Decision Report

Application for Works Approval

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W6543/2021/1
Applicant	Paulsens East Iron Ore Pty Ltd
ACN	643 291 230
File Number	DER2021/000107
Premises	Paulsens East Iron Ore Project Mining Tenements M47/1583 and L47/938 Shire of Ashburton
Date of Report	6 August 2021
Proposed Decision	Works approval granted

Alana Kidd

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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 construction and operation of the Paulsens East Iron Ore Project (the premises). As a result of this assessment, Works Approval W6543/2021/1 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 15 February 2021, Paulsens East Iron Ore Pty Ltd (applicant) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is to undertake construction works relating to the mining, crushing and screening of iron ore as well as the construction of a wastewater treatment plant and a Class II landfill facility to support mine village facilities at the premises. The premises is located within the Shire of Ashburton and is approximately 150 km West of Tom Price on mining tenements M47/1583 and L47/938. Figure 1 below illustrates the project location.

The project comprises of an iron rich deposit located within mining tenement M47/1583 with access to the project via a proposed 18 km haul road on mining tenement L47/934. Due to the mining occurring on a ridge, it is not expected that the pit will descend below the water table, therefore no dewatering will be required over the life of the project. Water supply from three production bores located within the project tenements has been authorised under GWL205849(1). A mining camp will be located on mining tenement L47/938.

Figure 2 illustrates the premises boundary (within tenements M47/1583 and L47/938) and the locations of the crushing and screening facility, the Class II landfill and the WWTP.

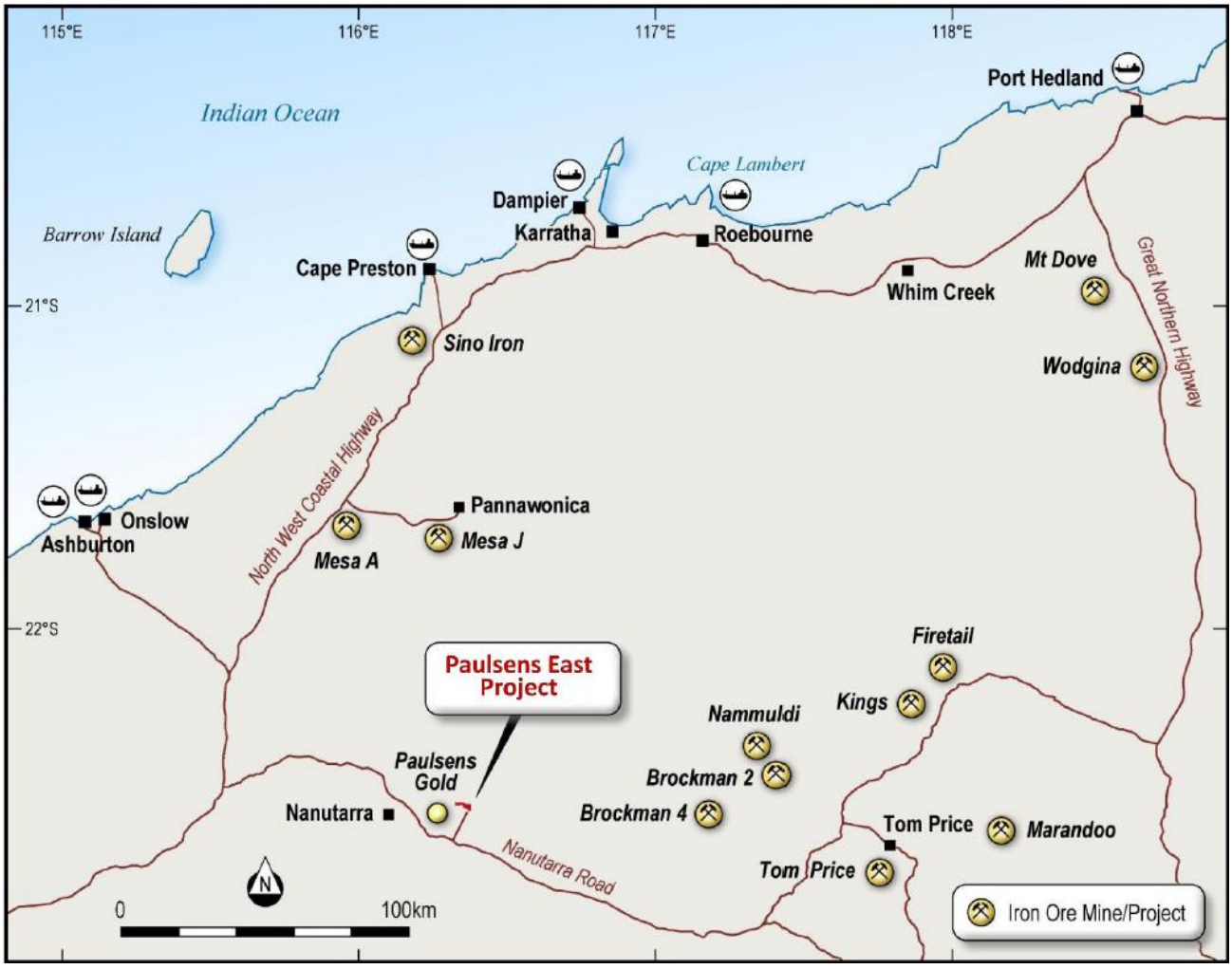

Figure 1: Regional location of the Paulsens East Iron project

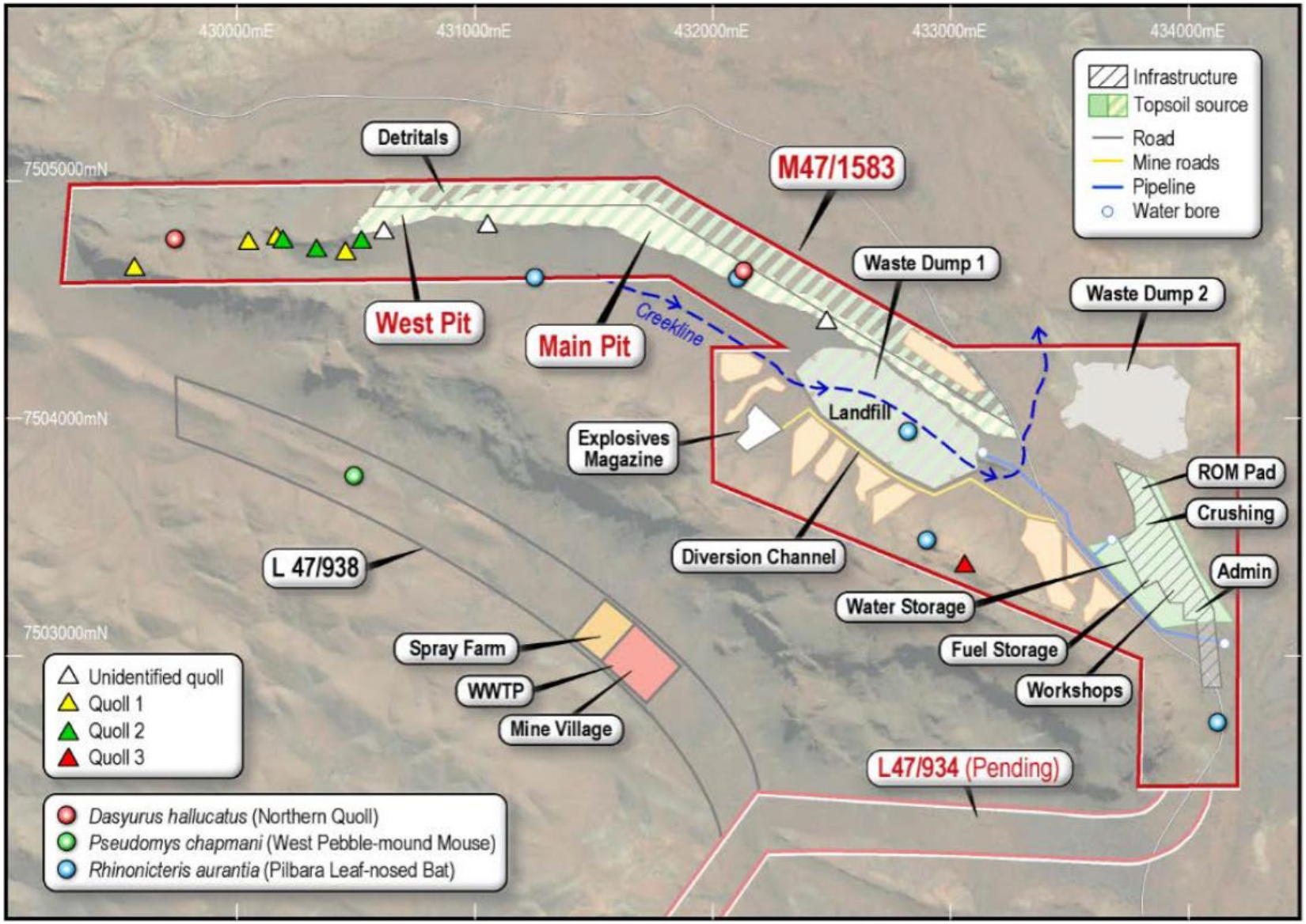

Figure 2: Prescribed premises boundary and the location of infrastructure

Crushing and screening facility (Category 5)

The crushing and screening facility (facility) will be a semi-mobile plant consisting of a number of modularized components linked with conveyor systems.

The facility will have a production capacity of 2 million tonnes per annum. Two iron ore product specifications will be produced and stockpiled concurrently. Product 1 will be a “lump” product with a nominal sizing of between 6.3 and 32 mm. Product 2 will be a “fines” product with a nominal sizing of less than 6.3 mm. The final ratio of lump to fines is anticipated to be 75:25.

Crushing will be via a two-stage process consisting of a primary crusher unit and a secondary crusher unit. The primary crusher (jaw crusher) will be fed with run-of-mine ore by a front-end loader and will crush the material to approximately 150 mm. Material from the primary crusher station will pass to the secondary crusher (cone crusher) and screening circuit. A scalping screen may be installed ahead of the primary crusher to allow material sized less than 32 mm to bypass the primary and secondary crushing units. The pre-screened material will be conveyed to the secondary crusher screen deck. This will be a closed circuit operation where the screening and crushing configuration will be such that the iron ore can only exit the circuit once it has achieved either of the two product specifications. From there it will pass to an elevated stacker arrangement for deposition onto the product stockpiles.

The facility is anticipated to be operated 12 hours per day and 24 days per month, with scheduled maintenance to occur outside these times.

Water for dust suppression will be sourced from several bores constructed within the project area. Samples from two bores drilled within the project area indicate that groundwater is essentially fresh, with Total Dissolved Solid (TDS) results of 420 mg/L and 630 mg/L respectively.

Class II landfill (Category 64)

The Class II landfill will be positioned within Waste Dump 1 which is located within mining tenement M47/1583 (see Figure 2). The landfill will be constructed at various locations within the waste dump throughout the life of the mine. It will be operated as a trench approximately 4 m deep with 2 m bunds dug into the current upper surface of the waste dump. It will be progressively backfilled as waste is deposited.

Putrescible waste from the accommodation village will be the main source of waste for the landfill. Minor quantities of non-recyclable inert waste from the mining operation are also expected. The capacity of the landfill will be a maximum of 150 tonnes per annum.

Wastewater Treatment Plant (Category 85)

A Wastewater Treatment Plant (WWTP) will service an 82-person accommodation village. The WWTP will comprise of a 40-foot sea container, processing equipment and tanks for the collection of raw sewerage, treatment, and distribution of effluent. The system will be capable of treating 20 m^3 of sewerage per day and inflows will be moderated by a 14 000L external balance tank. The WWTP is designed to treat wastewater to the parameters outlined in Table 1.

Table 1: WWTP effluent parameters

Parameter	Value	Units
Biochemical Oxygen Demand (BOD)	<20	mg/L
Total Suspended Solids (TSS)	<30	mg/L
Total N concentration	<30	mg/L
Total P concentration	<8	mg/L
pH	6.5 – 8.5	pH
E. coli	<1000	cfu/100ml
Residual free chlorine	0.2 - 2	mg/L
Total Dissolved Solids (TDS)	<1000	mg/L

WWTP design and process description

Wastewater Treatment Plant

The system will be based on a 5 stage Anaerobic, Anoxic and Oxygen (A2O) treatment. The treatment steps are noted below.

- Anerobic treatment
- Anoxic treatment
- Aeration
- Clarification
- Chlorination

After treatment the wastewater is directed to the irrigation tank, where it is mixed with RO brine for discharge to the spray field. All excess sludge produced by the system will be removed by a licenced waste management company.

The RO system is located within the WWTP and will produce 22 000 litres of brine per day. The RO unit does not trigger a category, however the discharge of brine to the irrigation tank has been considered as a nutrient dilution control.

Spray Field

The spray field has been designed to distribute the treated effluent discharge over an area sufficient to maximise infiltration and evaporation, therefore minimising the potential for soil saturation and ponding, as well as ensure nutrient loading is within the required limits. The spray field will be constructed to operate as two separate sections which will be changed regularly to ensure even distribution of effluent discharge and avoid ponding. Based on nutrient loading, the spray field area required for discharge of 20 m^3 per day at the quality targets listed in Table 1 is 0.49 ha. To allow for spray drift and contingency for increased discharge, the spray field will cover an area of 1 ha. Table 2 outlines the nutrient loading calculations.

The spray field will be located on undulating plains surrounded by ridges and on the floodplain intersected by ephemeral drainage lines. The spray field will have perimeter fencing and signage.

Table 2: Nutrient loading calculations

Phosphorous	Nitrogen
Total output = 8 mg/L	Total output = 30 mg/L
Output volume = 20 000 L/day	Output volume = 20 000 L/day
Equates to 160 000 mg/day	Equates to 600 000 mg/day
Or 0.16 kg/day	Or 0.60 kg/day
Multiplied by one year (365) = 58.4 kg/year	Multiplied by one year (365) = 219 kg/year
Recommended loading = 120 kg/ha/year*	Recommended loading = 480 kg/ha/year*
58.4 ÷ 120 = 0.49 ha required	219 ÷ 480 = 0.46 ha required

**based on soil type (sandy clay-loam) that determines the eutrophication risk to be low – Risk Category D*

WWTP Commissioning

Following construction, the WWTP will require a period of 3 – 6 weeks for commissioning. During this time the required bacteria and micro-organisms will become established and monitoring will be undertaken to ensure the water quality parameters of the effluent are being achieved. The system will be adjusted until the parameters are met. Monitoring will be conducted at least weekly for the duration of the commissioning period. Commissioning will be deemed complete when the target values are achieved for at least two consecutive monitoring events. The Works Approval outlines the treated wastewater effluent parameters and monitoring frequency.

Summary

The Premises relates to the categories and assessed production and design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in Works Approval W6543/221/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guidance Statement: Risk Assessments* (DWER 2020) are outlined in Works Approval W6543/2021/1.

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 *Guidance Statement: 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

Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this decision report are detailed in Table 3 below. Table 3 also details the proposed control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 3: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Earthworks, vehicle movements, clearing and construction of cat 5 crushing and screening facilities, cat 64 landfill and cat 85 sewerage treatment facility.	Air/windborne pathway	• Fugitive dust to be managed by mobile water carts. • Land clearing to be undertaken progressively and only when required. • Avoid land clearing and handling of topsoil in windy conditions as far as practical
Stormwater controls and sediment laden stormwater	Refueling and vehicle activities	Overland runoff and contamination of soil	• Ensure hydrocarbons and chemicals are appropriately stored and spills are immediately addressed • Bioremediation facility to be constructed in accordance with Department of Environment guideline *Bioremediation of hydrocarbon-contaminated soils in Western Australia, October 2004.*
	Erosion from earthworks, clearing activities	Overland runoff to waterways/ ephemeral creeks	• Progressive rehabilitation of waste dumps. • Bunding and drainage around hardstands to catch surface water • Directing runoff to catchment sumps • Installing water containment structures (contour ripping, back-sloped berms, perimeter bunding) on constructed landforms to prevent surface water runoff. • Regular inspections of drains and sumps. • Visual inspections carried out after rainfall events. • Monitoring to determine the severity of erosion on constructed landform slopes.
Operation (Including time limited operations)			
Dust	Processing operations, earthworks, vehicle movements, and ore stockpile.	Air/windborne pathway	• Undertake land clearing only when necessary. • Avoid land clearing and handling of topsoil in windy conditions as far as practical • Misting sprays at suitable locations including conveyor belt loading and discharge points. • Conveyor loading points to be fitted with dust box covers and

Emission	Sources	Potential pathways	Proposed controls
			skirting seals. • Conveyor head pulleys will be fitted with head chutes as required • Ore will be conditioned with water (where required) before final product transport • General site dust suppression will be managed with water carts. • Carry out progressive rehabilitation. • Annual vegetation monitoring of dust against reference sites.
Contaminated stormwater	Erosion from earthworks, mining. clearing activities	Overland runoff to waterways/ ephemeral creeks	• Progressive rehabilitation of waste dumps. • Bunding and drainage around hardstands to catch surface water • Directing runoff to catchment sumps • Installing water containment structures (contour ripping, back-sloped berms, perimeter bunding) on constructed landforms to prevent surface water runoff. • Regular inspections of drains and sumps. • Visual inspections carried out after rainfall events. • Monitoring to determine the severity of erosion on constructed landform slopes
Wind blown waste	Landfill	Air/windborne pathway	• Landfill will be covered weekly. • Landfill orientation will be in such a way as to minimize wind impacts. • Trench will be excavated to a depth of 4 m with the excavated material to form a 2 m perimeter bund on three sides.
Leachate	Landfill	Infiltration of leachate into the groundwater	• Landfill to be located at least 21 metres above the water table. This is greater than the 3 metres as required in the *Environmental Protection (Rural Landfill) Regulations 2002.*
Treated wastewater	Wastewater treatment plant	Direct discharge to land and soil, overland runoff	• Discharge to sprayfield designed to maximise evaporation and infiltration. • Spray field to cover an area of 1.0 ha. • Effluent parameters to remain below levels outlined in Table 2.

Emission	Sources	Potential pathways	Proposed controls
Untreated wastewater	Wastewater treatment plant.	Direct discharge to land and soil, overland runoff	• Wastewater treatment plant processing equipment containerised. • Routine inspections of the fittings, pipelines and tanks
Chemical spill	Wastewater treatment plant	Direct discharge to land and soil, overland runoff	• Wastewater treatment plant processing equipment containerised. • Routine inspections of the fittings, pipelines and tanks

Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), the Delegated Officer has excluded employees, visitors and contractors of the applicant's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 4 and Figure 3 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 *(Guidance Statement: Environmental Siting* (DWER 2020)).

Table 4: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Closest town Tom Price	Approximately 150 km east of the premises. **Screened out - not considered a receptor due to distance.**
Paulsens Gold Mine, Northern Star	About 6 km directly west of tenement boundary to Gold mine facility boundary. **Screened out - not considered a receptor due to distance.**
Environmental receptors	**Distance from prescribed activity**
Priority 3 *Triodia pisoliticola* assemblages	Approximately 22 km east of the premises. **Screened out - Not considered a receptor due to distance.**
Two species of Threatened fauna (Northern quoll *Dasyurus hallucatus* & Pilbara leaf-nosed bat *Rhinonicteris aurantia*) and evidence of one Priority species the Pebble mound mouse *Pseudomys chapmani*.	Biological surveys have recorded photographic evidence of the Northern Quoll in the mining area. See Figure 3 for recorded locations.
One species of Priority 3 flora *Triodia*	Close to or within mining tenement

pisoliticola was recorded in the project area. Two priority 2 *Pentalepis trichodesmoides* flora species was located outside the haul road disturbance area.	
Aboriginal and other heritage sites	A number of culturally significant locations have been identified within the tenement boundary.
Rights in Water and Irrigation Act 1914 Surface water	The Premises is located within the Proclaimed Pilbara Surface water area.
Rights in Water and Irrigation Act 1914 Groundwater	Activities associated with the works approval are not expected to impact groundwater due to the high evaporation rates of the area as well as the depth of groundwater being at a minimum 21 m below ground level at the landfill site. **Screened out – not considered a receptor.**

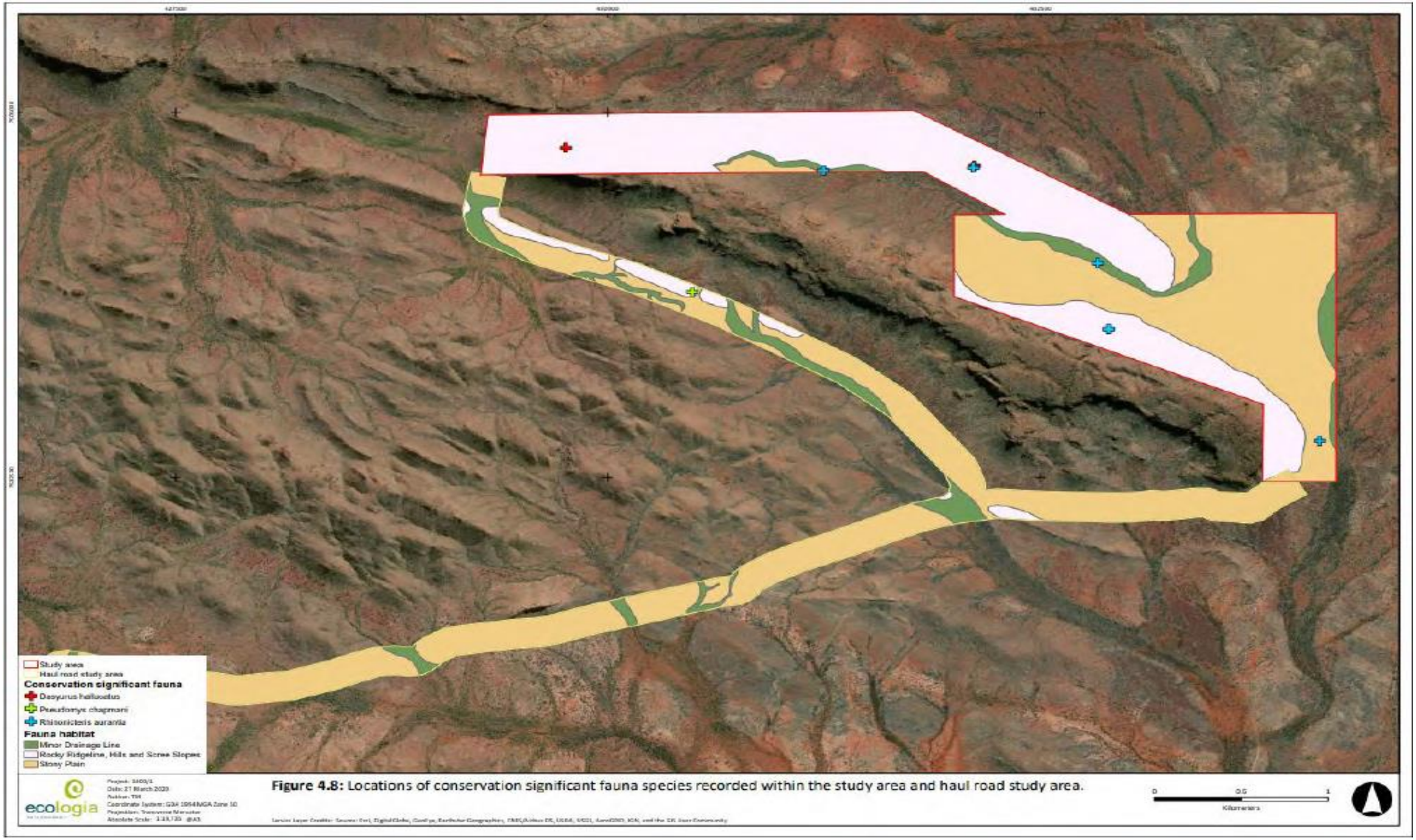

Figure 3: Conservation significant fauna

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) 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 5.

Works Approval W6543/2021/1 that accompanies this Decision Report authorises construction and time-limited operations. The conditions in the issued Works Approval, as outlined in Table 5 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. 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 5: Risk assessment of potential emissions and discharges from the Premises during construction, commissioning and operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Construction and placement of category 5 crushing and screening equipment, category 85 wastewater treatment plant and category 64 landfill	Dust	Air/windborne pathway causing impacts to vegetation's ability for photosynthesis	Native vegetation and conservation significant fauna including the Northern Quoll	Refer to Section 3.1	C = Slight L = Unlikely Low	Y	N/A	N/A
Commissioning and operation (including time-limited-operations operations)								
Commissioning of wastewater treatment plant	Treated wastewater Brine discharge undiluted	Direct discharge to spray field causing elevated salt and nutrient levels in the soil and overland runoff to ephemeral creeks causing erosion	Ephemeral drainage lines leading to Duck creek. Native vegetation, soils	Refer to Section 3.1	C = Slight L = Possible Low	N	**Condition 5, Table 2 Commissioning requirements**	Required so that WWTP effluent meets the quality criteria before discharge
	Untreated wastewater	Overland runoff to waterways/ ephemeral creeks impacting soil and water quality	Ephemeral drainage lines leading to Duck creek. Native vegetation	Refer to Section 3.1	C = Slight L = Unlikely Low	N	Condition 1, Table 1 Wastewater treatment plant **Condition 5, Table 2 Commissioning requirements**	WWTP to be installed and commissioned to the appropriate requirements to reduce the risk of a discharge of raw sewerage.
	Chemical spill	Overland runoff to waterways/ ephemeral creeks impacting soil and water quality	Ephemeral drainage lines leading to Duck creek. Native vegetation	Refer to Section 3.1	C = Slight L = Rare Low	Y	Condition 1, Table 1 Wastewater treatment plant Condition 5, Table 2 Commissioning requirements	N/A

Risk Event					Risk rating[1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Operation **(including time-limited-operations operations)**								
Screening, crushing, unloading, loading and storage of material Vehicle movements Earthworks at landfill	Dust	Air/windborne pathway causing impacts to vegetation ability to photosynthesize	Native vegetation and conservation significant fauna habitat	Refer to Section 3.1	C = Moderate L = Unlikely Medium	Y	Condition 1, Table 1, Semi-mobile crushing facility Condition 12, Table 3 Semi-mobile crushing facility and Operational landfill.	N/A
	Sediment laden stormwater	Overland runoff to waterways/ ephemeral creeks impacting soil and water quality	Ephemeral drainage lines leading to Duck creek. Native vegetation	Refer to Section 3.1	C = Moderate L = Possible Medium	Y	Condition 1, Table 1 Semi-mobile crushing facility Condition 12, Table 3 Semi-mobile crushing facility	N/A
Operation of wastewater treatment plant	Treated wastewater	Overland runoff to waterways/ ephemeral creeks causing erosion	Ephemeral drainage lines leading to Duck creek. Soils	Refer to Section 3.1	C = Minor L = Possible Low	Y	Condition 1, Table 1 Wastewater treatment plant Condition 12, Table 3 Wastewater treatment plant	N/A
	Untreated wastewater	Overland runoff to waterways/ ephemeral creeks impacting soil and water quality	Ephemeral drainage lines leading to Duck creek. Native vegetation	Refer to Section 3.1	C = Minor L = Unlikely Medium	Y	Condition 1, Table 1 Wastewater treatment plant Condition 12, Table 3 Wastewater treatment plant	N/A.

Risk Event					Risk rating[1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
	Chemical spill	Overland runoff to waterways/ ephemeral creeks impacting soil and water quality	Ephemeral drainage lines leading to Duck creek. Native vegetation	Refer to Section 3.1	C = Minor L = Rare Low	Y	N/A	N/A
Operation of Class II putrescible landfill..	Dust	Air/windborne pathway causing impacts to vegetation ability to photosynthesize	Native vegetation and conservation significant fauna habitat	Refer to Section 3.1	C = Minor L = Possible Medium	Y	N/A	N/A
	Sediment laden stormwater	Overland runoff to waterways/ ephemeral creeks causing erosion and impacting soil and water quality	Ephemeral drainage lines leading to Duck creek. Native vegetation	Refer to Section 3.1	C = Moderate L = Unlikely Medium	Y	Condition 1, Table 1 Class II landfill facility Condition 12, Table 3 Operational landfill, subsequent landfill cells	N/A
	Wind blown waste	Air/windborne pathway causing impacts to health and amenity	Conservation significant fauna, general amenity of area	Refer to Section 3.1	C = Minor L = Possible Low	Y	Condition 1, Table 1 Class II landfill facility Condition 12, Table 3 Operational landfill, subsequent landfill cells	N/A
	Contaminated stormwater	Direct discharge to land and soil, overland runoff impacting soil and water quality	Ephemeral drainage lines leading to Duck creek. Native vegetation, soils	Refer to Section 3.1	C = Moderate L = Possible Medium	Y	Condition 1, Table 1 Class II landfill facility Condition 12, Table 3 Operational landfill, subsequent landfill cells	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guidance Statement: Risk Assessments* (DER 2017).

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

4. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Application advertised on the Department's website (24/05/2021)	No comments received	N/A
Shire of Ashburton advised of proposal (26/05/2021)	No comments received	N/A
Department of Mines and Industry Regulation and Safety advised of proposal (26/05/2021)	The comments received were: • Paulsens East Iron Ore Pty Ltd has submitted a mining proposal (REG ID 92872) for the Paulsens East Iron Ore Project which includes tenement M47/1583 and L47/938, relevant to this works approval (W6543/2021/1). The mining proposal is currently on hold waiting further information from proponent (mainly regarding waste rock characteristics, WRD designs and pit wall stability). The proposal includes the crushing and screening facility, the landfill and the sewerage treatment facility subject to W6543/2021/1. • DMIRS understands that the operation of these facilities is regulated under Part V of the EP Act and that a native vegetation clearing permit has already been granted for clearing within the relevant tenements (CPS 9209/1). DMIRS assessment will focus on management of risks during potential care and maintenance periods, decommissioning and closure.	Noted DWER acknowledges that the mining proposal is currently on hold and awaiting further information from the proponent regarding the waste rock dump design and pit wall stability. DWER acknowledges that a clearing permit has been granted and that management of risks during care and maintenance periods and decommissioning will be assessed by DMIRS. DWER notes that if the waste rock dump 1 location is not approved by DMIRS, then the applicant will need to apply for an amendment to the works approval to relocate the category 64 landfill. DWER notes that Paulsens East Iron Ore Pty Ltd. has provided mining proposal registration ID: 92872, Environmental group site S0239515 and Mining Proposal document 8514474 at the time of the Works Approval being issued.
Department of Biodiversity Conservation and Attractions advised of proposal (24/06/2021)	No comments received	N/A
Department of Land Planning and Heritage advised of proposal (24/06/2021)	No comments received	N/A

Paulsens East Iron Ore Pty Ltd emailed requesting information on Section 17 application to alter a watercourse and current DMIRS waste rock dump approval status (07/07/2021)	The comments received were • In respect of a section 17 application to alter a watercourse, as indicated in our Mining Proposal in respect of any proposed alteration to a watercourse / creek diversion we advise as follows: *A hydrogeological consultant has undertaken analysis of the surface hydrology and determined an appropriate design for a channel. Details of the current proposed diversion have been provided to DMIRS for geotechnical assessment in the Mining Proposal. This will not be required until year 2 or 3 of the project, and may not be required at all pending revision of the waste dump design. We would submit a Bed and Banks Permit to DWER for assessment in due course if the diversion channel were required* • We believe that any clarifications required by DMIRS in respect of waste rock dump 1 have been addressed to DMIRS satisfaction, given that we have no outstanding clarifications to provide in respect of the MP and MCP, and have been requested to finalise our submissions with designation of the EGS.	Noted DWER acknowledges that the water course diversion will not be required until year 2 or 3 of the project, and may not be required at all. DWER acknowledges that the waste rock dump approval is under RFI with DMIRS, and that there is no reason to believe that it will not be approved.

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

Department of Environment Regulation (DER) 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.

1. Department of Environment Regulation (DER) 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
2. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. DER 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
4. Email titled “Paulsens East Iron Ore Pty Ltd – DWER Works Approval Application – Paulsens East Iron Ore Project” dated 15/03/2021, authored by Paulsens East Iron Ore Pty Ltd, available at DWER records (DWERDT414351).

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

Condition	Summary of applicant's comment	Department's response
5 Table 2 Total Dissolved Solids	Response to TDS question We confirm that the design effluent quality criteria targeted for Total Dissolved Solids will be less than <1000mg/L.	Due to the expected elevated levels of TDS in the RO brine, and since it is being mixed with WWTP effluent prior to irrigation as a control, the Department has included this figure in the conditions.
12 Table 3 Total Dissolved Solids	Response to TDS question We confirm that the design effluent quality criteria targeted for Total Dissolved Solids will be less than <1000mg/L.	Due to the expected elevated levels of TDS in the RO brine, and since it is being mixed with WWTP effluent prior to irrigation as a control, the Department has included this figure in the conditions.
N/A Decision Report Section 2.2 Application Summary and Overview of Premises, Paragraph 3	Highlight reference error, A mining camp will be located on mining tenement L47/938. Error! Reference source not found. Below illustrates the project location. We confirm that the figure to be referenced is Figure 2.	Noted. The Department has made a minor amendment in the wording of section 2.2 and corrected the reference error.
N/A Decision Report Section 2.2 Application Summary and Overview of Premises, Crushing and Screening Facility (Category 5), Paragraph 3.	Response to screened materials question We confirm that the size to allow is -32 mm material direct from the mining operations to bypass the primary and secondary crushers. The pre-screened -32 mm material would be conveyed to the secondary crusher screen deck.	Noted The Department has updated the process description of the crushing and screening facility. The Department has considered that risk of emissions and discharges from the response provided are negligible and will not change the risk rating of the overall facility.
N/A Decision Report Section 2.2 Application Summary and Overview of Premises, Table 1; WWTP	Response to TDS question We confirm that the Total Dissolved Solids discharge values for WWTP effluent parameters will be <1000 mg/L	Noted The Department has considered this and made the updates in Table 1 of the Decision Report.

Condition	Summary of applicant's comment	Department's response
Effluent Parameters		
N/A Decision Report Section 4 Consultation Table 6 DMIRS Advised of Proposal 26/05/2021	<u>Response to question regarding update on the Mining Proposal and the location of the landfill in the waste rock dump.</u> We confirm receipt of DMIRS approval of Paulsens East Iron Ore Pty Ltd.'s Mining Proposal – Registration ID: 92872, Environmental Group Site Name: Paulsens East Iron Environmental Group, Environmental Group Site: S0239515 on 29 July 2021. The Mining Proposal Document ID is 8514474. In respect of the location of the landfill in the WRD we confirm that the landfill will be positioned at various locations within WRD #1 throughout the life of the mining operation. It will commence in the first 10m lift (level) and will be progressively moved as the waste dump is constructed. It will be at least 25 m from the final outer slope at each location. Each location of the landfill will be surveyed and maintained on record to ensure it is not inadvertently disturbed.	The Department has risk assessed emissions and discharges from the landfill based on the information provided and has made note of the outcome in the Decision Report. Please be aware that the emissions and discharges from the landfill have been assessed assuming completion of WRD #1 approval from DMIRS. DWER notes that approvals from DMIRS are in progress and at this stage there is no reason to believe that they will not be granted at this stage.
N/A Draft Decision for WA-21 Days – Cover page, Paragraph 1	Typographical error in paragraph 1 The mining tenement referenced is L47/983, the correct tenement should be L47/938.	The Department acknowledges this and will make the correction for the final decision notice.
N/A Works Approval Cover Page	Typographical error on the cover page The mining tenement referenced is L27/938, the correct number should be L47/938.	Noted and corrected
N/A Decision Report Appendix 2: Application Validation Summary – Scope of Application/Assessment, Paragraph 4.	Typographical error under heading Summary of Proposed Activities or Changes to Existing Operations. The tenement referenced is L47/935, the correct tenement referenced should be L47/938.	Noted and corrected

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)		
Application type		
Works approval	☒	
Date application received		12/02/2021
Applicant and Premises details		
Applicant name/s (full legal name/s)		Paulsens East Iron Ore Pty Ltd
Premises name		Paulsens East Iron Ore Project
Premises location		M47/1583, L47/938
Local Government Authority		Shire of Ashburton
Application documents		
HPCM file reference number:		DER2021/000107
Key application documents (additional to application form):		Application form and supporting information, DWERDT414351 - *Proof of lease occupation* - *Tenement information* - *ASIC company extract* - *Site layout and prescribed activities* - *Environmental Commissioning Plan* - *Activity Detail* - *Siting and Location* - *Fauna and Flora Assessment* - *Proposed Fee Calculation*
Scope of application/assessment		
Summary of proposed activities or changes to existing operations.		A modular semi-mobile crushing and screening plant to be assembled onsite on tenement M47/1583. There are two stockpiles, one containing lump (>6.3 but <32 mm) and the other containing fine (<6.3mm) iron ore onsite. The plant is proposed to have a production capacity of 2 Mtpa with operation to be 12 hours per day, 24 days per month, with maintenance occurring outside these hours. Construction of an 18km private haul road (on tenements L47/934 & L08/195) connecting the site to Nanutarra Rd. Ore is proposed to be trucked to Port Hedland for export. Class II landfill to be constructed at various locations within Waste Dump 1 throughout the life of the mining operation. Landfill to be operated as a trench that will be progressively backfilled as waste is deposited. Hydrocarbon bioremediation cells proposed to be placed within landfill. A mine village is proposed to be constructed on L47/938 with a wastewater treatment plant (WWTP). The WWTP comprises of a containerised (40' shipping container) treatment plant and spray field for discharge of treated effluent. This has a design capacity of 20m^3 of sewerage treatment per day. A lined "turkey's nest" style water storage dam will be constructed for storage of water extracted from bores. This is proposed to have a capacity of 2.5-3.0 million litres and lined

	with HDPE liner. This will be treated by a reverse osmosis plant located in the WWTP to produce potable water and brine. The brine will be mixed with the treated wastewater and discharged into the spray field.

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**
Category 5 Processing or beneficiation of metallic or non-metallic ore: premises on which – (a) Metallic or non-metallic ore is crushed, ground, milled or otherwise processed.	Proposed – 1.5 – 2 Mtpa of iron ore processing
Category 64 Class II putrescible landfill site	Proposed - 150 tonnes per year
Category 85 Sewerage facility: premises – (a) On which sewerage is treated From which treated sewerage is discharged onto land or into waters.	Proposed – 20 m^3/day of sewerage treatment.

Legislative context and other approvals

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: EPA Report No:
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 ☐	Mining lease / tenement ☒ Expiry: M47/1583 – 03/09/2041 L47/938 – 09/12/2041
Has the applicant obtained all relevant planning approvals?	Yes ☐ No ☐ N/A ☒	If N/A explain why? Project is located on a mining tenure. A mining proposal has been submitted to DMIRS is currently under assessment. Meetings have been held with Shire

		of Ashburton and MRWA regarding development of project and use of public roads.
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☒ No ☐	CPS No: DMIRS currently assessing
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
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☒ No ☐	Application reference No: Applicant intends to apply for water licence. Licence/permit No: Current bores CAW 204500 & CAW 205609.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☒ No ☐	Name: Pilbara Groundwater Area & Pilbara Surface Water Area. Type: Proclaimed Groundwater Area/Surface Water Area Has Regulatory Services (Water) been consulted? Yes ☐ No ☐ N/A ☒ Regional office: North West
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	Name: N/A Priority: N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes ☐ No ☐ N/A ☒
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 ☐	Dangerous goods (Dangerous Goods Safety (Storage and Handling on Non-Explosives) Regulations 2007)of up to 10 000 l of Waste Oil from workshop activities to be temporarily stored at any time.
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 ☐	Classification: Information request Contaminated Sites ID 6747 Date of classification: N/A