



Application for Works Approval

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

Works Approval Number	W6879/2024/1
Applicant	Pilbara Iron Pty Ltd
ACN	107 216 535
File number	DER2023/000804
Premises	Railway BP33 MLTP MAITLAND WA 6714 Miscellaneous Licence L47/286
Date of report	22 April 2024
Proposed Decision	Works approval granted

**MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES**
an officer delegated under section 20 of
the *Environmental Protection Act 1986* (WA)

Table of Contents

1. Decision summary	1
2. Scope of assessment	1
2.1 Regulatory framework	1
2.2 Application summary	1
2.3 Assessing whether a material is waste	2
2.4 Ballast characterisation and processing	2
3. Risk assessment	3
3.1 Source-pathways and receptors	3
3.1.1 Emissions and controls	3
3.1.2 Receptors	6
3.2 Risk ratings	10
4. Consultation	14
5. Conclusion	14
References	15
6. Appendix 2: Summary of applicant’s comments on risk assessment and draft conditions	16
Appendix 2: Ballast analysis results	17
Table 1: Proposed applicant controls	3
Table 2: Sensitive human and environmental receptors and distance from prescribed activity	6
Table 3: Risk assessment of potential emissions and discharges from the premises during construction and operation	11
Table 4: Consultation	14
Table 5: Ballast analysis results – total concentrations	17
Table 6: Ballast analysis results – Australian Standard Leaching Procedure (Leachate) concentrations	18
Figure 1: Distance to sensitive receptors	7
Figure 2: Mapped Aboriginal heritage places or registered sites (DPLH)	8
Figure 3: Threatened Ecological Community	9

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 premises. As a result of this assessment, works approval W6879/2024/1 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

On 16 December 2023, the 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 construction/installation of a crushing screening plant and a solid waste facility for ballast and rail civil material storage at the Railway BP33 MLTP premises (the premises). The premises is approximately 18 km north of Karratha.

The premises relates to the categories and assessed production/design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6879/2024/1. 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 W6879/2024/1.

Ballast will be recovered from the Integrated Rail Network" (IRN), which comprises 1,980 kilometres of heavy freight railway network for iron transport. The IRN requires ballast recycling/renewal therefore related prescribed activities will need to be progressed to facilitate renewal objectives.

The ballast recycling process consists of the collection of used ballast material and other civil material, where the mobile crushing and screening plant will screen/resize material (Category 13: Crushing of building material). Concrete sleepers will be temporarily stockpiled at the premises but will not be crushed or screened.

Material testing will be conducted before materials are removed from the railway network. Additionally, soil samples across the site will also be collected and analysed prior to crushing/screening and stockpiling works commence.

The Works Approval holder proposed that ballast retrieved from the IRN will ultimately be treated as a 'product', not as a 'waste', and that suitable material will be repurposed for civil applications. Material that does not meet reuse criteria (e.g. poses an unacceptable environmental risk) will be considered 'waste' and will be temporarily stockpiled within premises boundary and then disposed to an appropriately licenced facility.

The mobile crushing and screening plant will be located within the bounds of BP33 MLTP operational borrow pit and laydown area. Additionally, new ballast material will be screened/crushed from BP33 MLTP operational borrow pit (Category 12: screening, etc. of material).

2.3 Assessing whether a material is waste

The primary consideration in what regulatory requirements would apply for the reuse of rail ballast material is whether the material is considered 'waste' for the purposes of the EP Act and *Waste Avoidance and Resource Recovery Act 2007* (WARR Act).

There are a number of relevant factors that should be considered in an assessment of whether material is waste as identified in the [Fact Sheet: Assessing whether material is waste](#) (DWER, undated). In accordance with this factsheet, burial and/or reuse waste may trigger prescribed premises categories as detailed in Schedule 1 of the *Environmental Protection Regulations 1987*.

The department recommends that if producers and end-users of certain materials are unsure of whether the material, they hold is waste or whether certain provisions in the legislation apply they should seek their own legal advice i.e. the department does not currently provide a determination on when a material ceases to be waste.

The department is currently developing a legislative framework for waste-derived materials (timeframe for release is not known). The reforms aim to provide greater certainty about when materials derived from waste, and applied to land in large quantities, will cease to trigger licensing and levy obligations – for further information on this, please refer to the [Waste not, want not Discussion Paper](#).

Advice to this effect has previously been given to the applicant. The assessment of this works approval application is limited to assessing related emissions and discharges from processing and recycling activities. It does not provide endorsement on the proposed approach to assessing whether the recycled ballast material is a 'waste' or a 'product'.

2.4 Ballast characterisation and processing

The Works Approval holder analysed samples of degraded ballast for Contaminants of Potential Concern (COPC) associated with 'railway yards and transport corridors' according to Appendix B of the *Guideline: Assessment and management of contaminated sites* (DWER, 2021) (RTIO, 2024). The results of ballast testing are provided in Appendix 2: Ballast analysis results, a summary is provided below:

Total Concentrations

- *None of the samples showed asbestos concentrations above the laboratory Limit of Reporting (LOR), and visual inspections during sampling did not reveal any signs of asbestos.*
- *The concentrations of total Polycyclic Aromatic Hydrocarbons (PAHs) were below the uncontaminated fill guidelines^[1] in all samples.*
- *Volatile TRH (>C6-C10) and BTEX-N compounds were below the uncontaminated fill guidelines^[1] in all samples.*
- *Five samples recorded concentrations of TRH (>C16-C34) exceeding the uncontaminated fill guideline^[1] of 300 mg/kg. The upper confidence limit (UCL95) of 141.6 mg/kg remained below the uncontaminated fill guideline. Note: the statistics were skewed by a single anomalous result, which was not representative of the dataset.*
- *Total concentrations of selected metals (copper, manganese and nickel) exceeded the corresponding maximum concentration (mg/kg) dry weight, outlined in the uncontaminated fill guidelines^[1].*

Leachate Concentrations

- Leachable concentrations of selected metals (chromium, cobalt, copper, lead, manganese, selenium, thallium and zinc) exceeded the ASLP deionised water (DI) leach uncontaminated fill guideline^[1] concentrations.
- Leachable concentrations of the pesticides aldrin and dieldrin exceeded the ASLP leach guideline concentrations, with selected results also exceeding the Australian Drinking Water Guidelines (ADWG)^[2], by a factor of 10 and therefore equating to the NPUG^[3].
- The leachable concentrations of selected metals exceeded the ADWG and the Freshwater Guideline (FWG)^[4] [...]

[...] The outcome of this analytical testing is [further] screened against guidelines such as:

- *Guideline: Assessment and management of contaminated sites (DWER, 2021);*
- ^[1] *Landfill Waste Classification and Waste Definitions 1996 (As Amended 2019) (DWER, 2019);*
- *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia, Department of Health, 2021 (DoH,2021);*
- ^[4] *National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (NEPM,2013);*
- *CRC Care, Technical Report No.10, Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater (CRC Care);*
- ^[3] *Contaminated site ground and surface water chemical screening guidelines, Department of Health, 2014 (DoH, 2014); and*
- ^[2] *Australian Drinking Water Guidelines 6, National Water Quality Management Strategy, 2011 (updated 2022) (ADWG,2011).” (RTIO, 2024).*

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 construction/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.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Crushing of material, vehicle movements,	Air / windborne	Dust suppression via the application of crusting and stabilising agents or water on trafficable

Emission	Sources	Potential pathways	Proposed controls
	lift-off from stockpiles and/or stored product, earthworks etc.	pathway	areas including water sprays, water trucks, control of vehicle movements / restricted speeds.
Sediment laden and / or contaminated stormwater to surface water	Mobilisation, installation and construction of the crushing and screening plant and associated infrastructure / equipment	Overland runoff Runoff from area following rain / drainage	Potentially contaminated stormwaters retained onsite via bunds and sumps. Diversion of clean surface water around the work area via installation of earthen bund. Stormwater will be collected and held within the crushing/screening and stockpiling footprint, via installation of an earthen sump.
Time Limited Operations			
Category 12 and 13: crushing/screening activities			
Dust	Screening, crushing, unloading, loading and storage of material Vehicle movements at BP33 operational borrow pit	Air / windborne pathway	The crushing & screening plant will be fitted with a hose and water sprays for dust suppression, including dust covers. Dust suppression via the application of crusting and stabilising agents or water on trafficable areas including water sprays, water trucks, control of vehicle movements / restricted speeds. Use of angle-adjustable stockpiling conveyors to minimise drop heights. Spraying the crushing and screening feed stockpile with water prior to being fed into the screen if necessary. Progressive rehabilitation of disturbed areas no longer needed for operational purposes. No crushing and screening will occur within 50m of a creekline or waterway.
Potentially contaminated stormwater from the operation of the plant and overland runoff	Operation of crushing/screening plant	Overland runoff	Plant and stockpiling will be located at least 100m from any non-perennial drainage line, the closest water feature. Potentially contaminated stormwaters retained onsite via bunds and sumps. Diversion of clean surface water around the work area via installation of earthen bund. Stormwater will be collected and held within the crushing/screening and stockpiling footprint, via installation of an earthen sump.
Discharge of hydrocarbons from vehicles and plant spills, and	Refuelling operations	Direct discharge to land	The refuelling service trucks are bunded and fitted with dry brake coupler (won't allow fuel flow until it's locked in place), pressure valve regulators, over fill protection, 25,000L max fuel

Emission	Sources	Potential pathways	Proposed controls
during refuelling operations			<p>level.</p> <p>Spill kit and drip pads used during infield refuelling.</p> <p>Visual inspection of plant daily for leaks.</p> <p>Weekly inspections of mobile equipment or generator or refuelling truck tank integrity and any potential leaks/damage to hydrocarbon related infrastructure/equipment.</p> <p>Field-based machinery refuelling from mobile fuel trucks, drip tray used at the transfer point.</p>
Asbestos (Category 12/13)	Recycling of ballasts	Air / windborne pathway	<p>Ballast material is tested for asbestos prior to removal from the rail network.</p> <p>BP33 TPML operational borrow pit has also been tested and cleared of containing asbestos material.</p>
Category 61A: Solid waste facility			
Dust	Ongoing stockpiling/unloading of offsite degraded rail civil material	Air/windborne pathway	<p>Water cat available during operation.</p> <p>Dust suppression agent will be used if required.</p> <p>Stockpiles will be inspected to minimize dust generation events.</p> <p>Progressive rehabilitation of disturbed areas no longer needed for operational purposes.</p> <p>No stockpiling will occur within 100m of a creekline or waterway.</p>
Potentially contaminated stormwater from the stockpiling area (including asbestos)		Overland runoff	<p>Construction of erosion resistant earthen bund at approximately 0.4m in height surrounding the degraded material stockpiles.</p> <p>Material testing prior/during stockpiling.</p> <p>Different stockpiles for ballast clearing, major shuts and a separation stockpile for degraded material removed during emergency/urgent maintenance works, awaiting sampling and analytical results.</p> <p>Earthen sump to collect any stockpile run off and sediment following large rainfall events.</p> <p>Stockpiles will be inspected following large rainfall event to ensure integrity.</p> <p>Material unsuitable for repurposing and stockpiling will be disposed at an appropriate facility as soon as practicable.</p>
Asbestos		Air/windborne pathway	Ballast material is tested for asbestos prior to removal from the rail network.

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.

Table 2 and 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)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
No near human receptors within 2km	NA
Environmental receptors	Distance from prescribed activity
Surface water: Unnamed creek Maitland River	Unnamed creek – crosses the premises boundary. Minor creek – 90m north from premises boundary. Maitland River - 1km west. (Refer to Figure 1)
Groundwater	13mBGL (based on measurement from RTIO monitoring bore 20km from premises). DWER notes these results may not be reflective of groundwater levels in the area given the distance to the monitoring bore.
Aboriginal Heritage Site ABH2 (place ID: 23308) Maitland River (place ID: 18088) *Native title determination: Ngarluma/Yindjibarndi	ABH2 – 41 m. Maitland River – 1.9km West. (Refer to Figure 2)
Threatened Ecological Community Priority 3 (OBJECTID_1 1326)	80 m South. (Refer to Figure 3)
Vegetation	Vegetation units within the premises boundary: - ApyCwEflCcilPs: <i>Acacia pyrifolia</i> open scrub over <i>Corchorus walcottii</i> scattered low shrubs over <i>Eragrostis xerophila</i> , * <i>Cenchrus ciliaris</i> tussock grassland over <i>Pterocaulon sphacelatum</i> scattered herbs. -ERAx: <i>Eragrostis xerophila</i> tussock grassland. - HIApyTw: <i>Hakea lorea</i> , <i>Acacia pyrifolia</i> scattered tall shrubs over <i>Triodia wiseana</i> hummock grassland.

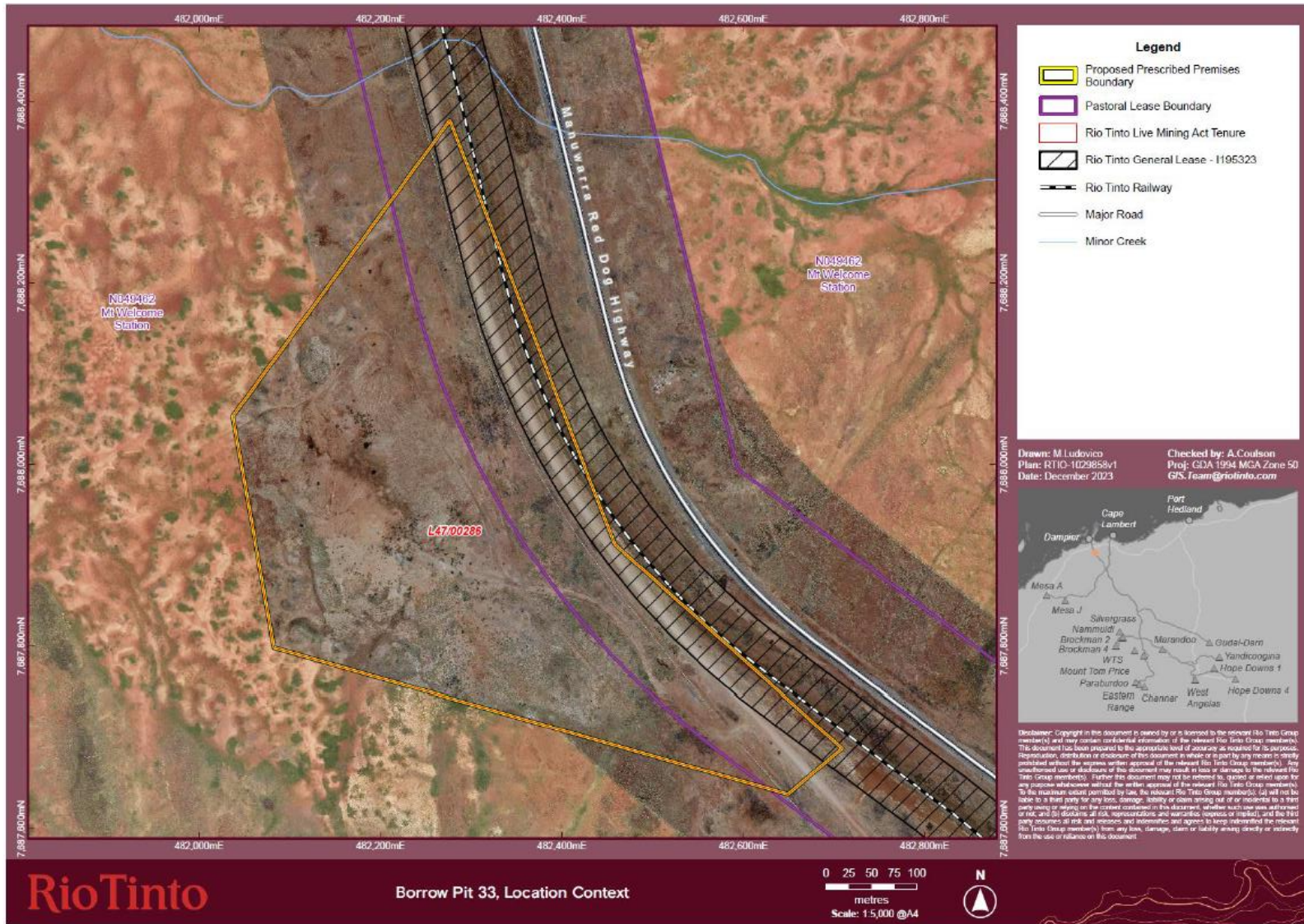


Figure 1: Distance to sensitive receptors

Works approval: W6879/2024/1

IR-T13 Decision report template (short) v3.0 (May 2021)

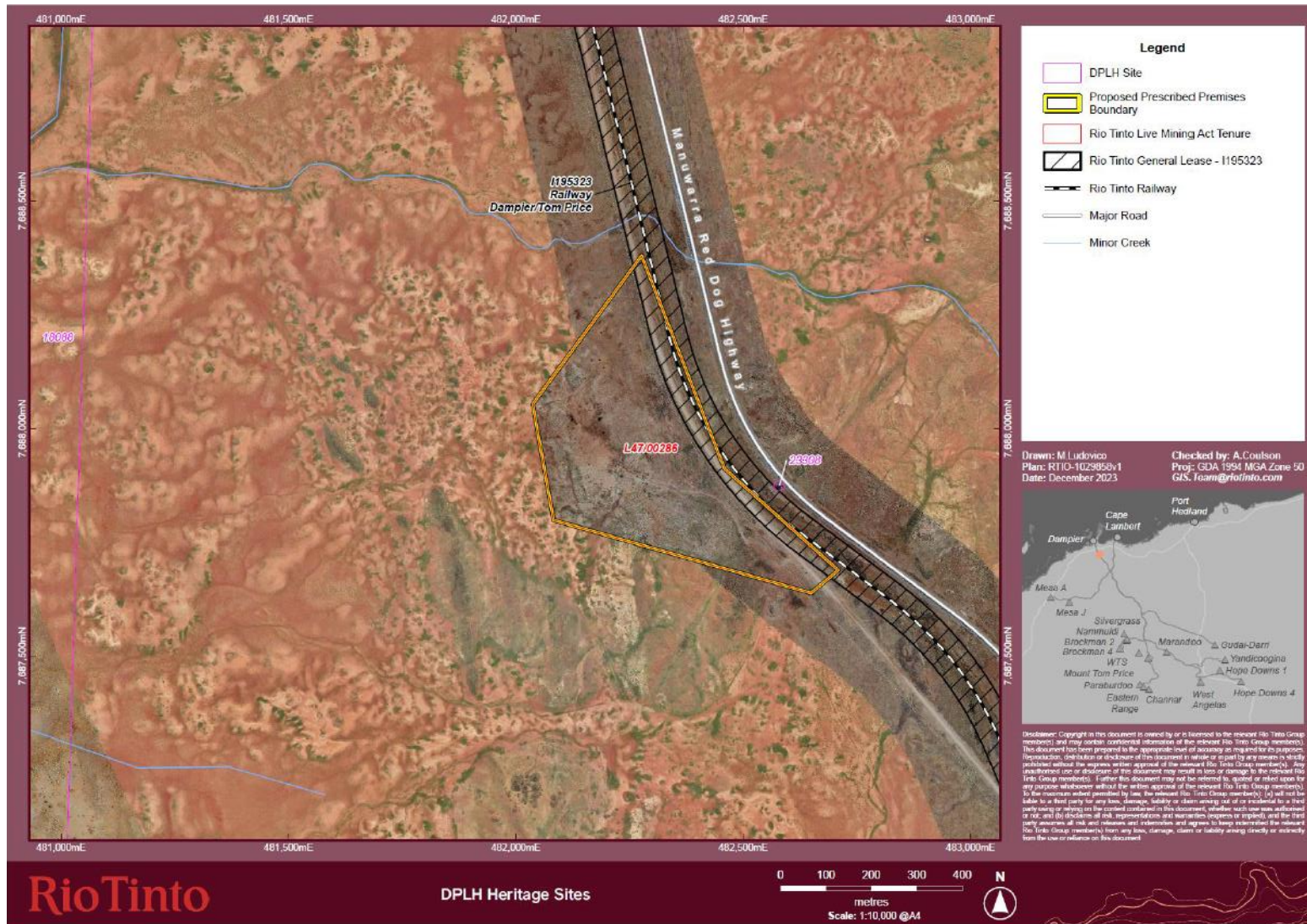


Figure 2: Mapped Aboriginal heritage places or registered sites (DPLH)

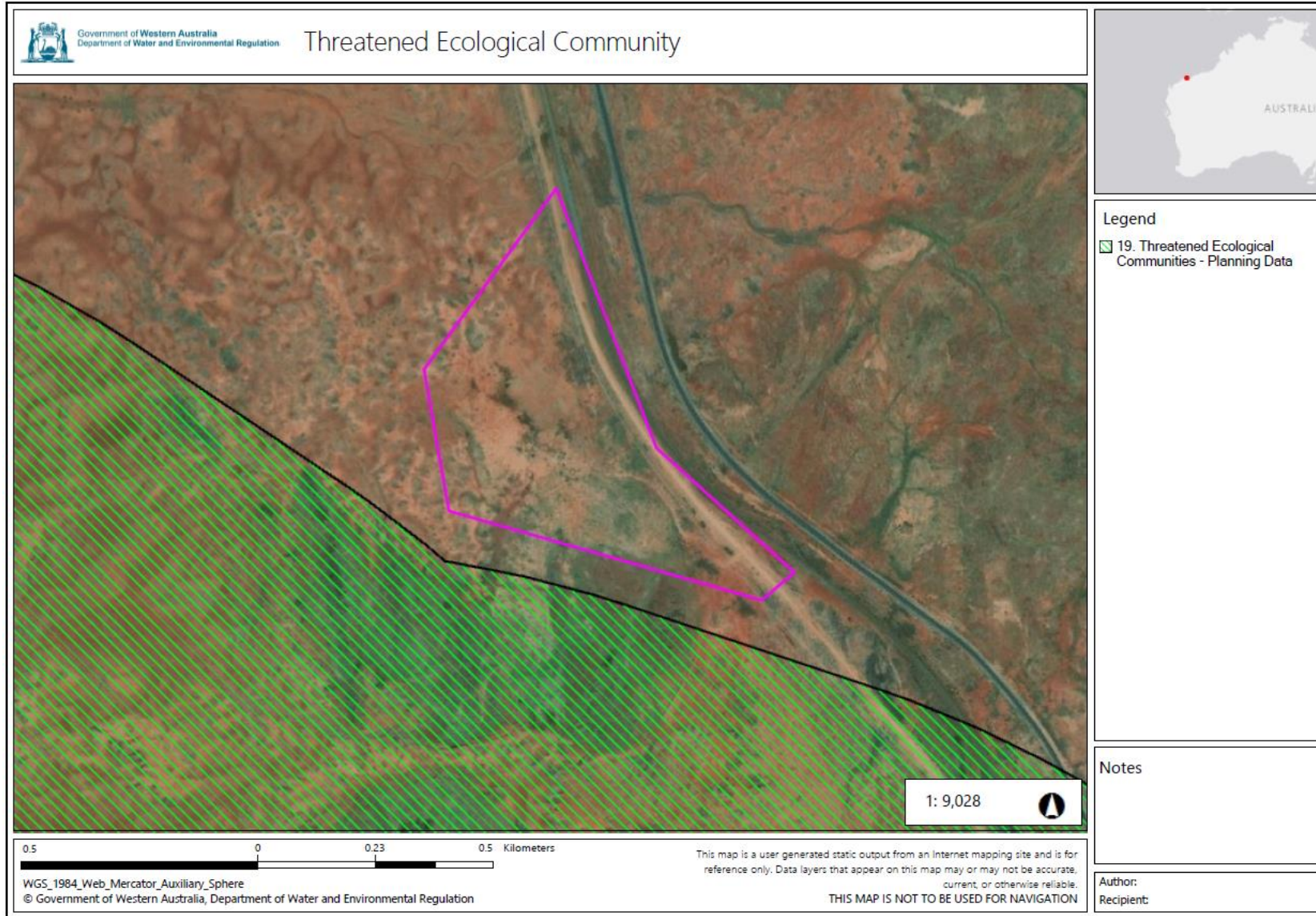


Figure 3: Threatened Ecological Community

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 W6879/2024/1 that accompanies this decision report authorises construction and 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. crushing/screening 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 construction and operation

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
Construction/Installation								
Placement of screen and associated equipment including vehicle movements	Dust	Air/windborne pathway causing impacts to health, environment and/or amenity	Surrounding vegetation	Refer to Section 3.1	C = Slight L = Possible Low Risk	Y	Condition 1: construction requirements, dust suppression requirements Condition 7: Material acceptance specifications	Condition 9, to regulate materials accepted at the premises
Construction of stormwater channels and stormwater earthen sump	Sediment laden and / or contaminated stormwater to surface water	Overland runoff potentially causing ecosystem disturbance	Creeks within premises boundary and creek 90m north from premises	Refer to Section 3.1	C = Slight L = Possible Low Risk	Y	Condition 1: Diversion of clean surface water around the work area via installation of earthen bund Condition 7: Material acceptance specifications	Condition 9, to regulate materials accepted at the premises
Operation (including time-limited-operations operations)								
Category 12 and 13: crushing/screening								
Screening, crushing, unloading, loading and storage of material Vehicle movements	Dust	Air/windborne pathway causing impacts to health, environment and/or amenity	Creeks within premises boundary and creek 90m north from premises Land/soils	Refer to Section 3.1	C = Minor L = Possible Medium Risk	Y	Condition 6 – Table 2: operational dust suppression requirements	NA
	Potentially contaminated stormwater from operational areas	Overland runoff potentially causing ecosystem disturbance or impacting surface water and or groundwater quality	Creeks within premises boundary and creek 90m north from premises Land/soils (contamination) Underlying groundwater	Refer to Section 3.1	C = Minor L = Possible Medium Risk	Y	Condition 1 and 6: installation and operation of earthen bund to divert stormwater	NA

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
	Discharge of hydrocarbons from vehicles and plant spills, and during refuelling operations	Direct discharge to land	Creeks within premises boundary and creek 90m north from premises Land/soils (contamination)	Refer to Section 3.1	C = Minor L = Possible Medium Risk	Y	NA	NA
	Asbestos fibre	Air/windborne pathway causing impacts to health, environment and/or amenity	Creeks within premises boundary and creek 90m north from premises Land/soils (contamination)	Refer to Section 3.1	C = Severe L = Rare High Risk	Y	Condition 1 and 6: construction and operational requirements – distance from water courses and stockpiles separation Condition 7: Material acceptance specifications Condition 8 – limit in asbestos content for recycled material Condition 9 – Monitoring of inputs and outputs from ballast recycling operations	In order to reduce asbestos contamination risk additional controls were added to the works approval: Condition 7, to regulate materials accepted at the premises. Condition 8, to limit maximum asbestos concentration of any recycled output. Condition 9, to monitoring the inputs and outputs of materials from premises
Category 61A: Solid waste facility								
Operation of solid waste facility including stockpiling, waste handling and vehicles movement	Dust	Air/windborne pathway causing impacts to health, environment and/or amenity	Creeks within premises boundary and creek 90m north from premises Land/soils	Refer to Section 3.1	C = Slight L = Possible Low Risk	Y	NA	NA
	Potentially contaminated	Overland runoff potentially causing	Creeks within premises	Refer to	C = Minor	Y	NA	NA

Risk events					Risk rating ¹	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
	stormwater from the stockpiling area	ecosystem disturbance or impacting surface water and or groundwater quality	boundary and creek 90m north from premises Land/soils (contamination)	Section 3.1	L = Possible Medium Risk			
	Asbestos fibre	Air/windborne pathway causing impacts to health, environment and/or amenity	Creeks within premises boundary and creek 90m north from premises Land/soils (contamination)	Refer to Section 3.1	C = Severe L = Rare High Risk	Y	<p>Condition 1 and 6: construction and operational requirements – distance from water courses and stockpiles separation</p> <p>Condition 7: Material acceptance specifications</p> <p>Condition 8 – limit in asbestos content for recycled material</p> <p>Condition 9 – Monitoring of inputs and outputs from ballast recycling operations</p>	<p>In order to reduce In order to reduce asbestos contamination risk additional controls were added to the works approval:</p> <p>Condition 7, to regulate materials accepted at the premises.</p> <p>Condition 8, to limit maximum asbestos concentration of any recycled output.</p> <p>Condition 9, to monitoring the inputs and outputs of materials from premises</p>

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 on 29 January 2024	No comment received.	NA
Department of Health advised of proposal on 23 January 2024	No comment received.	NA
Department of Planning, Land and Heritage advised of proposal 23 January 2024	Department of Planning, Land and Heritage provided comments on 30 January 2024.	Response and answer provided on Appendix 3.
Department of Jobs, Tourism, Science and Innovation advised of proposal on 23 January 2024	Department of Jobs, Tourism, Science and Innovation had not comment regarding the proposal.	NA
Applicant was provided with draft documents on 25 March 2024	Applicant provided requested information on 16 April 2024	Additional information noted and included in the final works approval. No additional comments were provided.

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. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Rio Tinto 2024, RTIO response to RFI Feb 2024 (REF: A2255587)

6. Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Submitter	Key area of concern	Summary of stakeholder comments	Response
Department of Planning, Land and Heritage (DPLH)	Traditional Owners	<p>Confirmed that the premises boundary does not intersect with any reported Aboriginal Heritage Places or Registered Sites. Therefore, no approvals under the <i>Aboriginal Heritage Act 1972</i> (AHA) are required in this instance.</p> <p>It's noted that the project is located 40m east from Aboriginal site ID 23308 (ABH2). If the disturbance footprint of the of the project is amended to intersect Aboriginal site ID 23308 (ABH2) approval under the AHA will required. The Aboriginal Cultural Material Committee determined Aboriginal heritage place ID 18088 (Maitland River), located approximately 1 km west of the project area, does not meet section 5 of the AHA.</p> <p>Noted that the premises boundary is within the Ngarluma/Yindjibarndi Native Title Determination area, specifically within the Traditional Lands of the Ngarluma People who are represented by the Ngarluma Aboriginal Corporation (NAC). The identification and management of cultural heritage within the traditional lands of the Ngarluma Traditional Owners is in accordance with the principles and practices outlined within Rio Tinto's Communities and Social Performance Guidelines, the Rio Tinto Cultural Heritage Group Procedure. Heritage surveys were previously conducted across the area and along the nearby railway line in 2012 and the area is scheduled for re-survey in 2024.</p> <p>DPLH encourage ongoing consultation with NAC to allow for best practice management of the Aboriginal heritage extant in the vicinity of the project, and to ensure Heritage Surveys undertaken to date remain fit for purpose to manage Aboriginal heritage. Should any upcoming surveys identify any potential Aboriginal heritage within the prescribed premises boundary, this information is to be submitted to DPLH for review and inclusion on the Register of Aboriginal of Places and Objects.</p> <p>Pilbara Iron Pty Ltd should ensure compliance under the current AHA and contact Aboriginal heritage conservation if they have any further questions.</p>	<p>Noted.</p> <p>The department acknowledges DPLH comments and support the comments that the applicant should continue consultation with NAC to allow for best practice management of the Aboriginal heritage extant in the vicinity of the project, and to ensure heritage surveys undertaken to date remain fit for purpose to manage Aboriginal heritage.</p>

Appendix 2: Ballast analysis results

Table 5: Ballast analysis results – total concentrations

Analyte	Min Conc. (mg/kg)	Max Conc. (mg/kg)	Mean + 1 Std Dev (mg/kg)	UCL95 (mg/kg)
Asbestos (FA/AF)	<0.001 %w/w	<0.001 %w/w	NA	NA
Antimony	<5	18	3.46	2.81
Arsenic	2.3	36	8.32	4.69
Barium	20	1370	203.80	108.41
Beryllium	<1	1.7	0.80	0.59
Cadmium	<0.1	1.5	0.51	0.22
Chromium	6.2	690	186.61	92.10
Cobalt	2	73	16.41	10.09
Copper	<1.0	167	43.10	25.52
Lead	<5	93	14.95	8.90
Manganese	180	2350	1082.27	830.38
Mercury	<0.1	0.43	0.06	0.05
Molybdenum	<1.0	17	1.89	1.09
Nickel	3	230	57.96	28.14
Silver	<1.0	1	1.04	0.82
Tin	<1.0	7.2	3.46	2.81
Vanadium	2.2	140	44.99	28.58
Zinc	<5	253	36.09	22.52
Selenium	<0.20	0.5	0.57	0.41
Thallium	<0.1	1.1	0.20	0.11
Uranium	0.1	1.4	0.70	0.55
Trivalent Chromium	6.1	708	192.75	96.34
Hexavalent Chromium	<0.5	13	0.73	0.35
Aldrin	<0.05	<0.10	NA	NA
Dieldrin	<0.05	14	1.195	0.267
Aldrin + Dieldrin	<0.05	14	1.43	0.35
Sum of BTEX	<0.2	<0.2	NA	NA
Total PAHs	<0.025	31.9	1.81	0.37
TRH >C16 – C34**	50	35,200	1,202	141.6

** TRH was detected above the laboratory LOR in 14 samples, of which 5 samples recorded concentrations above the uncontaminated fill guidelines

Table 6: Ballast analysis results – Australian Standard Leaching Procedure (Leachate) concentrations

Analyte	Min Conc. (µg/L)	Max Conc. (µg/L)	Mean + 1 Std Dev (µg/L)	UCL95 (µg/L)
Trivalent Chromium	<0.0010	1.66	0.1718	0.0499
Hexavalent Chromium	<0.0010	0.05	0.0248	0.0090
Antimony	<0.0010	0.0031	0.0006	0.0004
Arsenic	<0.0002	0.0055	0.0014	0.0008
Cadmium	<0.00005	0.0016	0.00014	0.00006
Cobalt	<0.0001	0.0549	0.0113	0.0052
Copper	<0.0005	0.14	0.0278	0.0133
Lead	<0.0001	0.0869	0.0147	0.0065
Manganese	<0.0005	1.78	0.6656	0.3366
Mercury	<0.000050	0.0002	0.000029	0.000022
Molybdenum	<0.0001	0.0233	0.0019	0.0008
Nickel	<0.0005	0.56	0.0575	0.0189
Selenium	<0.0002	0.0015	0.0004	0.0002
Silver	<0.00001	0.00014	0.00009	0.00005
Thallium	<0.00002	0.00065	0.00014	0.00007
Uranium	<0.00005	0.00204	0.00068	0.00038
Zinc	<0.001	0.487	0.0553	0.0221
Aldrin	0.0005	0.024	0.0018	0.0007
Dieldrin	<0.001	20.9	2.231	0.554
Aldrin + Dieldrin	<0.002	20.9	2.23	0.557
Aldrin	0.0005	0.024	0.0018	0.0007