the *Seas and Submerged Land Act 1973*. An Ocean-Going Vessel (OGV) will be anchored in the TAA and the SPTV will berth alongside the OGV for loading at a nominated maximum rate of 10,000 tonnes per day. Once secured, loading will take approximately 5 - 6 hours to complete for an Ultramax ship, with five cycles repeated for an OGV with a capacity of 60,000 Mt.

A series of below deck or covered conveyors and a boom will be used to transfer the iron ore from the SPTV to the OGV. After discharging the ore, the SPTV will return to Port and the OGV will transport the ore to overseas markets for export.

The TAA is approximately 1107 hectares in area, with 2 anchorage points available to the OGV and SPTV. The main features of the SPTV includes:

- Cargo capacity of approximately 10,000 -15,000t
- Conveying system with dust covers and collectors at transfer locations as well as a sock on the loading boom
- Dust curtain fitted on the edge of the open hold for use during loading operations
- Sump to collect deck and external surface washdown water and internal wash tanks of

approximately 240 m³ capacity

- Sewage treatment plant to process approximately 4 6 m³ per day
- 16.32 m³ capacity grey water tank installed on-board
- Rain Maker Reverse Osmosis (RO) plant capable of processing up to 40 m³ per day
- Storage of up to 350 m³ of fuel on-board the volume will reduce as fuel is consumed.

2.2.1 Project timelines

The TAA will form an integral part of the larger PEIO Project, which will see the export of an estimated 6 million tonnes of iron ore product from PEIO mine over a four-year period, with commissioning of the mine planned to commence in 2022.

2.2.2 Operational control

The proposed TAA will be located in state waters, approximately 26 km (14 nautical miles) offshore from the Port of Ashburton. Currently there is no authority that has legislative power to authorise commercial shipping operations in state waters in Western Australia, as a long-held assumption exists that transshipment loading operations are to take place within Port Authority boundaries.

The Pilbara Ports Authority (PPA) have operational control over the Port of Ashburton under the *Port Authorities Act 1999 (WA)*. PPA are currently working with the Department of Transport (DoT) Marine division to extend the Port boundary to encompass the proposed TAA premises. PPA has estimated that the final determination on the boundary extension will be made in April or May of 2023.

The DoT – Maritime division is the designated Hazard Management Agency for marine oil pollution and marine transport emergencies, and is responsible for ensuring effective prevention, preparedness, response, and recovery to these hazards within the State.

DWER have received confirmation from the DoT Marine division and PPA that the authorities are comfortable with DWER issuing the works approval in state waters, until the PPA boundary extension is finalised. Once approved, it is proposed that the Applicant will apply to amend this works approval to reflect the premises new location within the revised Port of Ashburton boundary.

The Department notes that the Applicant will need to apply for a category 58 licence for ongoing operation of the premises prior to the time limited operations phase of the works approval finishing.

2.2.3 Material handling

The SPTV will be loaded with a single ore product, either lump or fines. PEIO will produce a 3:1 ratio of lump to fines product. The SPTV will berth alongside the OGV for loading and once secured, a boom will be manoeuvred into position over the hold of the OGV. A series of below deck or covered conveyors will transfer the material from the SPTV to the OGV. The sides of the hopper (below the hold) are inclined to prevent blockages and allow for free flow of material. The gates at the bottom of each hold open, depositing the material onto a below deck conveyor. The conveyor moves the material horizontally below the hold and onto an incline conveyor which transports the material upward and into the loading arm. These external conveyors are fitted with covers. A sock is attached to the end of the loading arm which will discharge the material into the hold of the OGV.

2.2.4 Material characterisation

An estimate of the typical mineral composition is outlined below.

Mineral Phase	Concentration (w / w %)
Lumps Product	
Hematite	10 – 30
Kaolinite	20 – 50
Quartz	10 – 30
(Respirable Crystaline Silica)	0.002
Goethite	5 – 20
Mica	5 – 20
Calcite	< 5
Fines Product	
Hematite	> 60
Kaolinite	10 - < 30
Quartz	5 – 15
(Respirable Crystaline Silica)	0.05
Goethite	< 10
Mica	< 10

The Safety Data Sheets provided with the application classifies the lumps and fines as non-hazardous according to Globally Harmonised System(GHS) Classifications and is not toxic. The iron ore product contains trace levels of respirable crystalline silica (CAS 14808-60-7) and asbestos mineral fibre.

Moisture content

Following processing at the PEIO mine site, the iron ore product will be transported to an off-site stockpile approximately 18 km south from the Port, where it will be conditioned to a level above the DEM level. Based on test results (May 2021) the DEM for PEIO project lump is 2.9% and 4.3% for fines.

Leachability

Leachability test work was undertaken by SGS Australia in accordance with the relevant Australian Standards (Australian Standard Leaching Procedures). The test work indicated that the iron ore product represents a low risk if the product were inadvertently spilled into the marine environment.

2.3 Legislative context and other approvals

Legislation	Details
Part V of the EP Act	The Applicant has applied for a works approval to operate under Category 58 of Schedule 1 of the <i>EP Regulations 1987</i> which relates to bulk material (other than salt) loading and/or unloading of a vessel. Loading activities that exceed 100 tonnes per day trigger this category and regulation under the EP Act.
	DWER regulates industrial emissions and discharges to the environment through a works approval and licensing process, under Part V of the EP Act. The EP Act requires a works approval to be obtained before constructing a prescribed premises and makes it an offence to cause an emission or discharge unless a licence or registration is held for the premises. DWER notes that following the completion of the Time Limited Operation phase of this works approval, the Applicant will need to apply for a licence for ongoing operation of the TAA.
Port Authorities Act 1999 (WA) Port Authorities Regulations 2001 (WA)	The Pilbara Ports Authority (PPA) have operational control over the Port of Ashburton under the <i>Port Authorities Act 1999 (WA)</i> . PPA is governed by a board of directors as per the Port Authorities Act and is appointed by the Minister for Planning and Infrastructure.
MARPOL (73/78)	The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.
	The Convention includes regulations aimed at preventing and minimizing pollution from routine operation of ships as well as accidental pollution. The Convention currently includes six technical Annexes and Special Areas with strict controls on operational discharges are included in most Annexes.
	The MARPOL Convention was adopted on 2 November 1973 at the International Maritime Organisation (IMO), in response to a multiple tanker accidents in 1976-1977. As the 1973 MARPOL Convention had not yet entered into force, the 1978 MARPOL Protocol absorbed the parent Convention. The combined instrument entered into force on 2 October 1983 (Annexes I and II). Subsequent Annexures III, IV, V and VI have since been entered into force (IMO, 2019a).

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary. It should be noted that the significant distance (>7km) between noise generating loading activities at the TAA and sensitive receptors will prevent noise disturbance and consequently noise as an emission has been omitted from Table 1 below.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Operation (inc	cluding environm	ental commission	oning and time limited operations)
Dust	Loading of iron ore at TAA, ore transfer from SPTV to OGV with the use of a conveyor.	Air / windborne pathway	 transhipper unloaded into OGV in authorised prescribed premises location only ore conditioned to above DEM level at off-site stockpile site use of dust curtain around SPTV hold as required dust collectors fitted at transfer points on the SPTV conveying system loading of OGV conducted via transhipper conveyors. SPTV conveyors and boom fitted with covers and socks to minimise dust emissions conveyors loaded inside the OGV hold the sides of the SPTV (below the hold) are inclined to prevent blockages and allow for free flow of material. visual inspections will be taken at regular intervals throughout the ship loading operations by area supervisors mitigating actions such as slowed loaded rate, increased dust suppression and/or temporary suspension of works may be implemented to reduce dust emissions. where possible, loading activities will be avoided in windy conditions selection of reputable contractor operator licensing and VOC (Verification of Competency) process internal audits and inspections
Spillage of iron ore into marine environment	Loading of iron ore product from TAA, ore transfer from	Wind erosion from exposed ore while the product is	 Marine and Port laws adhered to transport to be conducted as per applicable Procedures following Port laws

Emission	Sources	Potential pathways	Proposed controls
	SPTV to OGV with the use of a conveyor	being transferred via boom from the SPTV to the OGV Direct discharge into the marine environment (spill)	 Operator licensing and VOC (Verification of Competency) process SPTV emptied into the OGV in authorised location only Equipment and vessels adequately maintained and certified Manufacturers accredited maintenance regime for SPTV Unloading and material handling to be avoided in windy and/or choppy conditions when necessary Visual monitoring by supervision Selection of reputable contractor Operator licensing and VOC (Verification of Competency) process Internal audits and inspections Applicant will report any marine spill incidents to the PPA and remediate as per their direction Leachability test work will be conducted in the event of an iron ore spillage into marine waters In the event of spillage on the SPTV, the deck can be washed down. All water and material will report to an onboard sump to be stored in internal wash tanks; loading operations will temporarily cease during windy weather conditions (e.g. cyclones in the vicinity)
Spillage of hydrocarbons and/or chemicals	Potential chemicals and additives contained in deck wash down water Potential additives contained in reverse osmosis brine discharge Onboard fuel storage leak	Direct discharge into the marine environment (spill) Chemicals and additives contained in deck wash water discharging to the marine environment Malfunction of the oil discharge monitoring and control	 Marine and Port laws to be adhered to Operations conducted only in approved areas No planned discharges within premises boundary e.g. brine discharge and treated sewage The SPTV uses the Rainman water maker system for its reverse osmosis process. The system draws seawater up, filters out sediment and particulates, then puts the clean seawater under high pressure to pass through an RO membrane. No chemical additives are used during the process. The SPTV is an internationally certified vessel with Lloyds certification. The vessel will be registered with the Australian Maritime Safety Authority (AMSA) and will follow all AMSA/International Maritime Organisation (IMO) regulations for the carriage of bunkers and other chemicals

Emission	Sources	Potential pathways	Proposed controls
		system resulting discharges with an oil content >15 mg/L into the marine environment	The SPTV will have a survey certificate and International Oil Pollution Prevention Certificate (IOPP) which signifies the vessel and oil discharge monitoring and control system and oil filtering equipment has been surveyed in accordance with MARPOL Annex 1- Regulations for the Prevention of Pollution by oil, Regulation 6.
			If oily sludge needs to be removed then a subcontractor would remove via truck and dispose at a certified recycling center - typically use TOXFREE as per MARPOL Annex I, Regulation 14.
			Operator licensing and VOC process
			Manufacturers accredited maintenance regime for SPTV
			Pre-start checklist is completed by operator prior to commencement of shift
			Visual monitoring by supervision
			Selection of reputable contractor
			Operator licensing and VOC (Verification of Competency) process
			Internal audits and inspections
			No chemicals or additives will be used for washdown, only seawater
Potentially contaminated surface water run-off	Wash water from the SPTV containing iron ore product or diluted cleaning chemicals	Contaminated washdown water discharge into the marine environment	 Marine and Port laws to be adhered to e.g., the International Convention for the Prevention of Pollution from Ships 1973 and 1978 (MARPOL 73/78) The SPTV will only wash when more than 12
	Chemicals	onviioniinone	nautical miles from the coast as per MARPOL 73/78. If washing is required inside 12 nautical miles of the coast then wash water is held in wash tanks until it can be disposed of onshore.
			No chemicals will be used for washdown on the SPTV, only seawater
			Washdown of the OGV within Australian waters is prohibited
			All water and material will report to an onboard sump on the SPTV to be stored in wash tanks of 240 m³ capacity
Discharge of untreated sewage	SPTV	Direct discharge to marine environment	 No planned discharges from the SPTV On-board sewage treatment plant to process approximately 4 - 6 m3 per day - International Maritime Organisation (IMO) certified and has Ship Sanitation

Emission	Sources	Potential pathways	Proposed controls
			Certification from the Department of Health Marine and Port laws to be adhered to e.g., Annexure IV of MARPOL 73/78
Discharge of brine from the reverse osmosis plant (Rain Maker)	SPTV	Direct discharge to marine environment	 No planned discharges from the SPTV Marine and Port laws to be adhered to e.g., MARPOL

3.1.2 Receptors

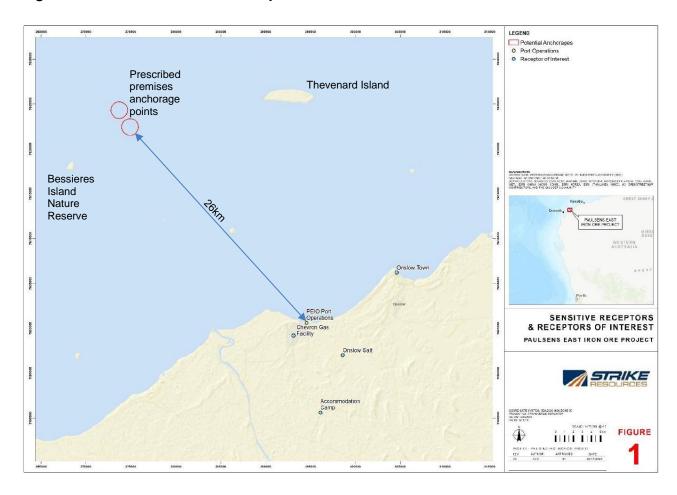
In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Figure 1 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)). Please note that DWER guidelines exclude the consideration of on-site project related receptors as sensitive receptors.

Table 2: Sensitive receptors distance from prescribed activity

Human receptors	Distance from prescribed activity				
Town of Onslow	32 km south-east of premises				
Tourist accommodation	Thevenard island Nature Reserve is approximately 15km from the proposed southern anchorage point and has tourist accommodation named the 'Mackerel Islands' (3-star hotel).				
Environmental receptors	Distance from prescribed activity				
Ocean and marine environment	The proposed anchorage sites are within the Indian Ocean in state waters just outside the Port of Ashburton Port boundary.				
	'The port and the nearby Port of Onslow host a wide range of marine habitats characteristic of the nearshore and offshore Pilbara marine environment. The dominant habitat within the marine environment is unconsolidated sediment with limited areas of benthic primary producer habitat. Corals are common in the turbid inshore waters and around the seaward margins of the islands and shoals. Seagrasses are present in the shallow nearshore areas' (Port of Ashburton Port Master Plan 2050, 2017).				
	(managed under MS 873 and MS 1131)				
Inshore Island Nature Reserves	Bessieres Island Nature Reserve is approximately 7km west of the proposed southern anchorage point (also has a lighthouse).				
	The island is an important breeding and resting places for migratory shorebirds, seabirds and marine turtles.				

Figure 1: Distance to sensitive receptors



3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

Works approval W6666/2022/1 that accompanies this decision report authorises time-limited operations. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises i.e. bulk loading of iron ore activities. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 3: Risk assessment of potential emissions and discharges from the premises during commissioning and operation

Risk events	1			Risk rating ¹ Applicant							
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	controls sufficient ?	Conditions ² of works approval	Justification for regulatory controls			
Operation (Operation (including environmental commissioning and time-limited-operations)										
Bulk loading of iron ore from the SPTV to the OGV	Direct discharges of iron ore to marine water (spills) Iron ore contaminated stormwater/wash water runoff during and/or following loading activities	Pathways: Wind erosion from exposed ore while the OGV is being transferred via boom from the SPTV to the OGV being deposited into marine waters. Discharge of storm water / wash water contaminated with iron ore to to the marine environment. Iron ore product spilling into the marine environment Impact: Iron ore potentially reduced marine water quality from increased sedimentation and/or toxicity resulting in declining ecosystem health.	Marine waters Marine sediments Marine fauna Benthic and coral communities within the Port of Ashburton	Refer to Section 3.1	C = Minor L = Possible Medium Risk	N	Condition 1 Table 1: Design and installation requirements – sump and wash tanks Condition 5 Table 2: Environmental commissioning requirements – minimise spillage of iron ore Condition 9 Table 3: Operational requirements during time limited operations – minimise spillage of iron ore	The risk of iron ore material impacting sensitive receptors in the marine environment presents a medium risk. In accordance with DWER Guidance Statement: Risk Assessments (2020), additional regulatory controls will be conditioned in the works approval to ensure the risk remains acceptable. The design requirement for the SPTV to install a sump and internal wash tanks for the collection of deck wash down water potentially contaminated with iron ore material and/or chemicals has been conditioned within the works approval as an additional regulatory control to minimise risk of iron ore contaminated discharges to the marine environment during loading activities. The operational requirement for the Works Approval Holder to minimise spillage of iron ore material entering the marine environment during loading operations has also been conditioned within the works approval to minimise risks to the marine environment. The Applicant advised that the SPTV will only be washed down when more than 12 nautical miles from the coast as per MARPOL 73/78 requirement. According to Annexure V of MARPOL 73/78 specific waste streams that are not classified as Harmful to the Marine Environment (HME), are permitted to be discharged to sea, provided that the ship is travelling en route, and the discharge occurs as far as practicable from nearest land, but not less than 12 nautical miles from the nearest land. The Applicant advised that if washing is required inside the 12 nautical miles of the coast, such as within the Port of Ashburton			

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Risk events	3			Risk rating ¹ Applicant controls				
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	sufficient ?	works approval	Justification for regulatory controls
								boundary, then wash water will be held in the wash tanks until it can be appropriately disposed of either onshore or out at sea. Given the controls conditioned within the works approval and the low risk the iron ore material presents to the marine environment, as indicated by leachability testing, the residual risk of iron ore material impacting sensitive marine receptors is reduced to acceptable levels.
								Section 72(I) of the EP Act also applies; if a spill is deemed to have caused or is likely to cause pollution, material environmental harm or serious environmental harm, the Works Approval Holder must notify the CEO of DWER.
Bulk loading of iron ore from the SPTV to the OGV	Dust generated from loading activities from boom discharge and external conveyance system	Pathway: Air / windborne pathway causing impacts to marine water quality Impacts: Potential for reduced marine water quality from increased sedimentation and/or toxicity resulting in declining ecosystem health.	Marine waters Marine sediments Marine fauna Migratory birds	Refer to Section 3.1	C = Slight L = Possible Low Risk	N	Condition 1 Table 1: Design and installation requirements 5(a), 5(b), Table 2: Environmental commissioning requirements – manage dust emissions and suspend loading when winds exceed 8m/s 7(b) – moisture content data Condition 9 Table 3: Operational requirements during time limited	The dispersion dust modelling study provided with the application found that, under the preferred operational design 2b, which includes custom trans-shipper with dust curtain, the predicted dust concentrations and dust deposition rates at all sensitive receptor locations would be below the relevant air quality assessment criteria for all scenarios considered, with the inclusion of background as well as the addition of the proposed offsite bulk storage location options (ie. potential cumulative impact). The design controls listed in the modelling assessment provided by the Applicant and additional controls proposed by the Applicant, such as boom sock, and covers and dust collectors on the SPTV conveying system, have been conditioned within the works approval to minimise the risk of dust emissions impacting upon sensitive marine receptors. The additional regulatory control to manage dust emissions at the TAA premises during loading activities and to temporarily suspend loading operations when wind speeds exceed 8 m/s has been conditioned during the

Risk events	3			Risk rating ¹ Applicant controls	Conditions ² of			
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	sufficient	works approval	Justification for regulatory controls
							operations – manage dust emissions and suspend loading when winds exceed 8m/s 12	environmental commissioning and time limited operations phase. Given these controls and the significant distance to sensitive receptors, risk of fugitive dust impacts is considered to be low and can be sufficiently regulated under section 49 of the EP Act and the Licensee's internal management systems.
Bulk loading of iron ore from the SPTV to the OGV	Untreated and treated sewage	Pathway: Direct discharge to marine environment Impact: potential to impact the ecology of marine waters due to the addition of nutrients	Marine waters Marine sediments Marine fauna Benthic and coral communities within the Port of Ashburton	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	1 Table 1: Design and installation requirements – sewage treatment plant Table 2: Environmental commissioning requirements – operated to manufacturers specifications and no discharges within premises boundary Table 3: Operational requirements during time limited operations – operated to manufacturers specifications and no discharges within premises boundary	The Applicant proposes that no discharges of untreated or treated sewage will occur within the TAA premises and that under normal operating conditions, treated sewage will be disposed of in accordance with MARPOL 73/78 requirements. Annexure IV of MARPOL 73/78 permits the discharge of treated wastewater to the marine environment as long as the vessel is no less than three nautical miles from the nearest land and the wastewater is discharged whilst the vessel is proceeding en route at a speed not less than 4 knots. In addition, in Australian waters treated sewage effluent must only be discharged through an approved sewage treatment plant certified by the International Maritime Organisation (IMO) to meet the operational requirements referred to in regulation 9.1.1 of MARPOL Annex IV. The Applicant advised on-board sewage treatment plant will be IMO certified to meet the requirements for International Sewage Pollution Prevention Certification (1973). The requirement for the sewage treatment plant to be operated as per manufacturers specifications during loading activities as well as the requirement for no treated or untreated sewage discharges within the premises boundary has been conditioned within the Works Approval. Section 72(I) of the EP Act still applies - if a spill is deemed to have caused or is likely to

Risk events	3				Risk rating ¹	Applicant controls	Conditions ² of	
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	sufficient ?	works approval	Justification for regulatory controls
								cause pollution, material environmental harm or serious environmental harm the Works Approval Holder must notify the CEO of DWER.
Bulk loading of iron ore from the SPTV to the OGV	Petroleum hydrocarbon and/or chemical discharge	Pathways: Direct discharge into the marine environment (spill) or discharge of deck wash water contaminated with hydrocarbons and/or harmful chemicals to the marine environment. Impacts: potentially causing impacts to the ecology of marine waters and marine fauna	Marine waters Marine sediments Marine fauna Benthic and coral communities within the Port of Ashburton	Refer to Section 3.1	C = Moderate L = Possible Medium Risk	N	Table 1: Design and installation requirements – sump and wash tanks	The risk of hydrocarbon and/or chemical discharges impacting sensitive receptors in the marine environment presents a medium risk. In accordance with DWER Guidance Statement: Risk Assessments (2020), additional regulatory controls will be conditioned in the works approval to ensure the risk is reduced to an acceptable level. The Applicant proposes no planned discharges into the marine environment while loading within the proposed TAA premises boundary. MARPOL Annexure I - Regulations for the Prevention of Pollution by Oil requires that wastewater discharges contain oil content less than 15 parts per million (15 mg/L) and that vessels must not be stationary when undertaking discharge. To monitor this, vessels must have an oil discharge monitoring and control system and oil filtering equipment. The Applicant advised the SPTV will have a survey certificate and IOPP certificate which signifies the vessel has been surveyed to be in compliance with MARPOL Annex 1. The additional regulatory requirement for the SPTV to have a sump and wash tanks installed onboard to collect potentially contaminated wash down water has been conditioned within the works approval to minimise risk from chemical and/or hydrocarbon contaminated wash water being discharged to the marine environment. The Applicant has proposed that no chemicals will be used in the washdown of the SPTV, only seawater. Under MARPOL Annex V, cleaning agents and additives contained in deck and external surface wash water are generally considered "operational wastes"

Risk events	Risk events				Risk rating ¹	Applicant controls	Conditions ² of			
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	sufficient	ient works approval	Justification for regulatory controls		
								and thus "garbage" which is not acceptable for discharge into the sea. However, if a cleaning agent does not classify as a 'harmful substance' it may be discharged to the marine environment. (IMO, 2017). MARPOL Annex III sets out regulations for the prevention of pollution by harmful substances in packaged form and defines "harmful substances" as those identified as "marine pollutants" in the International Maritime Dangerous Goods (IMDG) Code. (IMO, 2019b)		
								Given the existing MARPOL requirements, and the additional regulatory controls conditioned within the works approval (onboard sump and wash tank), the risk of hydrocarbon and/or chemical discharges to the environment is reduced to an acceptable level.		
								Section 72(I) of the EP Act also applies; if a spill is deemed to have caused or is likely to cause pollution, material environmental harm or serious environmental harm the Works Approval Holder must notify the CEO of DWER.		
Bulk	Weeks bries	Pathway: Direct discharge into the marine environment Impact: potentially causing impacts to	Marine		C = Low		Table 2: Environmental commissioning requirements	In the context of MARPOL Annex V, distillation/reverse osmosis waste brine is not considered as 'garbage' or 'operational waste' and therefore may be discharged to the sea in certain circumstances, if not classified as harmful to the marine environment.		
loading of iron ore from the SPTV to the OGV	Waste brine discharge from Reverse Osmosis (RO) plant	the ecology of marine waters such as a localized salinity increase near the point of discharge	environment Marine sediments Marine fauna	Refer to Section 3.1	C = Low L = Minor Low Risk	L = Minor	L = Minor	Y	Table 3: Operational requirements during time limited operations	The definition of "operational wastes" (regulation 1.12 of MARPOL Annex V) excludes discharges essential to the operation of a ship including but not limited to grey water, bilge water and distillation/reverse osmosis brine.
W6666/2		Temporary localized salinity increase may potentially impact marine sediments						The Rain Maker RO plant proposed by the Applicant can process up to 40 m³ of sea water per day for conversion to fresh water. This plant does not trigger a category under		

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Risk events	Risk events				Risk rating ¹ Applicant	0 11:1 2 6		
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	(= consequence	Conditions ² of works approval	Justification for regulatory controls	
		and fauna						the Environmental Protection Regulations 1987.
								The Applicant has advised brine waste from the RO plant will not be treated by the onboard wastewater treatment system prior to discharge and no brine storage tanks are installed onboard. IMO certification of the SPTV (IOPP certificate) will ensure that brine discharges contain oil content below the required 15 mg/L.
								The Applicant proposes no brine discharge within the TAA premises. This has been conditioned within the works approval to minimise the cumulative impacts of brine discharges to the marine environment at the premises during loading operations, potentially causing localized spikes in salinity which could impact upon marine life.
	Noise	Air / windborne pathway causing impacts to health and amenity	None nearby	Refer to Section 3.1	N/A - No credible pathway for risk event	N/A	N/A	Due to a lack of nearby sensitive receptors, there is a negligible risk of noise from the loading operations impacting on human receptors Noise controls have therefore not been included within the works approval. Noise emissions are still required to comply with the Environmental Protection (Noise) Regulations 1997.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Guideline: Risk Assessments (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website and in the West Australian on 25 April 2022	None received	N/A
Local Government Authority the Shire of Ashburton (SoA) advised of proposal on 20 April 2022	The SoA provided comments on 17 May 2022 stating they raise no concerns in relation to the proposed works approval.	N/A.
Pilbara Ports Authority (PPA) advised of proposal on 20 April 2022	PPA provided comments on 24 May 2022 stating the following: 'PPA has reviewed the application and supporting documentation and notes that the proposed anchorages are currently outside of the Port of Ashburton port boundary. However, works are underway to amend the Port of Ashburton's port boundary which would include the proposed marine anchorages, as described in Section 2.0 of the Works Approval Application Supporting Information Revision 0. PPA continues to work with the Department of Transport's (DoT) – Maritime's Waterways Safety Management and Freight Ports Aviation & Reform Teams on the revision of the port boundary. PPA will also continue to engage with Paulsens in terms of the proposed bulk loading operations within this area.'	The department followed up with PPA to seek further clarification on the timeframe for the Port of Ashburton boundary extension to encompass the proposed TAA premises. The department was advised that the port extension would not be finalised until April or May of 2023, meaning the premises would need to be approved in State waters in the interim. PPA also advised the TAA would only be approved to operate within Port boundaries if operations can meet PPA standards and requirements regarding safety management systems, fendering arrangements and international best practice etc. PPA advised that the Applicant is aware of these requirements and is working with PPA to ensure the requirements are met. DWER consulted with the DoT- Maritime division regarding allowing the TAA to operate in state waters. DoT advised that DoT Port Operations do not object to the operations in state waters while the PPA progress boundary changes to the Port of Ashburton, as there will be no impacts on the nearby Port of Onslow Operations.
Applicant was provided with draft documents on 12 October 2022.	Refer to Appendix 1.	Refer to Appendix 1.

5. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

- 1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
- 2. DWER 2020, Guideline: Environmental Siting, Perth, Western Australia.
- 3. DWER 2020, Guideline: Risk Assessments, Perth, Western Australia.
- 4. Environmental Protection Authority (EPA) 2020, Ministerial Statement No. 1131 Wheatstone development shipping channel, materials offloading facility, and access road Shire of Ashburton, Accessed at https://www.epa.wa.gov.au/sites/default/files/1MINSTAT/Statement%201131_0.pdf
- 5. EPA 2011, Ministerial Statement No. 873 Wheatstone development gas processing, export facilities and infrastructure Shire of Ashburton and Roebourne. Accessed at https://www.epa.wa.gov.au/sites/default/files/1MINSTAT/Ministerial%20Statement%20873.pdf
- International Maritime Organisation (IMO) 2017, RESOLUTION MEPC.295(71) 2017 guidelines for the implementation of MARPOL ANNEX V. Accessed at https://www.cdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/MEPCDocuments/MEPC.295(71).pdf
- International Maritime Organisation (IMO) 2019a, International Convention for the Prevention of Pollution from Ships (MARPOL). Accessed at https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)
- 8. IMO 2019b, Carriage of chemicals by ship. Accessed at https://www.imo.org/en/OurWork/Environment/Pages/ChemicalPollution-Default.aspx#:~:text=For%20the%20purpose%20of%20Annex,of%20dangerous%20gods%20by%20sea.

Appendix 1: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
N/A	 Comments received on drafts on 4 November 2022 (DWER Ref: A2145344): Daily maximum throughput 10,000t not 6,5000t 16.32 cubic metres grey water tank installed on- board. Currently there is no additional sewage storage tanks installed onboard for the event that the on-board sewage treatment system is inoperable or not operating to the manufacturers specification. However these tanks can retrofitted as required. Wind speed trigger at which loading operations will cease is 8 m/s Each TAA is 269.4 hectares (Prescribed premises boundary provided as two separate anchorage points.) Minor administrative updates 	 Drafts updated accordingly. Following information requested over email: What is the sewage waste disposal process without sewage tanks? Will the sewage be emptied at port or out to sea as per MARPOL? Please include frequency of disposal. How many people will be working on the transhipper per day when unloading at the prescribed premises? Will any staff be required to sleep on the transhipper or shower? Provide an updated prescribed premises boundary that includes both anchorage points. Also send through the shapefile of the revised premises boundary, update the premises map and define the area of the revised premises in hectares.
	 RFI response received on 6 December 2022 (DWER Ref: A2145347). Under the transhipper sewage waste disposal process, sewage will be emptied out at sea as per MARPOL. Operational Crew Requirements are still to be finalised, however we provide the following commentary: The Transhipper has accommodation facilities to accommodate a crew of 20 people (refer to Transhipper Schematics). During Operations, the transhipper is proposed 	Given that sewage will be emptied out at sea as per MARPOL, DWER determines that sewage storage tanks will not be required to be retrofitted as risk to the marine environment is low. The general provisions of the EP Act and Unauthorised Discharge Regulations are sufficient to manage this risk.

Condition	Summary of applicant's comment	Department's response
	to operate 24hr per day based on 2 shifts of 8 people per shift, and the transhipper crew are expected to reside on the vessel during operations.	
	 In terms of Prescribed Premise Boundaries, we are still chasing this up for DWER. 	
	Response received on 22 December 2022 (DWER Ref: A2147679) providing the Prescribed premises boundary and shapefile.	Premises boundary acceptable. Works approval updated to include final premises boundary and decision report finalised ready for issuing.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY						
Application type						
Works approval	\boxtimes					
		Relevant works approval number:		Non e		
		Has the works approximately complied with?	oroval been	Yes 🗆	□ No □	
Licence		Has time limited operations under the works approval demonstrated acceptable operations?		Yes □ No □ N/A □		
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		Yes □ No □		
		Date Report received:				
Renewal		Current licence number:				
Amendment to works approval		Current works approval number:				
		Current licence number:				
Amendment to licence		Relevant works approval number:		N/A		
Registration		Current works approval number:		Non e		
Date application received	14/12/2021					
Applicant and Premises details						
Applicant name/s (full legal name	Paulsens East Iron Ore Pty Ltd (643 291 230)					
Premises name		Port of Ashburton				

Premises location	Two anchorage sites proposed currently in state waters (this may be amended so they are included within the Port boundary): Northern Anchorage Centroid Coordinate (GDA94): 273703.515418489mE, 7624301.13783726mN. Boundary of the anchorage(s) is nominated as 0.5 nautical miles radius from this centroid. Southern Anchorage Centroid Coordinate (GDA94): 274924.409835363mE, 7622432.8520424mN. Boundary of the anchorage(s) is nominated as 0.5 nautical miles radius		
	from this centroid. (Refer Attachment 2 and Supporting Information – Figure 1.2.)		
Local Government Authority	Shire of Ashburton		
Application documents			
HPCM file reference number:	DER2021/000719		
Key application documents (additional to application form):	Application form (A2074078) Supplementary Information package which includes the following: • Attachment 1A: Proof of occupier status • Attachment 1B: ASIS search • Attachment 1C (Addendum A): PPA written consent • Attachment 2: Prescribed Premises Boundary and Location • Attachment 3A (addendum D): Draft Environmental Management Plan • Attachment 3B: Proposed Activities • Attachment 5: Other approvals and consultation • Attachment 6A (addendum F): emissions and discharges • Risk Assessment • Attachment 7: Siting and Location • Appendix 1 – SDS Microanalysis Australia – Lumps • Appendix 2 – SDS Microanalysis Australia – Fines • Appendix 3 – Oct 2020 Fines Particle size distribution results performed by Microanalysis Australia • Appendix 4 – ALS Elemental Analysis for lump and fines product • Appendix 5 – Results of asbestos analysis for Lump – SEM • Appendix 7 – DEM – Lump • Appendix 8 – DEM – Fines • Appendix 9 – Chemical and Geochemical Composition • Appendix 10 – Respirable Composition Analysis –		

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- Appendix 11 Respirable Composition Analysis Fines
- Appendix 12 Leachability
- Appendix 13 Radiation Lump
- Appendix 14 Radiation Fines
- Appendix 15 Tunra Bulk Solids Report
- Appendix 16 Risk Assessment
- Addendum E Stakeholder Engagement Register
- Addendum F Air Quality Assessment Report

Scope of application/assessment

Works approval application for the loading of an ocean going vessel (OGV) via a special purpose trans-shipment vessel (SPTV) at an anchorage point 15km offshore (14 nautical miles) from the Port of Ashburton portside operations.

The Applicant has applied to load up to 6,500 tonnes per day at the proposed premises, which will equate to approximately 2 million tonnes per annum.

Iron ore product from the The Paulsens East Iron Ore Project mine will be loaded onto the SPTV at the Port of Ashburton (W6642) and will be transported via a Pilbara Ports Authority (PPA) transhipping corridor out to an anchorage point. Each ship will be loaded with a single ore product, either lump or fines (PEIO will produce a 3:1 ratio of lump to fines product). A boom will be manoeuvred into position over the hold of the OGV, to commence the loading operation (see Figure 7.6). A series of below deck or covered conveyors are used to transfer the material from the SPTV to the OGV. After discharging the ore, the SPTV returns to Port.

Summary of proposed activities or changes to existing operations.

Currently two different anchorage points are proposed in state waters. PPA is currently engaging with Department of Transport – Maritime's Waterways Safety Management and Freight Ports Aviation & Reform Teams with a view to the extension of the Port Boundaries to cover the proposed anchorage point transshipment operations.

The applicant has engaged with Department of Transport - Maritime and they have no objection to the proposal and recommend extension of the Ashburton Port boundary and that the Department of Transport, Freight Ports Aviation and Reform Team are working with the PPA to progress the boundary amendments to encompass the proposed transshipment operations.

PPA proposes that PEIO be assigned operational control of the proposed prescribed premise during these iron ore export activities and that when PEIO has completed its iron ore export activities operational control be transferred back to PPA. The premises is estimated to operate for 4 years, with commencement of works proposed for April 2022.

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Proposed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 58: Bulk material loading or unloading: premises on which clinker, coal, ore, ore concentrate or any other bulk granular material (other than salt) is loaded onto or unloaded from vessels by an open materials loading system.	6,500 tonnes per day	N/A

Legislative context and other approvals

	T	T
Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes □ No ⊠	Referral decision No: Managed under Part V Assessed under Part IV
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ⊠ No □	Ministerial statement No: 1131 EPA Report No: 1653
Has the proposal been referred and/or assessed under the EPBC Act?	Yes □ No ⊠	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ⊠ No □	Certificate of title □ General lease □ Expiry: Mining lease / tenement □ Expiry: Other evidence ☒ Expiry: PPA's written consent for Paulsens's to occupy the premises (Addendum A)
Has the applicant obtained all relevant planning approvals?	Yes □ No ⊠ N/A □	Approval: Expiry date: Need to follow up the status of the expanded PPA Port of Ashburton boundary.
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes □ No ⊠	CPS No: N/A No clearing is proposed.

Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes □ No ⊠	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes □ No ⊠	Application reference No: Licence/permit No: Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes □ No ⊠	Name: N/A Type: Proclaimed Groundwater Area/Surface Water Area Has Regulatory Services (Water) been consulted? Yes □ No □ N/A □ Regional office: Swan Avon / Mid-West Gascoyne / Kwinana Peel / North West / South West / Goldfields / South Coast
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes □ No ⊠	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes □ No □ N/A □ Note: If the proposed activity is not listed as a compatible land use with the PDWSA please consult with the relevant regional office (Regulatory Services - Water) and Water Source Protection (Science and Planning).
Is the Premises subject to any other Acts or subsidiary regulations (e.g. Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx)	Yes ⊠ No □	Commonwealth legislation Biosecurity Act 2015 EPBC Act 1999 National Environmental Protection Council (WA) Act 1996 Coastal Waters (State Power) Act 1980 Seas and Submerged Land Act 1973 State Legislation

		EP Act 1986
		Mines Safety and Inspection Act 1994
		Protection Act 1976 (WA)
		Port Authorities Act 1999 (WA)
		Port Authorities Regulations 2001 (WA)
		Western Australian Marine Act 1982
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes □ No ⊠	
Is the Premises subject to any EPP requirements?	Yes □ No ⊠	
Is the Premises a known or suspected contaminated site under the Contaminated Sites Act 2003?	Yes □ No ⊠	